APPLYING THE COMMUNITY OF INQUIRY FRAMEWORK TO INFORM THE INSTRUCTIONAL DESIGN OF ONLINE GRADUATE COURSES

by

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An executive position paper submitted to the Faculty of the University of Delaware in partial fulfillment of the requirements for the degree of Doctor of Education in Educational Leadership

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TABLE OF CONTENTS

LIST OF TABLES viii
LIST OF FIGURES ix
ABSTRACT x

Chapter

1 THE GROWTH OF ONLINE EDUCATION 1

Program Background 4

University of Delaware 4
Master of Education in Teacher Leadership 6

Review of the Literature 9

Community of Inquiry 9
Learning Management Systems 15
Technological Affordances 17

Summary 20
Problem Statement and Improvement Goal 21

2 APPLYING THE COI FRAMEWORK METHODS 24

Investigator Stance 24

Background: Survey of UD Canvas Users 25
Instructional Context 26
Participants 28

Data Sources 29

Faculty Reflection 29
Semi-structured Interviews 30
Teaching Artifacts 34
LMS Affordances 35

Data Analysis 36

Faculty Reflections 40
Semi-structured Interviews 42
Teaching Artifacts 44
LMS Affordances 48

3 FINDINGS 51

Question 1: How Do The Activities And Assignments Embedded Within The Selected Modules In The M.Ed. In TL Courses Reflect The CoI? 51

Social Presence 51
Affective And Open Communication 52
Group Cohesion 54
Cognitive Presence 56

Question 2: How Do The Activities And Assignments Embedded In The Selected M.Ed. In TL Modules Leverage The Technological Tools And Affordances Available In The Canvas LMS? 65

Multimodality 65
Interactivity 67
Collaboration 69

Limitations 72

4 USING THE COI FRAMEWORK FOR INSTRUCTIONAL DESIGN 75

Recommendations 75

Recommendation #1: Provide explicit instruction of CoI framework 75
Recommendation #2: Leverage LMS affordances to strengthen social presence 78
Recommendation #3: Leverage LMS affordances to strengthen cognitive presence 83
Recommendation #4: Leverage LMS affordances to strengthen teaching presence 85
Recommendation #5: Conduct systematic reviews of online program 88

Conclusion 90

REFERENCES 93

Appendicies

A IRB DOCUMENT 108
B INTERVIEW PROTOCOL 109
C FACULTY LETTER 114
D COI CODING TEMPLATE 117
E SURVEY INSTRUMENT 118
F MODULE ARTIFACTS COMPLETE CATALOGUE 122
G FACULTY MODULE SUMMARY 127
H OLC QUALITY SCORECARD 128
I QUALITY MATTERS RUBRIC 129

LIST OF TABLES

Table 1. Methods 23

Table 2. Master of Education in Teacher Leadership Curriculum 26

Table 3. Faculty Participant Background 29

Table 4. Interview Questions 32

Table 5. Faculty Interviews 33

Table 6. Canvas Tools As Applied in the Modules 36

Table 7. CoI Coding Rubric 39

Table 8. Technological Affordances Coding Rubric 40

Table 9. Course History 42

Table 10. First Cataloging of Module Sample 45

Table 11. Sample Mapping and CoI Rubric to a Teaching Artifact 47

Table 12. Affordances of Canvas Tools As Applied in Modules 49

Table 13. CoI Rubric Findings Social Presence 52

Table 14. CoI Rubric Findings: Cognitive Presence 57

Table 15. Examples of Cognitive Presence Findings 58

Table 16. CoI Rubric Findings: Teaching Presence 62

Table 17. Technological Affordances Analysis: Collaboration 70

LIST OF FIGURES

Figure 1. Program Website 7

Figure 2. CoI Model 10

Figure 3. Practical Inquiry Model 13

Figure 4. Sample Module Structure 34

Figure 5. Discussion Rubric 55

Figure 6. Practical Inquiry Model 57

Figure 7. Modality Sample 66

Figure 8. Interactivity: Link to Discussion Board and Graded Interactivity 68

Figure 9. Canvas pages (wiki) editor 80

Figure 10. Canvas Peer Review 81

Figure 11. Canvas Peer Discussion 82

ABSTRACT

As institutions continue to expand their online learning programs, it becomes increasingly important to identify research-based strategies to support their design. Numerous professional organizations provide guidance to institutions to direct the mechanics of online delivery. The Community of Inquiry (CoI) framework (Garrison, Anderson, Archer, 2000), a seminal work, is a prominent model for the development and evaluation of online courses and programs. The research suggests that by cultivating the three presences of CoI (social, cognitive, and teaching presences) and using them as a lens to design and evaluate programs, a high degree of student satisfaction, retention, and self-reported learning may result (Akyol & Garrison, 2008; Kumar, Dawson, Black, Cavanaugh, & Sessums, 2011; Meyer, Bruwelheide, & Poulin, 2009).

A fully online master's program recently graduated its first student cohort, presenting the opportunity to apply the CoI framework to the courses. The questions that directed this project originated from an interest to determine how the CoI might be reflected in the courses, how technological affordances were leveraged, and how the CoI could inform the instructional design of the course activities.

Findings from this project suggest that the courses did reflect the CoI framework despite the fact that instructors did not knowingly use it as a guiding model. Recommendations are also presented which may further leverage affordances and better reflect the strengths of the CoI framework in course design.

Chapter 1

THE GROWTH OF ONLINE EDUCATION

The purpose of this Executive Position Paper (EPP) is to recommend ways to integrate the Community of Inquiry (CoI) framework into the instructional design of graduate-level courses in a fully online Master's program at the University of Delaware. The CoI framework, a research-based seminal work, provides recommendations for strengthening the social, teaching, and cognitive presences in computer mediated online courses.

According to the Western Interstate Commission for Higher Education Cooperative for Educational Technologies (Poulin & Straut, 2016, p. 1), online education is "no longer an institutional accessory" and is now considered an integrated component of the institutional culture. This is evident in that almost six million college students were enrolled in at least one online course in the fall of 2014, reflecting a 7% increase of online enrollments in higher education from 2012 through 2014 (Allen & Seaman, 2016). Furthermore, the New Media Consortium 2016 Horizon Report cites alternative methods of delivery as a component of a "long-term impact trend" regarding "rethinking how institutions work" (Johnson, et al., 2016, p. 10). Online learning is a delivery format that supports the forward-thinking initiatives that are beginning to occur in higher education, such as re-connecting the working student to higher education. "Emerging models…are revealing the inefficiencies of the traditional system for nontraditional students" (Johnson, et al., 2016, p. 10).

As defined by the Online Learning Consortium (OLC), online courses have all course interactions online with no face-to-face meetings required and are designed primarily for students who have difficulties accessing a traditional campus experience (Sener, 2015). The OLC states that the 100% online model is the most common interpretation of how most institutions view online courses. However, some research groups define online courses as having at least 80% of the content and teaching delivered through the Internet and other technologies and the remaining 20% of the interactions potentially occurring in person (Allen & Seaman, 2016).

The online education format has been a catalyst for great debate about the educational rigor of online courses, especially in higher education settings (Allen & Seaman, 2012; Allen & Seaman, 2013; Bacow, Bowen, Guthrie, Lack, & Long, 2012; Jung & Latchem, 2012; Moore, 2013). For example, in a survey of higher education chief academic officers the Online Learning Consortium found that the majority agreed online learning is a strategic approach for their institutions, yet faculty do not necessarily accept its value and legitimacy (Allen & Seaman, 2016). These attitudes reflect conflicting opinions within an institution where leaders may want to pursue online educational options, but faculty resist teaching or developing such courses and programs due to their lack of acceptance of the model.

Although the literature suggests there is no significant difference between online learning and face-to-face learning (Means, Toyama, Murphy, Bakia, & Jones, 2010), questions remain regarding the administrative motivations of pursuing online education. It appears that these motivations have little to do with improved learning outcomes and more to do with revenue growth and serving busy adult student

populations (Bacow et al., 2012). For example, in April 2016 four disgruntled students filed a class action suit against George Washington University claiming the marketing of the online master's degree in security and safety leadership, did not match the promised rigorous learning experience (Straumsheim, 2016). This demonstrates that questions still remain regarding the quality of online education and underlying motivations.

The need to address the concerns for academic rigor have led professional and accrediting organizations to develop and adopt evaluation processes to review and inform online teaching and learning. The metrics generally outline strategies stakeholders can use to evaluate the institutional, faculty, and student support frameworks, the instructional design, and teaching strategies (Online Learning Consortium, 2016; Middle States Commission on Higher Education, 2011).

There are numerous professional organizations administrators and faculty can turn to for information regarding the administration, development, and teaching of online courses. These organizations also provide several frameworks and rubrics to guide the development of online courses, offering a number of quality assurance standards. For instance, the following documents are readily available on the Internet to support online learning:

- Interregional Guidelines for the Evaluation of Distance Education (Online Learning) Middle States Commission on Higher Education (2011)
- Quality Scorecard for the Administration of Online Education Programs, published by the Online Learning Consortium (OLC) formerly Sloan-C (2014)

- OLC Quality Framework (n.d.)
- Quality Matters: The Quality Matters Higher Education Rubric, fifth edition (2014)

Although these guides provide a number of resources and standards, many institutions choose to adopt their own frameworks and protocols to tailor the support, creation, and evaluation of online courses and programs.

Program Background

The following section reviews the context of the institution and the program that administer the M.Ed. in TL degree program. The module review and investigation of the guiding questions occur within the purview of these two organizational branches.

University of Delaware

The University of Delaware (UD), a medium-sized institution in the Mid-Atlantic region, has supported various forms of online learning for more than 25 years. Beginning in the 1960's, UD students could enroll in various course formats such as televised, videotaped, two-way video, satellite, and online courses. In 1988 the institution created a department called FOCUS (Flexible Options for Continued University Studies) to support the administrative functions of online courses. In early 2000 the program name was changed to UD Online to reflect the use of the Internet for delivery methods; it continued to provide various levels of administrative support for online courses. Fully online courses have been supported since 1999. The number of enrollments has ranged from a few hundred in the late 1980's to more than 9,000 during the program's peak in 2003.

The process of creating online courses at the University of Delaware is incumbent upon the faculty members and their departments. Instructors are given the academic freedom to create their own courses and they typically do not have to attend any formal training or course review prior to teaching online. It is the responsibility of the faculty member or supporting department to seek developmental guidance through the UD Online office or other support units on campus like Academic Technology Services. The exception to this process occurs when a faculty member teaches a course that is part of a curriculum falling under the purview of a commercial vendor that has contracted with the institution. In this case the vendor provides faculty support for the course development.

In 2012 the University signed a contract with a for-profit commercial company, Academic Partnerships, to support the course development, marketing, enrollment, and student retention of the online Master of Business Administration degree. When the University began exploring options other than Academic Partnerships, several vendors were invited to compete for the contract. In the spring of 2015 an agreement was entered into with Wiley Education Services as the second commercial vendor to support the marketing, recruitment, enrollment, and course development activities. Only faculty members who teach for specific online programs, which Wiley has evaluated for financial solvency, are eligible for their support. Local campus support, such as Academic Technology Services and UD Online, continue to be available for faculty who teach courses that do not come under the Wiley authority.

Master of Education in Teacher Leadership

The University of Delaware has supported several online programs and courses ranging from nursing to engineering. In the fall of 2014 the new fully online Master of Education in Teacher Leadership (M.Ed. in TL) enrolled its first cohort of teaching professionals (E. Soslau, personal communication, March 15, 2016). This program was developed as a direct result of the state of Delaware teacher requirements, which currently focuses one of its teacher professional development outcomes on educational leadership (Delaware General Assembly, 2010). Recently in 2016, the Delaware Department of Education introduced a "Delaware Teacher Leader Pilot" to learn more about "how teacher leadership can benefit educators and students" (Delaware Department of Education, 2016, p.1). The courses in the M.Ed. program were developed to align with the National Teacher Leadership Standards (NTLS), the Interstate School Leaders Licensure Consortium (ISLLC), and the Interstate Teacher Assessment and Standards Consortium (InTASC). The program website is presented in Figure 1, below.

Figure 1. Program Website

The ten 3-credit courses are offered in seven-week semesters and were designed by five education faculty members who have an average of fourteen years as higher education faculty. In the early stages of program development, it was thought that Academic Partnerships would support the development and marketing. However, that contract was being renegotiated which resulted in the faculty members relying on their own expertise and that of a campus support unit, Academic Technology Services, to design the program. In 2015 when Wiley became the University's online vendor, the M.Ed. in TL program agreed to become part of their contract with the institution. Four courses were developed with Wiley's support and the remaining six,

initially designed by the faculty when the program began in 2014, were revised with Wiley's support beginning in 2015.

During the initial design phase of the program, the faculty met several times to discuss the pedagogy of the program and courses. They designed the program based on an experiential learning model that contextualized the learning experience to directly connect students' professional teaching experiences in the classroom to the graduate course content (Kolb & Wolfe, 1981). This is generally achieved in each course through the introduction of relevant content and exercises to teach the new information to the students. The students then apply the concepts in their professional settings and finally through thoughtful metacognitive exercises, the students reflect and share their results and experiences with the instructor and peers. All of these activities occur fully online through the Canvas LMS. This concept of connecting students to real-world experiential activities has been noted as a method for facilitating "deep learning" (Johnson, et al., 2016). Deep learning is considered to be an educational technique that can facilitate a student's "meaning of the content, relating several ideas and connecting them to previous experiences to foster their own personal understanding" (Johnson, et al., 2016, p. 14). The University of Delaware has been a leader of these activities with the development of the Institute for Transforming Undergraduate Education (ITUE) for more than a decade.

The competitive admission requirements state that prospective students must work in a teaching setting and be interested in seeking to become teacher leaders. When applicants submit their personal statement with their application they are asked to review their short and long-term goals, to describe a problem they would like to

pursue in their professional setting, and to connect their responses to how a M.Ed. in TL can support them. They are also asked to describe their strategy to self-manage their time and learning. The faculty review committee then confers and only accepts those applicants who meet or exceed the requirements and demonstrate a strong interest in teacher leadership.

The summer of 2016 marked the graduation of the first cohort of M.Ed. in TL students. A logical step at this time is to review the program successes and think deeply about potential improvements to ensure students are receiving the best possible online learning experience.

Review of the Literature

The literature review provides a background of the research supporting the work guiding this project. It will review the development of the CoI framework and its three supporting elements (social, cognitive, teaching presences), learning management systems, and technological affordances.

Community of Inquiry

A highly regarded research-based model for the creation and evaluation of online learning is the CoI framework developed by Garrison, Anderson, and Archer (2000). The framework stemmed from their use of computers to support group discussions in a newly developed hybrid master's program at the University of Alberta in 1997. This new program prompted their concern "to define, describe and measure the elements of a collaborative and worthwhile educational experience" (Garrison, Anderson, Archer, 2010, p.6). As technological affordances for communication became more readily applied in the teaching environment, they

wanted to develop a model that would help scholars and administrators create and teach their own computer mediated courses and programs.

The framework suggests that by creating an environment that develops three core elements: social, cognitive, and teaching presences, a CoI can be sustained to promote student engagement and learning (Garrison et al., 2000; Swan, Garrison & Richardson, 2009), as seen in Figure 2, below. The CoI is considered a seminal work in computer mediated learning and is a key element to understanding online pedagogical practices (Akyol et al., 2009).

Figure 2. CoI Model (Garrison et al., 2000)

The CoI was undergirded by the philosophical tenants of John Dewey's community and inquiry and Matthew Lipman's concept of a CoI (Dewey, 1933; Garrison et al., 2010; Lipman, 2003). With the understanding that the social context of learning affects the learning activity, the need to sustain a community that could support inquiry was imperative. A CoI is seen as a "hallmark of higher education" and supports, according to Garrison and colleagues, "(re)constructing experience and knowledge through the critical analysis of subject matter, questioning, and the challenging of assumptions" (Garrison, Anderson, & Archer, 2001, p.7). Garrison et al. (2000) found that this critical thinking could be expressed in a framework described as cognitive presence, which led them to consider the role of the instructor (teaching presence) and student interactions (social presence) within a computer mediated or online environment. More broadly, Garrison and his colleagues were developing a model founded in teaching and learning theories and extended this to incorporate technological affordances that could be leveraged to achieve these pedagogical concepts. Although originally conceived for computer mediated communication, the model has expanded along with the technological affordances (Garrison et al., 2010; Swan et al., 2009).

Social Presence. Social presence is considered a fundamental element for the successful teaching of online learning experiences. It rests in the student's ability to "project themselves socially and emotionally in a community of inquiry" (Rourke, Anderson, Garrison, & Archer, 2001, p.3). The three components of social presence include: affective communication, open communication, and group cohesion. Affective communication is considered to be the interpersonal chatting and informal

exchanges that happen when people are getting to know one another through interactions. Open communication develops a more productive exchange between participants resulting in constructive and critical feedback. Group cohesion, a result of the previous two, occurs when students identify themselves as a part of the CoI embodying critical thinking (Garrison & Akyol, 2013). Some studies suggest that social presence is necessary for increased interaction and that group cohesion is related to higher-quality learning outcomes (Dixson, Kuhlhorst, and Reiff, 2006; Garrison & Arbaugh, 2007; Swan & Shih, 2005).

Cognitive Presence. Cognitive presence is described as "…the extent to which learners are able to construct and confirm meaning through sustained reflection and discourse in a critical community of inquiry" (Garrison et al., 2001, p.11). Garrison et al. (2001), based on Dewey's reflective inquiry theory, developed the Practical Inquiry Model to define and show the progression of cognitive presence. This model illustrates the process that the learner follows through an internal world of exploration, deliberation, and integration and an external or shared world of a triggering event, action, and resolution (Garrison & Akyol, 2013; Garrison et al., 2001). The progression to critical thinking via cognitive presence is described as the iterative process of the Practical Inquiry Model, as presented in Figure 3.

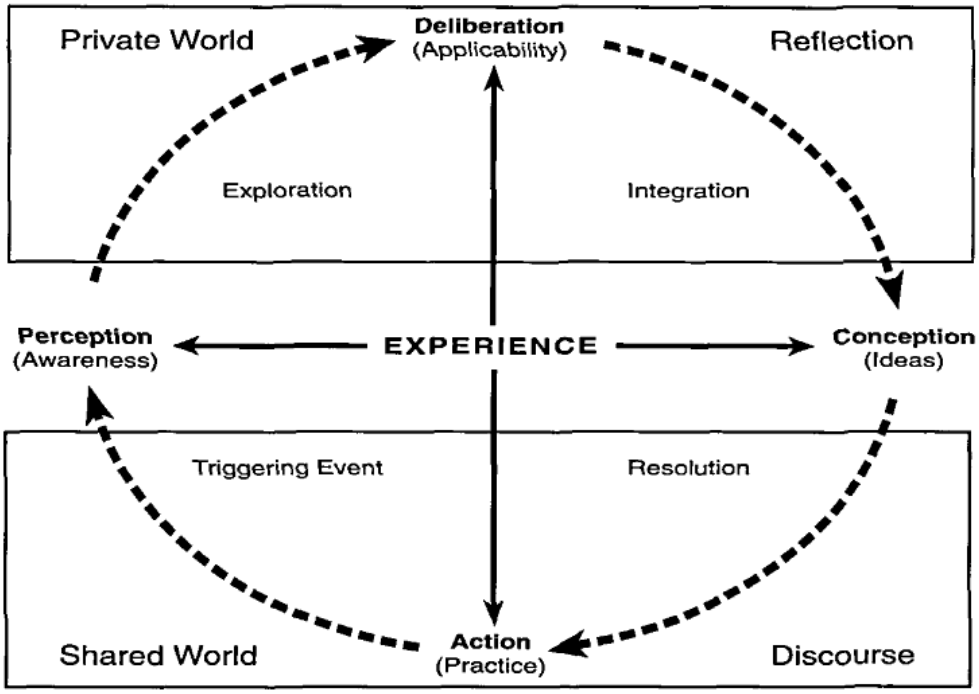

Figure 3. Practical Inquiry Model (Garrison et al., 2001)

Students need guidance to move through these stages of higher order thinking in an online environment, which can be challenging for instructors to achieve (Garrison & Arbaugh, 2007; Garrison et al., 2001). Research has shown that student communication generally stays at the information exchange and exploration phase (Luebeck & Bice, 2005; Meyer, 2003, 2004; Murphy, 2004). Two key elements of overcoming this challenge is the development of assessments that support this model and the instructor's close facilitation to ensure that students are moving through all stages (Akyol & Garrison, 2011).

Ultimately, a fundamental component of the cognitive presence element is that of teaching presence. It is the relationship with the instructor in which the learner experiences cognitive presence through these guided stages of the inquiry process.

Teaching Presence. Teaching presence is the underlying foundation of the CoI and is the driving force behind students engaging with the cognitive and social presences. It is defined as "the design, facilitation and direction of cognitive and social processes for the purpose of realizing personally meaningful and educationally worthwhile learning outcomes" (Anderson, Rourke, Garrison, & Archer, 2001, p.5).

Teaching presence consists of the following three elements: design and organization (instructional design), facilitating discourse, and direct instruction (Garrison et al., 2001). When courses are online asynchronously, as in the M. Ed. In TL program,, instructors need to carefully consider the design of their courses and make their teaching and evaluation explicit because there are no face-to-face opportunities for clarification (Shea, Sau Li, & Pickett, 2006). For interaction and discourse to occur the faculty member must create these types of opportunities and facilitate them. Direct instruction is supported when instructors provide content, direction, feedback, and assessments, all of which can be readily identified by students (Shea et al., 2006).

It is through teaching presence that all three spheres connect and is considered the "significant determinant of student satisfaction, perceived learning, and sense of community" (Garrison & Arbaugh, 2007, p. 163).

Research on CoI. Research has demonstrated that the CoI model is a valid framework for informing online education (Arbaugh, 2007; Arbaugh et al., 2008; Garrison, Cleveland-Innes & Fung, 2004; Shea & Bidjerano, 2009; Swan et al., 2008). In its original inception the CoI was evaluated based on course discussion transcripts, and then evolved in 2007 to the 34-item survey instrument which has

proved to be a valid and reliable measure of the three presences (Arbaugh et al., 2008). See Appendix E for the student survey.

The CoI framework has been used extensively for the evaluation and development of online courses and programs (Akyol & Garrison, 2008; Kumar, Dawson, Black, Cavanaugh, & Sessums, 2011; Meyer, Bruwelheide, & Poulin, 2009). For example, the College of Education at the University of Florida evaluated their online Doctorate of Education program using the CoI framework (Kumar et al., 2011). Their findings suggest that by using the 3 presences as a lens to design and evaluate their program, the implementation of the CoI model resulted in a high degree of student satisfaction (Kumar et al., 2011). Montana State University-Bozeman completed a review of an online certification program in library media and found that the CoI was a helpful model "to distinguish what faculty do well and what students who stay enrolled in an online program find valuable" (Meyer et al., 2009, p. 142). Meyer et al. further recommended that this framework be studied for implications regarding student retention (2009). Taddei & Budhai (2016) recently examined the construct of applying cognitive presence in the assessment design of student voice-recorded reflections which provided a way "…ultimately to guide students through reflection and action" and have a deeper learning experience (p. 45).

Learning Management Systems

Ninety-nine percent of higher education institutions report having a learning management system (Dahlstrom, et al., 2014). The LMS is defined as a cloud-based architecture that provides students and instructors a common online location to exchange information for teaching and learning using a database driven infrastructure

(Kroner, 2014). It is typically a password protected environment that only students and instructors associated with specific courses can access.

Faculty and students alike report overall satisfaction with the LMS; however, satisfaction begins to decline when more advanced features are utilized such as collaborative and engagement tools (Dahlstrom, et al., 2014). Less than 42% of instructors report using LMS tools that promote interaction outside of the classroom. Because more advanced features are not used as often, students and faculty may not be as comfortable with the tools themselves or the application and design of the feature may be clumsy or lacking. Both faculty and students agreed that they could become more skillful users of the LMS with better training. Those faculty who do use the LMS with a higher degree of sophistication have higher satisfaction ratings than those who do not (Dahlstrom, et al., 2014). Each year (and sometimes more frequently) the LMS systems are updated and become more robust; therefore, it is incumbent upon the instructor to understand how they can use these systems to support the learning process when it is only the LMS between the instructor and student (McGee, Carmean, & Jafari, 2005).

A learning management system without content does not promote learning. It is only with pedagogical intent, instructional design, carefully curated content, and a skillful application of tools that the LMS transforms into a supportive learning environment (Carmean & Brown, 2005). Fully online courses require the careful application of sound pedagogy and technological affordances, which play a critical role in the online teaching and learning community.

Furthermore, the literature notes the importance of understanding LMS usage as it influences how students and faculty interact with each other and the content (Dahlstrom et al., 2014; Kroner, 2014; McGee et al., 2005; Moore & Kearsley, 2005; Ray, 2009). LMS usage becomes a critical factor when, as in fully online courses, it is the central tool for students and faculty members to connect and develop their own Communities of Inquiry.

Technological Affordances

Technological affordances are defined as "actions associated with the use of digital tools designed to achieve certain goals" (Beach, Anson, Breuch, & Reynolds, 2014, p. 2). An LMS is a set of digital tools with affordances that include multimodality, collaboration, and interactivity (Beach & O'Brien, 2015; Castek & Beach, 2013). When considering the LMS, it is quite possible that its affordances are unknown by the user. Exploration and experimentation are required in order to leverage the affordances (Jamian, Ab Jalil, & Krauss, 2012). The three most common affordances applied in this project are multimodality, interactivity, and collaboration.

Multimodality. A mode is defined as a resource that can construct meaning and relies upon the culture or community to define, "…when it is a known/usable system within a community" (Jewitt, 2013, p.253). The following three elements help define modes: (1) a mode can articulate content (ideational meaning); (2) construct social relations (interpersonal meaning); and (3) create coherence (textual meaning) (Jewitt, 2013, p. 253). Examples of modes are words, hyperlinks, audio, images, moving images, video, sound, and speech (Bezemer & Kress, 2008; Jewitt, 2013). When modes are combined in an interaction, it is called multimodality.

Multimodal literacy is described as knowledge distribution and acquisition through multiple modalities (Bezemer & Kress, 2008; Jewitt, 2013). One of the key elements of multimodality is its design (Karchmer-Klein & Shinas, 2012; Kress & Selander, 2012). It is important to understand that "In multimodal text or space, modes cannot be interpreted individually, rather, they must read as a connected unit" (Karchmer-Klein & Shinas, 2012, p.61). In an online course, the individual designer (the instructor) communicates information in multiple ways by selecting specific modalities. This occurs through specific design choices. The learner then interprets this information and provides responses.

The LMS provides several types of functionality that allows users to create multimodal materials. Canvas has embedded modes such as video and audio recording tools, an accessible interface to insert images, video content, text, and hyperlinks. For instance, many of the tools in the LMS like quizzes, discussion questions, and content pages have the capability to create multimodal experiences by harnessing the many modes available.

Interactivity. Interactivity can be observed in multiple ways, it is the dialogue and interaction between students and instructors, students to students, as well as the interaction between the students and the content (Moore, 2013). A student posting a thought, perception, or assignment in the public space of a course and having other students respond and extend the thinking of the post is one example of an interactive experience (Beach & O'Brien, 2015). Student participation and interaction is imperative for learning to occur in the online environment (Coppola, Hiltz, & Rotter, 2002; Chickering & Gamson, 1987; Garrison et al., 2010; Rovai & Barnum, 2002).

For instance, students enrolled in nineteen online graduate courses reported a higher degree of satisfaction and self-reported learning when there was a high degree of interactivity in the online course (Rovai & Barnum, 2002).

Another level of interactivity is the interaction that occurs between the users (students and instructors) and the LMS. In an online course, interaction with the content occurs through the LMS. Depending on the structure of the course and the multimodality design applied to the content, the student may have a substantial or minimal degree of interactivity with the content. For example, content delivered via pdf files will have a different level of interactivity than a course using multimodal text, video, images, etc. Ultimately, without interaction there is no online course, interactivity is one of the critical elements of the design process.

Lastly, one very specific form of interactivity is feedback. Students improve their knowledge and learning when they have been given adequate feedback and with reasonable frequency (Bransford, et al., 2000; Chickering & Ehrmann, 1999; Chickering & Gamson 1987). This can be achieved by the instructor grading and responding to student posts as well as with peer-to-peer feedback. Many of the LMS tools can be used to leverage feedback for students. These tools can help students "…to engage in reflection on their own learning processes; and to receive guidance toward progressive revisions that improve their learning and reasoning" (Bransford et al., 2000, p. 243).

Collaboration. Collaboration is a process by which members of a group (students) negotiate, share, and construct meaning in response to a situation that could be provided by an employer or an instructor (Bransford et al., 2000; Stahl,

Koschmann, & Suthers, 2006). The field of computer supported collaborative learning (CSCL) studies how people learn together using computers. CSCL encourages the design of online activities to provide opportunities for students to work together, thereby removing the isolation that can readily occur in an online environment (Stahl et al., 2006). Instructional elements for collaborative activities closely resemble the professional environment and promote learning transfer from the class to other spaces (Bransford et al., 2000). Collaborative exercises allow students to practice sharing expertise and making group decisions. Collaborative tasks must be well-defined so that students understand the requirements and perceive the task as a worthwhile activity (Jeong & Hmelo-Silver, 2016).

Three key benefits of collaboration have been articulated in the literature as supporting motivation, knowledge sharing, and cognitive engagement (Blumenfeld, Kempler, & Krajcik, 2006). When a faculty member creates an authentic collaborative experience for students they are more likely to stay engaged because they are working toward a common goal that requires shared effort and responsibility. Furthermore, collaboration provides a space for students to share their knowledge and contribute their individual strengths and personal experiences resulting in cognitive engagement.

Summary

Technological affordances such as multimodality, collaboration, and interactivity leverage tools to achieve instructional design strategies. Each of these affordances are important to identify and support for student learning and satisfaction

(Blumenfeld et al., 2006; Chickering & Gamson, 1987; Coppola, Hiltz, & Rotter, 2002; Garrison et al., 2010; Rovai & Barnum, 2002).

Although an LMS such as Sakai or Canvas presents users the opportunity to leverage affordances, there are instances when users are either unaware of their existence or the affordances are not readily accessible to the typical user (Gaver, 1991). For example, in an informal survey I conducted regarding the use of two common learning analytics tools in Canvas (course analytics and student access), less than 10% of the respondents (N=90) reported using either of these functions. The question remains whether respondents do not want to use these tools or if they are not aware of or could not access the functionality that the tools provide. However, sixty-eight percent of the respondents reported that they would be interested in learning more about these tools. The tools are readily available to help instructors view student course participation and their level of interactivity with the course and their peers, but are typically not used.

Problem Statement and Improvement Goal

Given the increased interest in online education in combination with my role as an educational technologist at the University of Delaware, I selected this institution to pursue my project for this Executive Position Paper (EPP). Furthermore, because the M.Ed. in TL program graduated its first class in summer 2016, the program leaders expressed interested in reviewing the program. The faculty continues to be committed to delivering effective, rigorous learning experiences to students. However, being the first of its kind in the School of Education, there is no precedent

for evaluating 100% online education programs. Therefore, a systematic review of the program is a timely activity.

The purpose of this EPP is to examine one module in each of the required ten courses (ten modules total) taught by the five full-time faculty members in the M.Ed. in TL program to determine if and how the CoI framework, a seminal work, is reflected in each of the week-long modules (Garrison, Anderson, & Archer, 2000). The goal is to provide recommendations for strengthening the social, teaching, and cognitive presences (described below) in the online program as a whole. The following questions guided this work:

1. How do the selected modules in the M.Ed. in TL courses reflect the CoI?
2. How do current assignments in the selected M.Ed. in TL courses leverage the technological tools and affordances available in the Canvas LMS?
3. In what ways can the course assignments in the M.Ed. in TL courses be revised to reflect CoI and leverage Canvas tools and affordances more effectively?

Table 1 outlines the methods used to examine the questions.

Table 1. Methods

Phase	Question	Data Collection	Context
Phase 1	How do the selected modules in the M.Ed. in TL courses reflect the CoI?	Faculty reflection & module selection Module review	Analyze existing course content Ascertain how the Canvas LMS currently supports the identified modules
Phase 2	How do the selected modules in the M.Ed. in TL courses reflect the CoI?	Faculty semi-structured Interviews Module analysis	Identify successes and areas for improvement
Phase 3	How do current assignments in the selected M.Ed. in TL courses leverage the technological tools and affordances available in the Canvas LMS? In what ways can the course assignments in the M.Ed. in TL courses be revised to reflect CoI and leverage Canvas tools and affordances more effectively?	Module analysis Canvas tool inventory	Determine if and how LMS affordances can support suggested improvements Determine if an applied framework can be used to support program improvements

Results will be disseminated in the form of a course summary for each faculty member and a presentation to stakeholders.

Chapter 2

APPLYING THE COI FRAMEWORK METHODS

This chapter reviews the context of this project in relationship to the investigator's background and the impetus for this project. The participants and data resources are then explained in detail. The analysis of the data sources are provided to conclude the chapter.

Investigator Stance

I have been a member of the University of Delaware community for 20 years and have valued the opportunity to support faculty and staff in the pursuit of quality online education. My interest in online learning started in 1997 when the university was still in the early stages of developing procedures, processes, and strategies to support distance learning students and faculty. As paper syllabi and VHS tapes morphed into digital resources, my fascination for the technological support of education grew. Most of my questions about online learning have focused on how and why faculty members use digital tools, what makes some instructors more experimental than others, and why administrators make certain decisions when implementing this teaching format.

One of my more recent roles as an Educational Technologist at UD was to guide faculty members to find solutions to their teaching questions. Many times this resulted in the review and evaluation of technological tools that could support teaching and learning. Based on problems posed by instructors I would routinely

explore the functionality embedded in the Learning Management Systems, Canvas and Sakai, to determine how they could benefit faculty members and possibly mediate their teaching challenges. I would often seek online resources to guide faculty members such as the Quality Matters rubric (2014) and the Online Learning Consortium's Scorecard (2014). Although these tools are very useful, they did not always provide the level of guidance that was needed. This is why I wanted to explore the CoI framework to determine if it could provide an additional level of instructional design support.

Background: Survey of UD Canvas Users

In the fall of 2015 I conducted an informal survey with UD faculty members who were users of the Canvas LMS to determine their usage of learning analytics (LA) data collected within the LMS system. Determining the use of this tool was important to understand due to recent literature suggesting that learning analytics can inform pedagogical strategies and instructional design (Lockyer, Heathcote, & Dawson, 2013; Macfadyen & Dawson, 2010, 2012; Wright, McKay, Hershock, Miller, & Tritz, 2014; Siemens & Baker, 2012). Results of this survey indicated that the majority of instructors who use an LMS to support their courses were not aware of, chose not to, or rarely used the two main analytic tools available: course analytics and student access. This lack of use is not unique to UD, it was reflected in findings reported by the EDUCAUSE Center for Analysis and Research in 2014, which stated that learning management systems' full capabilities are rarely used (Dahlstrom et al., 2014).

Given the findings of my survey coupled with the EDUCAUSE report, I decided to focus my EPP on a specific set of courses taught by instructors who design and teach courses as part of a fully online program, the M.Ed. in Teacher Leadership.

Instructional Context

The Master of Education in Teacher Leadership program is fully online and designed to provide flexible options for busy teaching professionals. The program requires a minimum two year commitment that consists of thirty credit hours (10 courses) taught by five full-time University of Delaware faculty members using the Canvas learning management system. The courses are offered in seven-week terms with five terms scheduled each year (fall A, fall B, spring A, spring B, summer). Table 2 provdes a complete list of courses and the number of students in each. The first cohort of students graduated in summer 2016.

Table 2. Master of Education in Teacher Leadership Curriculum

Course	Number of Students
The Role of Literacy Across the Content Areas	69
Data-Based Decision Making & Assessment	43
Understanding Teacher Leadership	60
Action Research	52
Foundation Skills in Common Core Standards	63
Fostering Technology-Based Collaboration	30
Topics in K-12 Policy	39
Designing Professional Development	58
Coaching Teachers	47
Promoting Equitable Schools	49

This EPP investigated one module in eight of the ten M.Ed. in TL courses using the CoI model as a framework for identifying successes and areas in need of improvement in the online program. Upon the evaluation of the applied model and participant feedback, I determined how the CoI framework currently aligns with or can improve the LMS technological affordances. It is imperative to note that the instructors did not use the CoI framework to design their courses and were not provided information about this theory prior to this project.

The purpose of this EPP is to support M.Ed. in TL faculty in the instructional design of their coursework for one module in each of the courses that make up the program. The following questions guided this work:

1. How do the selected modules in the M.Ed. in TL courses reflect the CoI?
2. How do current assignments in the selected M.Ed. in TL courses leverage the technological tools and affordances available in the Canvas LMS?
3. In what ways can the course assignments in the M.Ed. in TL courses be revised to reflect CoI and leverage Canvas tools and affordances more effectively?

According to the instructors, the foundation of the teaching and learning methodology for the M.Ed. in TL is based on experiential learning. Experiential learning theory consists of a four stage process critical to learning: concrete experience; reflective observation; abstract conceptualization; and active experimentation (Kolb & Wolfe, 1981). The Association for Experiential Education

identifies that the experiential model embodies "…carefully chosen experiences [which] are supported by reflection, critical analysis, and synthesis" (2016). Ultimately, within the M.Ed. program the students are actively engaged in this iterative learning process by crafting their responses to an assignment using their own educational setting and then reporting findings back to graduate peers for reflection, analysis, and synthesis.

Participants

The five faculty members who teach the courses for the Master of Education in Teacher Leadership were invited to participate in this EPP. Four of the five were able to commit to the participation requirements. The four participating faculty, had an average of 21 years overall teaching experience, an average of 14 years of experience as higher education faculty, and an average of 6 years of online teaching experience with a range from 1-13 years. See Table 3. Their fields of expertise included literacy and technology, action research, and mobile computing environments.

Most faculty members did not have any formal training to teach online and relied on program meetings and peer support to guide the development of their courses. They stated that learning about teaching online was an informal yet purposeful and insightful process. All but one instructor commented that teaching online had a positive impact on how they teach their face-to-face classes.

Table 3. Faculty Participant Background

Faculty Number	Gender	Total Years Teaching Experience	Years of Online Teaching Experience
1	Male	29	4
2	Female	20	5
3	Female	13	1
4	Female	23	13

Prior to collecting data an Institutional Review Board evaluation was conducted to ensure the safety and ethics of the proposed instruments. The University of Delaware Institutional Review Board (UD-IRB) provided authorization to conduct this project. This project received Human Subjects Institutional Review Board exempt status on June 23, 2016. See Appendix A. Prior to participation each participant was asked to read, review, and sign a consent letter. See Appendix B for the interview protocol. Four of the five participants consented to participate.

Also, it is important to disclose that three of the four members of my EPP committee (including my advisor) are instructors in the program in which I conducted this project.

Data Sources

I collected four types of data in this project: (1) faculty reflections of self-identified course modules; (2) faculty semi-structured interviews; (3) teaching artifacts within the course modules; and (4) inventory of LMS affordances.

Faculty Reflection

In August 2016 each instructor received an email letter asking them to review their courses and choose one module they would like to improve. See Appendix C.

Once they selected the module, they were asked to answer the following questions: (1) Why did you select this module for review? (2) Did you receive student feedback on this particular module? and (3) What changes do you think would improve this module? Faculty responses were collected via email for ease of access. Once I received the reflections, I scheduled interviews which were conducted between August and November 2016. I sent a follow-up email a few months after the initial contact in which I asked the faculty members to clarify how many times and in what formats they had taught each of the courses to provide additional context to their reflections.

The purpose of requesting faculty to identify only one module for analysis was twofold. An entire online course can contain a great deal of information using hundreds of content pages, tools, links, and resources. Maintaining the scope of the project required limiting the data set to permit a focused analysis. The faculty teach each module for one week during a seven week semester, which provided a snapshot of the course content and activities. The reflections provided the initial understanding of the faculty members' thoughts about what was important regarding the selected module.

Semi-structured Interviews

In the email letter to the participating faculty I requested they complete a module reflection and schedule a semi-structured interview to discuss the module they chose to review. I conducted the interviews using Zoom, a web-based software. Zoom is a video conferencing tool that enabled me to record voice and screen sharing video for analysis and review. I requested permission to record each interview to

enable transcription, evaluation, and categorization of responses. Prior to the interviews each participant signed a release form to indicate his/her understanding of this process. See Appendix B for the interview protocol.

I did not provide instructors with the questions in advance and we did not discuss the details of the CoI during the interviews. The purpose of not disclosing the CoI background information was to determine if this framework already existed and if it could enhance the instructional design. This withholding of information permitted the discussion of the modules and solutions to evolve naturally without influence.

I organized the semi-structured interviews around three types of questions: background, perceptions, and module review, see Table 4. The purpose of these questions was to gain the following: (1) an understanding of the participants' overall views of online teaching and learning and (2) a detailed understanding of their views of the identified modules. I did not alter the questions during the interview process and I prompted all participants with the same questions. I asked clarifying questions during the module review to provide insight to the application of the Canvas tools and the student feedback.

Table 4. Interview Questions

Questions	Category
How many years have you taught in total, in higher education, at this institution, using the fully online format?	Background
What are your perceptions of teaching in a fully online program?	Perceptions
Describe the course and its context in the program.	Module Review
Which module did you select and why?	Module Review
What was successful and problematic about the module?	Module Review
What student feedback did you receive about this module?	Module Review
Describe the timeline and requirements of the module?	Module Review
What could improve the module?	Module Review
What training did you receive to teach online?	Perceptions
How do you learn new things about teaching online?	Perceptions
What advice would you give to new online instructors?	Perceptions
Has teaching online impacted your face-to-face teaching?	Perceptions

I conducted interviews over a four month period from August through November 2016 and the interviews lasted an average of 49 minutes. Two faculty members completed their course reviews in one interview session and two faculty members were interviewed on a total of two separate occasions each. I conducted a total of six interviews with four individuals, see Table 5. I did not start the recording of one faculty member (noted with the asterisk) until the discussion of the first course module. I took notes for the first two questions and used this information for the analysis.

Table 5. Faculty Interviews

Course	Length of Interview	Number of sessions	Month
Course X Course X	63 minutes	One interview session for both courses	August
Course X Course X	49 minutes*	One interview session for both courses	September
Course X	48 minutes	Session 1	October
Course X	46 minutes	Session 2	October
Course X	48 minutes	Session 1	October
Course X	43 minutes	Session 2	November

*I failed to start the recording for approximately 10 minutes when asking the first two questions. The recording started when the instructor began talking about the first course.

I transcribed each interview was by hand and copied the resultant text into the NVivo qualitative software for analysis. The coding and analysis process is described in-depth in the data analysis section.

The purpose of the interview was to elicit information regarding the perceived effectiveness of the module, its achievements, and its gaps in performance. In particular the interviews provided information related to faculty experiences regarding the instructional design strategies, how they thought they could improve the module, how they applied the Canvas tools, and student feedback. With the faculty members' perspectives, I was able to further explore how the students interacted with the instructor, their peers, the content, and the LMS within the context of the one module.

Teaching Artifacts

Teaching artifacts are all of the components that were designed or curated by the faculty member to teach a specific module. I received observer-level access to each of the Canvas courses from each of the faculty members to access the artifacts that resided in the LMS. This access enabled me to carefully analyze the modules and how the faculty applied the Canvas affordances. The modules that the faculty identified in their reflections consisted of activities, content, and other instructional design elements that they wanted to review and potentially improve.

The structure of a module from a sample course is shown in Figure 4. The titles are masked to uphold anonymity.

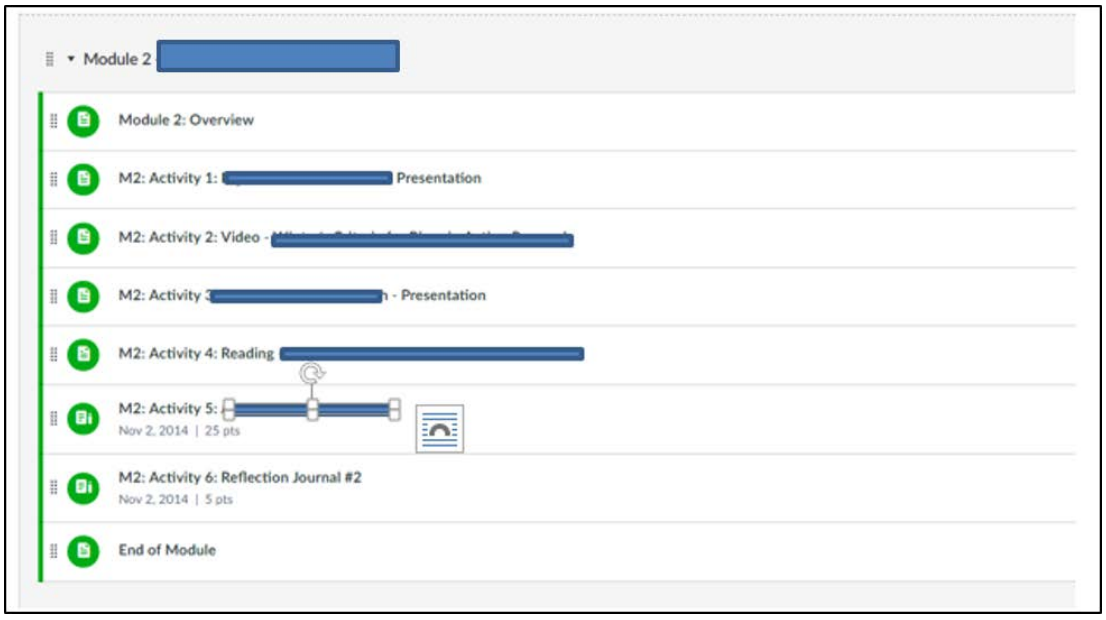

Figure 4. Sample Module Structure

It is important to note that I did not review or collect student submissions, discussions, grades, course evaluations, analytics, or recorded faculty feedback on

assessments. I obtained Canvas access to analyze the content and design of the identified module from an instructional design perspective.

I collected artifacts to investigate whether the modules provided evidence of instructional design strategies using the CoI framework in the existing context. This will be discussed in more detail in the analysis and findings sections. Again, it is imperative to note that the instructors did not use the CoI framework to design their courses and were not provided information about this theory prior to the project.

LMS Affordances

The Canvas LMS provides several technological affordances to assist online teaching and learning through a variety of sophisticated tools. Table 6 reviews the functionality of the tools that the faculty members used to support their instructional strategies. It is important to note that the tools listed only reflect the technologies that the instructors applied in the identified module and not the complete course. The affordances of these tools will be discussed in the analysis section.

Table 6. Canvas Tools As Applied in the Modules

Tool	Functionality
Pages	Provide text, embed video, embed audio, create hyperlinks, add images, create links to other Canvas tools
Discussions	Establish a classroom discussion space where faculty create topics and students post questions and respond to peers; includes the editing functionality of the Pages tool (provide text, embed video, embed audio, create hyperlinks, and add images)
Module	Arrange course content in hierarchical order by content, weeks, modules, etc.; apply settings to permit or deny student access based on prerequisites
Assignments	Apply individual or group settings and provide a method for faculty to grade or account for activities
Syllabus	Add multimodal content and embed a chronological listing of assignments, events, and the course side bar, which contains a calendar and assignment groupings if used
Student Groups	Provide a mini-course that has most of the functionality of the parent course but is restricted to instructor-identified groups
Collaborations	Use Google Docs so students can work together on an activity using revisions, commenting, and history access (saved in real time in the cloud)

Collecting this data set was important for three reasons. It provided the required information to analyze the affordances that the faculty used in the module tools, to investigate their potential applications, and to evaluate what additional tools may be of value to utilize.

Data Analysis

I analyzed the data sources (faculty reflections, semi-structured interviews, teaching artifacts, and LMS affordances) using a deductive qualitative case studies research strategy to explore their potential connections to the CoI framework (Merriam & Tisdell, 2016). I identified the analysis strategy because it met the

criteria of "…an in depth description and analysis of a bounded system…" (Merriam & Tisdell, 2016, p. 38). The bounded system was one module from each of the eight courses within the UD M.Ed. in TL program. It is important to note that this study did not examine the eight courses in their totality, meaning all assignments, content, and interactions that took place throughout the seven week semester. Instead, the study focused on one fraction (the module) of the seven week course.

Deductive analysis was critical to the completion of this work. The process of deductive analysis applies previously defined theories or frameworks to data that can be evaluated and categorized based on this existing knowledge (Elo & Kyngas, 2008). In this work I applied the known theory of CoI and the affordances of multimodality, collaboration, and interactivity to the data analysis by using rubrics I created that encompassed their components.

First, I designed a rubric based on the CoI literature and specifically used two documents as grounding resources: (1) the CoI Coding Template designed by Garrison, Anderson, and Archer (2000) found in Appendix D and (2) the CoI student survey instrument, originally designed by Arbaugh et al. (2008), with a recent version posted on the CoI website (n.d.). See Appendix E. In its original inception the CoI was evaluated in courses using the coding template on course discussion transcripts. The survey, a 34-item student survey, instrument was added as an evaluative instrument and has proved to be a valid and reliable measure of the three presences (Arbaugh et al., 2008; Swan et al., 2008). In addition to referring to the literature, these two sources provided the foundation for identifying the key words and phrases

for the development of the rubric to guide the module analysis. The details of the CoI Coding Rubric are in Table 7.

Table 7. CoI Coding Rubric

Phrases or words to identify elements of the CoI *	
Social Presence: opportunity for "students to project themselves"	
Affective	Social interaction; sense of belonging; application of Canvas tool to permit social presence
Open	Comfortability and sense of trust cultivated; participation opportunities; faculty encouragement
Group Cohesion	Use of groups; critique, peer feedback, opinion encouraged; collaboration encouraged
Cognitive Presence: "learners are able to construct meaning, appreciate and explore content"	
Triggering Event	Problem piques curiosity; motivating; interesting
Exploration	Many resources; discussion opportunity; brainstorming opportunity
Integration	Combine new information; construct new knowledge; reflections, discussions
Resolution	Test and apply new knowledge; develop solutions related to workplace, profession; apply new knowledge to work or non-class activity
Teaching Presence: module is "designed to realize personally meaningful and educationally worthwhile outcomes"	
Design & Organization	Goals clearly communicated; instructions clearly communicated; participation instructions are clearly communicated
Facilitation	Guiding; exploring; encouraging and reinforcing
Direct Instruction	Focus on issues; feedback is timely; promote student learning

*The words and phrases in this rubric are directly identified and use descriptions developed by Arbaugh et al., (2008); Garrison et al., (2000); Swan et al., 2008).

Second, similar to the development of the CoI coding rubric, I used the literature published on technological affordances to design the affordances rubric as detailed in Table 8.

Table 8. Technological Affordances Coding Rubric

Code	Description
Multimodality	Words, hyperlinks, audio, static images, moving images, video, sound, speech (Bezemer & Kress, 2008; Jewitt, 2013).
Interactivity	Dialogue and interaction between students and instructors, students to students, as well as the interaction between the students and the content (Moore, 2013).
Collaboration	Group decisions, knowledge sharing, and cognitive engagement (Blumenfeld, Kempler, & Krajcik, 2006).

Early in the process of designing these rubrics, I recognized that I was not able to adequately categorize and code the data. For example, I originally had broad level definitions that I thought would enable me to code based on the broad definitions alone. However, I came to the realization that I needed more detailed descriptors to thoroughly examine the evidence presented in the data. This resulted in creating several iterations of the rubrics until I believed they adequately reflected the findings in relation to the CoI and affordances. I describe in more detail how I applied these rubrics to the data sources in the following sections.

Faculty Reflections

The reflections required participants to review their course and identify a module to explore for this study. I also asked them to explain why they identified the module, including concerns, feedback, and potential solutions. These data were useful because they provided a snapshot of the module from the participants' points of view.

I applied the CoI and affordances rubrics described above to the reflections to determine the presence of these concepts in the instructors' initial thoughts about their modules. It is important to note that three course reflections indicated that instructors wanted to review the course beyond the scope of this project. In these three courses they identified more than one module they wanted to review or they indicated that the entire course needed to be redesigned.

Table 9 provides a context of the courses taught by the participants. It is a synopsis of the history of the number of times each course has been taught and who designed each course. The course designer column identifies if the faculty member created the course themselves (self), if the course was co-designed with another faculty member, or if the faculty member taught a course they did not design.

Table 9. Course History

Course	Total number of times taught	Number of times taught for online program	Course designer
Course 1	2	2	Self
Course 2	1	1	Self
Course 3	1	1	Self
Course 4*	9	1	Co-designed
Course 5	1	1	Self
Course 6*	1	1	Self
Course 7	1	1	Self
Course 8*	1	1	Did not design

*Indicates that instructors had difficulty selecting only one module and would have preferred reviewing multiple modules, multiple assessments, or a course-level review.

The asterisks in the table indicate the three courses in which the instructors referred to more than one module. This was evident when they described multiple modules or course level issues. For example, one faculty member reported, “It was tough for me to choose one module because the entire class needs to be redesigned.” And another said, “I would not change a particular Module. Rather, I would consider changes in two areas…” This is discussed more in the limitations section.

Semi-structured Interviews

I recorded each interview using Zoom, transcribed the interview by hand, copied the transcript into the NVivo software, and then coded. I divided the coding into two sections based on the types of questions that asked: perceptions and module review. I analyzed the perception questions using constant-comparative methods,

reading and re-reading the data to identify recurring broad themes (Merriam & Tisdell, 2016). For instance, I refined the broad theme “different than face-to-face” (F2F) from labels such as “more work” and “challenges.” After re-reading the responses several times the participants seemed to be stating how online teaching is different than F2F teaching and provided various reasons for this. Upon further reflection, I was able to create the broader level theme of “different than F2F” to encompass the foundational theme of these statements.

The participants generally responded to the perception interview questions within these coded categories. Regarding the question if teaching online has impacted face-to-face teaching one of the four faculty members was not sure if there was any impact whereas the others were readily able to provide examples of impact.

I analyzed the module review questions using the CoI and affordances rubrics previously described. The rubric items received an “X” if the participant referred to any of the key phrases, identified language, or referenced an activity that described any of the presences or affordances. I performed the first iteration of coding rapidly to use my initial judgement, I took longer with subsequent reviews to analyze them thoroughly and to ensure that I fully applied the definitions.

The NVivo software provided the structure and technology to catalog data sources and confirm that the coding for each module was complete. Using this tool enabled me to confirm that I coded all of the same resources for each unit of data and to confirm that I applied the coding based on the CoI framework. I could quickly run queries and reports to analyze my process and check my work. NVivo supports the

ability to run a project map for any node component or the entire coding structure to review the project and determine the structure and overlapping concepts.

Teaching Artifacts

The analysis of the teaching artifacts within the modules was a complex process that occurred through several iterations using the CoI and affordances rubrics. In the eight modules there were a total of 100 activities reviewed. In this project I define an activity as one of many separate elements that make up the module. The number of activities within a module ranged from eight to seventeen. For instance, one module might consist of the following nine activities: (1) module overview, (2-6) five presentations, (7-8) two activities or assessments, and (9) a closing. See Figure 4 earlier. The analysis process consisted of the following recursive steps:

- An overview of the module to get a sense of its purpose
- A review of the content including assessment rubrics, syllabus, and digital resources
- A review to catalogue the tools utilized by the instructor
- A review to analyze the tools' affordances
- A review to identify if/how social, cognitive, and teaching presences were evident
- A process to perform notetaking, rubric application, and literature reference during each of these stages for supportive evidence.

Table 10 provides an example of an initial content review for one activity of Course 1. Note that this sample only provides a snapshot of one of the fifteen activities that were included in this specific module.

Table 10. First Cataloging of Module Sample

Catalog	Detail
Course and Module	C1M2
Activity	Presentation
Canvas Tools	Content Page; discussion tool
Modality	Text; video; link to discussions: questions/comments for M2
Video/Audio Time	6:51
Resources	Instructor presentation of content
Group or Individual	Individual

I felt more comfortable applying the rubrics after an initial review of the content that I catalogued because I had a foundation from which to work. I reviewed each module based on the key words, identifying themes, and phrases found in the rubrics. Using the affordances of the tools that the instructor selected in addition to the text found in the assessment instructions, I identified evidence of each of the CoI elements.

The overview was derived from an in-depth review of each course. See Appendix F for the complete analysis of the eight modules which demonstrates the CoI mapping of the module elements in detail.

I analyzed all of the modules using Excel spreadsheets and the categories identified and evaluated below. Table 11, below the category descriptions, provides an example of how I mapped one module element (an assessment) to the CoI rubric.

- Course and Module identifies the course and module.

- Module title is the name of the module component as it is titled in the Canvas Learning Management System (LMS); module titles have been altered to maintain the anonymity of the instructors.
- Activity uses the following classification of the module element:
    - Objectives: list and or review the objectives and provide an introduction to the module
    - Presentations and readings: provide content resources
    - Assessment: evaluate students' understanding of content and consists of a point value that contributes to the student's course grade
    - Closing: ends the module typically with a closing slide, resources, or instructor remarks.
- Canvas tool is the name of the tool that was selected to convey the module activity. Some activities have links to more than one Canvas tool. Each tool has leveraged affordances as described below in the affordances section.
- CoI Mapping as follows:
    - Social presence is identified when there is an opportunity for students to engage in affective and open communication and the potential to demonstrate group cohesion (Rourke, Anderson, Garrison, & Archer, 1999; Garrison & Akyol, 2013).
    - Cognitive presence is the opportunity for students to create meaning through a "sustained reflection and discourse in a critical

community of inquiry" (Garrison, Anderson, & Archer, 2001, p. 11); identified when there is a triggering event, an opportunity for exploration, integration, and the resolution of content (Garrison et al., 2001).

- Teaching presence is identified when there is an opportunity for the instructor to design and organize the learning environment (instructional design), facilitate discourse, and direct instruction (Anderson, Rourke, Garrison, & Archer, 2001).

Table 11. Sample Mapping and CoI Rubric to a Teaching Artifact

Sample Mapping of the CoI Rubric* to a Teaching Artifact	
Course and Module	C2M4
Module Title	Pedagogy and Education
Activity	Assessment: Case Study
Canvas Tools	Discussions, Google Hangouts, Google Docs
	Phrases or words to identify elements of the CoI
Social Presence: opportunity for "students to project themselves"	
Affective	Evidence: small group activity
Open	Evidence: students encouraged to brainstorm
Group Cohesion	Evidence: students are directed to work as a group and develop a cohesive analysis
Cognitive Presence: "learners are able to construct meaning, appreciate and explore content"	
Triggering Event	Evidence: Thought-provoking title and case analysis topic

Sample Mapping of the CoI Rubric* to a Teaching Artifact	
Course and Module	C2M4
Exploration	Evidence: Two resources provided; detailed assessment instructions: identify, explore, consider
Integration	Evidence: detailed assessment instructions: imagine outcomes; brainstorm
Resolution	Evidence: detailed assessment instructions: brainstorm immediate response; brainstorm long-term policy; craft a plan of action
Teaching Presence: module is "designed to realize personally meaningful and educationally worthwhile outcomes"	
Design & Organization	Evidence: instructions for assessment are clear and explicit
Facilitation	Evidence: students are encouraged to brainstorm and explore content
Direct Instruction	Evidence: thorough instructions

*The words and phrases in this rubric are directly identified and use descriptions developed by Garrison, Anderson, and Archer (2001) and Swan, Shea, Richardson, Ice, Garrison, Cleveland-Innes, and Arbaugh (2008).

LMS Affordances

Based on the CoI mapping analysis and my understanding of the Canvas tools, I applied a matrix to map the three technological affordances of multimodality, collaboration, and interactivity, to the tools that instructors used in the modules, as seen in Table 12.

- Leveraged affordance is the observed affordance leveraged from the use of the selected tool employed in the Canvas environment. These tools are selected by the instructor to enable a level of:

- Multimodality: modes that are combined to provide meaning such as text, images, video, sound (Bezemer & Kress, 2008; Jewitt, 2013).
- Interactivity: the opportunity for students and instructors to post thoughts and reply to extend the meaning and receive instructor feedback (Coppola, Hiltz, & Rotter, 2002; Chickering & Gamson, 1987; Rovai & Barnum, 2002).
- Collaboration: when group members negotiate, share, and construct meaning (Stahl, Koschmann, & Suthers, 2006).

Once I identified the technological affordances of the Canvas tools, I reviewed the modules again based on the tools the instructor utilized within the module. The table below shows each tool in the module and its technological affordance. It is important to note that similar to the CoI mapping, I evaluated more than the tool's capability. For example, if a faculty member used a group tool, the ability to leverage collaboration is evident in the tool selection. However, if the instructor did not actually leverage the tool for collaborative use, I did not characterize it as such. This issue will be discussed more in the findings section.

Table 12. Affordances of Canvas Tools As Applied in Modules

Tool*	Multimodality	Interactivity	Collaboration
Pages	X		
Module	X		
Syllabus	X		
Discussion Boards	X	X	X
Assignments	X	X	X

Tool*	Multimodality	Interactivity	Collaboration
Collaborations	X	X	X
Canvas Groups	X	X	X

*Tools are defined in Table 6.

Triangulation allows a researcher to perceive the data in multiple ways (Denzin & Lincoln, 2005). My project may not be "perfectly repeatable" (p.454) due to the nature of the qualitative method; however, this application of multiple perspectives provides some degree of verification (Denzin & Lincoln, 2005). I achieved verification in that I analyzed each of the module components in the LMS in conjunction with the faculty reflections, interviews, and descriptions of the courses and program. For instance, I used the interview transcript to review my interpretation of the module components in addition to the assessment instructions and assessment rubric.

Chapter 3

FINDINGS

The following chapter reviews the findings and the limitations found from the analysis of the CoI inquiry.

I analyzed one module in each of the eight M.Ed. in TL archived Canvas courses using the lens of the CoI theoretical framework as well as multimodality, interactivity, and collaboration afforded by the Learning Management System. The findings reported below were identified through the data collection process described earlier.

Question 1: How Do The Activities And Assignments Embedded Within The Selected Modules In The M.Ed. In TL Courses Reflect The CoI?

Overall, the CoI model was evident from the instructional design strategies of the instructors, the observations of how the affordances of the Canvas LMS tools were used, the supporting assignment templates, and the scaffolding of the module documents and resources. Although I did not review the entire courses, this limited glimpse of the program still demonstrated that all three presences were evident. I describe the key findings for each of the CoI elements below.

Social Presence

I identified social presence, the ability for students to project themselves into a CoI (Rourke et al., 2001), in all of the courses. This section describes how the M. Ed.

In TL course modules reflected the three categories of social presence: affective communication, open communication, and group cohesion.

Table 13. CoI Rubric Findings Social Presence

Course and Module	C1M2	C2M4	C3M2	C4M1	C5M2	C6M3	C7M7	C8M7
Number of Module Activities	15	17	12	10	15	10	13	8
Affective	X	X	X	X	X	X	X	X
Open	X	X	X	X	X	X	X	X
Group Cohesion		X						

Affective And Open Communication

I combined affective and open communication (getting to know one another, feeling at ease to communicate, offering support and encouragement) for this findings section because these categories of social presence were difficult to differentiate in the project due to evaluating the potential of the module activities to elicit them and not actual behaviors. Fundamentally, these two categories describe how students can project themselves into their CoI (Rourke, et al., 2001). I found affective and open communication in all of the modules through the use of discussion boards that provided students with opportunities to interact. I found that instructors utilized discussion boards in two ways: feedback and assignments.

For example, five courses provided student feedback opportunities by using the discussion boards to allow students to ask questions about assignments and course content. This use of discussion boards provided many opportunities for students to build affective and open communication. Instructors placed feedback discussion

boards on content pages and in assignment posts typically as hypertext links labeled, “ask your instructors” or “post questions about the assignment here.” The instructors primarily designed these discussion boards so that students could post questions about course activities to the instructor to which the instructor or peers could respond. It is important to note that instructors do not consider feedback discussions as part of the graded activity of an assignment, but rather as opportunities for students to clarify any issues they have about their understanding of the content and the assignments.

Despite having these feedback-type discussions, two faculty members commented that students did not utilize these opportunities for clarification. One instructor reported that if he/she would have had the student feedback that it could have impacted instruction.

> That’s what I wish they would have done actually. Like I think it would have been nice to hear from folks saying this seems really redundant what do you want me to do that would be different here than in [another course] and that would have actually forced me, I think, to come to a better understanding of that. No, I didn’t get any feedback on that in this place [discussion board]…

These faculty felt some level of frustration when opportunities for students to engage in clarifying discussions were available but not utilized.

Another way that instructors used discussion boards was to provide a shared space for students to post their responses to a faculty prompt. Instructors assigned a point value to most assignment discussions and expected students to complete them. This public posting allowed students to see peer responses and the opportunity to respond.

Group Cohesion

Group cohesion promotes critical discourse and supports the collaborative nature of learning. It is promoted within the CoI framework as an important factor to student learning (Garrison & Akyol, 2013). For purposes of this project, group cohesion will be distinguished as planned and unplanned. I identified an indicator of planned group cohesion when an instructor designed an assessment's outcome or evaluation (rubric/instructions) in such a way that a group of students would be prompted to analyze and apply content to develop a synthesized outcome representing their combined efforts. I identified unplanned group cohesion when the tools provided affordances for group cohesion, but the instructor did not provide an explicit prompt to indicate that students should work together to achieve a group outcome. I used this focused definition because I was looking for evidence to support that the instructor deliberately wanted students to work together. Using this more concentrated definition, group cohesion was evident in only one module activity.

The observation that planned group cohesion was not readily evident across modules was an interesting discovery because despite the several instances of group work in seven of the eight modules, the instructor did not direct the groups to create a collaborative product (Swan et al., 2008). In seven of the modules the instructor prompted students to participate in some level of group activity that supported two of the three social presence elements, affective and open communication and fundamentally establishing social interaction and community, but not a group constructed assessment.

I investigated the potential for planned group cohesion in the assessment instructions and in the assessment rubrics, which indicated that students should respond to one another and to do this a certain number of times. There was only one rubric to support group cohesion beyond this level. It is important to note that all of the group activities still support the fundamental nature of social presence and should not be diminished.

To differentiate between open/affective and group cohesion in assignment rubric/instructions, examples follow for each.

Planned group cohesion is not evident in the assignment instructions of this discussion board rubric that asked students to respond to five prompts provided by the instructor and to post these responses in one of the two group discussion boards based on the student's video selection, seen below in Figure 5.

Discussion Board Rubric: [redacted]				
Criteria	Ratings			Pts
Post demonstrated understanding of topic by responding to the given prompt. Examples are included from video and views are supported by class resources. Sources are provided using APA format.	5.0 pts	3.0 pts	1.0 pts	5.0 pts
				Total Points: 5.0

Figure 5. Discussion Rubric

This rubric evaluates students on content understanding and writing level but it does not directly support guidance for students to respond or build community. It is also important to note group cohesion opportunities were sometimes intentionally discouraged as explained in this comment from a faculty member.

> I don't like group work for stuff where the blind are leading the blind. But why would you put together a bunch of students who have never written

> [content topic] before and make them support each other?...It's not like I mean they can ask and probe and say I don't understand and push for clarity but they can't say like that's a manageable [course topic].

Therefore, it is important to note that in some instances where group cohesion was not cultivated it may have been intentionally designed this way. Furthermore, from the interviews faculty members indicated that they struggled with grading written activities in large class sizes that reached up to 69 students. It is conceivable that faculty deliberately chose to not incorporate this level of group cohesion as it is difficult to manage and grade.

Group cohesion was evident in one activity that prompted students to work as a group to identify and brainstorm responses to a case study. The result of their work was to create a plan of action based on their group work, their group thinking. The instructions state, "As you discuss the case, you will have to build consensus about the 'ideal' response that represents the group's thinking…" The instructor clearly communicates to students that group work is expected.

I noted that although group cohesion was not directly evident in seven of the modules' assignment instructions and rubrics, group cohesion could occur naturally without prompts from the instructor, which I could only determine by evaluating student responses. Because evaluating student responses was beyond the scope of this project, the decision to measure planned group cohesion based on explicit instructions found in the assignments was warranted.

Cognitive Presence

Cognitive presence, founded on the Practical Inquiry Model based on Dewey's reflective inquiry theory (Garrison & Akyol, 2013; Garrison et al., 2001), is

the process that a learner engages for in-depth inquiry or learning. It consists of a triggering event (engagement), exploration (exploring the content), integration (constructing new knowledge), and resolution (applying this knowledge to a situated experience), as seen in Figure 6.

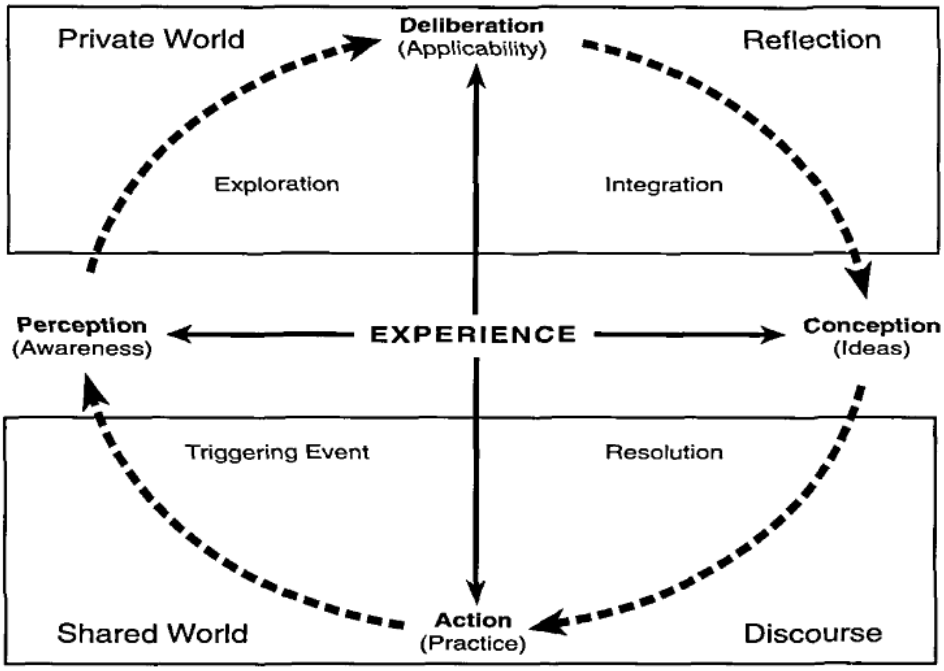

Figure 6. Practical Inquiry Model (Garrison, et al., 2001)

All categories of cognitive presence were evident in all of the modules reviewed with an exception of the resolution described below, in Table 14.

Table 14. CoI Rubric Findings: Cognitive Presence

Course and Module	C1M2	C2M4	C3M2	C4M1	C5M2	C6M3	C7M7	C8M7
Number of Module Activities	15	17	12	10	15	10	13	8

Triggering Event	X	X	X	X	X	X	X	X
Exploration	X	X	X	X	X	X	X	X
Integration	X	X	X	X	X	X	X	X
Resolution		X	X	X	X	X	X	

An example of two courses (one without a resolution element and one with) exemplify the indicators of cognitive presence found in the modules and are described in more detail below, in Table 15.

Table 15. Examples of Cognitive Presence Findings

Element	C1M2: without Resolution	C2M4: with Resolution
Triggering Event	Select an article from several options	Review controversial case study
Exploration	Read article and complete template with prompts	Review content resources; identify case problem, stakeholder perspectives, challenges, opportunities
Integration	Integrate content by answering template prompts	Imagine outcomes, brainstorm immediate responses
Resolution	There were no prompts regarding how this assignment would directly impact their work	Instructions prompted students to brainstorm policy changes and action plans that could be implemented in a school setting

Each category of cognitive presence is reviewed below.

Triggering event. A triggering event is a prompt, an engaging directive that asks students to begin a thought process as a result of a problem posed to students (Garrison et al., 2000; Swan et al., 2008). All modules reflected triggering events to prompt student thinking. Some examples of triggering events asked students to

conduct an interview, create a plan, and apply a critique. The module objectives described these events by stating “In this module we will be exploring the development of, and debates around, the development of the [topic] and how they are impacting [stakeholder]...and even [stakeholders]...that have not adopted them.” The text describing these events provides the context to elicit student interest in the modules and activities.

Exploration. The exploration phase is when students are prompted to “search for, and share, relevant material and ideas” (Garrison, et al., 2000, p. 4). Again, all modules provided evidence of students having the opportunity to explore resources that the faculty member cultivated or that the students themselves found. For instance, in one assessment students were asked to identify a resource that discussed a timely topic related to the course and to make connections between the newly identified resource and model standards.

Integration. Integration indicates students have the opportunity to combine ideas and consider solutions to problems posed (Garrison, et al., 2000). All modules provided opportunities for students to integrate the content into their understanding with specific instructions that asked them to integrate, compare, and contrast the resources they reviewed to the assignment activity. Half of the modules reviewed provided detailed matrixes or templates that guided student thinking with questions or frameworks. One assessment matrix provided a table with the key models identified and asked the students to complete the matrix and to make note of outstanding characteristics of similarities and differences.

Resolution. Resolution, taking newly learned concepts and applying them to real-world situations, was noted in six of the eight modules. This is an important observation as most of the literature indicates that this phase of cognitive presence is one of the most difficult to achieve. Examples of resolution were indicated when faculty members asked students to do the following:

- "Brainstorm longer-term policy and practice adjustments. Craft a plan of action."
- "…how we might need to engage our students in order to meet these robust demands?"
- "In this discussion make sure to clearly identify the changes that you made or will have to make, why you made them (or have to make them), and whether or not you or your colleagues are having difficulties/discussions/arguments about these changes, and the nature of those discussions."
- "What do you need to learn to perform this job? What do you already know how to do?"

Exemplifying resolution, one faculty member stated, "The whole idea was to show them how this could be a [topic] idea in their school." This statement directly applies to the resolution phase of cognitive presence in that the concept is related to developing solutions that can be applied in practice (Arbaugh, et al 2008). Another faculty member described the importance of authentic assessments in this way:

> …it made it really realistic for them because on a weekly basis they had to complete a component and situate that plan in their own setting, gather information from their own context, from their colleagues, peers, administrators. And many of them identified needs at their school that they

> felt were important to address. I think that component where it was really situated in a fairly authentic context for them and for some I think it could be something that they could take back with them and implement at their school. I think that was successful. And I think that is something that we take seriously in the whole program. We try to incorporate assignments that are really taking advantage of the students' work place. I mean that is actually why we are requiring that students have access, that they have a job, where they can implement those assignments.

An example of a course module without a resolution element had the following two assessments. Other than these two assessments there were no other instructor prompts for students to actively complete a task that could be applied in the work place within this observed module.

- Assessment 1: prompted students to apply and identify a theoretical framework to an academic article. Although a support document, a template with leading questions, was provided to guide student responses, a direct application of this activity to students' work environments was not evident.
- Assessment 2: prompted students to complete a reflection about their weekly experiences in the course.

All of the other categories of cognitive presence: engaging triggering events, opportunities to explore the content, opportunities to integrate the content, and opportunities to apply their knowledge were clearly evident.

Teaching Presence. Teaching presence, which supports the design and facilitation of student learning, activities, and engagement, was evident in 100% of the course modules for all three teaching presence categories: design and organization, direct instruction, and facilitation, as seen in Table 16. Teaching

presence is what underpins social and cognitive presences based on the instructor's actions to promote learning. In other words, teaching presence is indicated as a core component to the development of social and cognitive presences (Garrison, Cleveland-Innes, & Fung, 2010).

Table 16. CoI Rubric Findings: Teaching Presence

Course and Module	C1M2	C2M4	C3M2	C4M1	C5M2	C6M3	C7M7	C8M7
Number of Module Activities	15	17	12	10	15	10	13	8
Design and Organization	X	X	X	X	X	X	X	X
Direct Instruction	X	X	X	X	X	X	X	X
Facilitation	X	X	X	X	X	X	X	X

Design and Organization and Direct Instruction. Design and organization is the category of teaching presence that consists of the structure of the course, the planning of course activities, descriptive instructions, and the use of the LMS. Direct instruction is identified as the instructor providing opportunities for students to learn the content or "productive and valid knowledge acquisition" (Garrison, et al., 2000, p. 101). Design and organization and direct instruction are combined for these categories of teaching presence due to the nature of this project. I was not looking at student data to confirm either of these categories, rather I only looked at the opportunity for them to be actualized; I combined them because they are so closely related to student acquisition and understanding of content.

Design and organization were identified in all of the modules as this is the most fundamental element of teaching online. Instructors demonstrate this element of teaching presence when they communicate course topics, instructions, and due dates clearly to students and intentionally provide opportunities for students to ask questions. Instructors achieved this using the discussion and syllabus tools. For instance, in most modules a "questions/comments" discussion board was available for students. This provision relates back to supporting affective and open communication categories of social presence. In seven of the eight courses the syllabus tool was used to convey course information (course description and objectives, institutional policies, grading scales, office hours, instructor introductions, course materials) and activity timelines.

There were instances when the participants responded that they needed to clarify or revise their assignment instructions to help students understand the assessments, further promoting ways to improve their teaching presence. In addition to instructions, some faculty reported they needed to review the content resources and their organization to better support student learning. For instance, one faculty member said, "…and then they are going to start looking at the things they need to be able to do. I don't think the alignment is good here. And this is one of the things that could definitely be different."

Facilitation. And finally, facilitation, when instructors actively engage students to draw them into the content, discussions, and assessments, was evident in the use of discussion boards. The use of discussion boards provided the ability for faculty to provide feedback regarding discussions and direct student understanding.

Facilitation and feedback were mentioned a few times by faculty members who emphasized this aspect of teaching presence. In fact, in one course there is an assessment that occurs on a weekly basis that culminates in a final assessment. The students submit one part of this assessment every week and every week the faculty member provides feedback to the student.

> We did provide detailed feedback on all the steps along the way. And so the expectation was that before they hand in their final product they would actually incorporate some of that feedback into their paper, final paper, presentation...

However, with this assessment the faculty member raised two issues with providing feedback. One concern was that students did not incorporate the instructor's feedback into the final assessment. The second concern was that it would be difficult, nearly impossible, to check and confirm how and if students actually did incorporate feedback from previous assignments with 50 or more students to review.

> We just didn't see them taking the feedback and making those revisions…I can't say for sure but I think the vast majority of them did not incorporate the feedback, did not go back and take the feedback we provided and incorporate it. And to be honest with 60 students it was also hard to push further…

Another faculty member, who promotes mastery of content, stated that he/she provided students with opportunities to resubmit work and incorporate the assessment feedback, but to his/her recollection students did not take advantage of making revisions.

Overall, the modules that I reviewed strongly reflected the CoI. Through the instructors' online teaching strategies, they created opportunities for students to engage in the social, teaching, and cognitive presences.

Question 2: How Do The Activities And Assignments Embedded In The Selected M.Ed. In TL Modules Leverage The Technological Tools And Affordances Available In The Canvas LMS?

Technological affordances are the ways that tools are used to obtain objectives (Beach, Anson, Breuch, & Reynolds, 2014). I found the three technological affordances reviewed here, multimodality, collaboration, and interactivity, in the course modules with multimodality and interactivity being the most strongly represented (Garrison, Cleveland-Innes, Fung, 2010).

Multimodality

I observed multimodality, combining modes to create meaning (Jewitt, 2013), in the way that it supported two objectives within the modules: content and assessments. Faculty used the multimodality of the Canvas pages to deliver the course content. Some modules used more video, more hyperlinks, or more text than others. Faculty used multimodality to achieve the conveyance of content by the creation of faculty videos or links to external articles or websites, as presented in Figure 7.

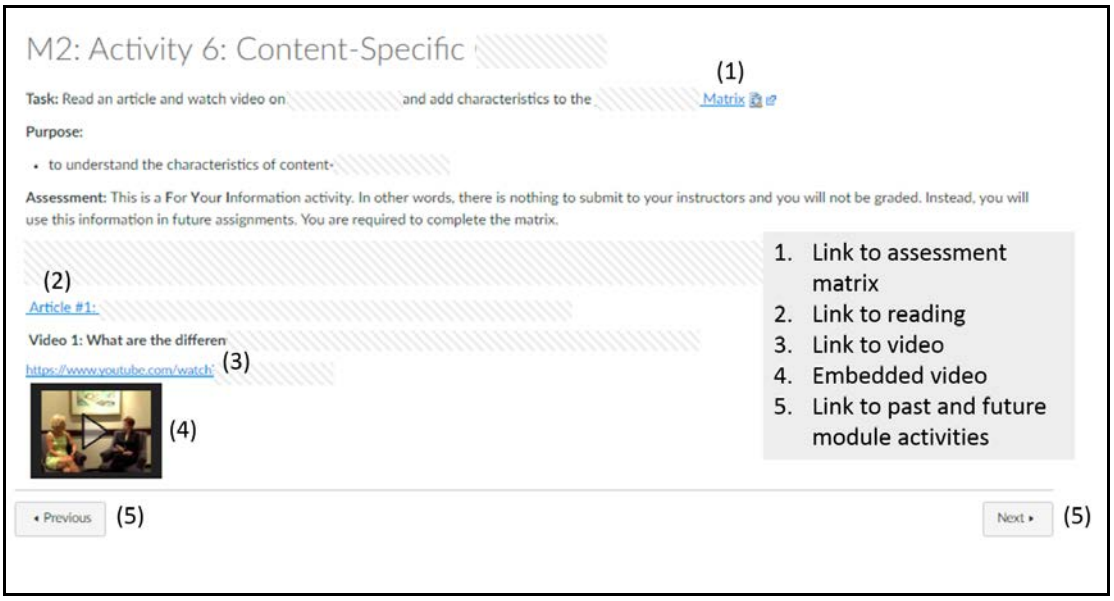

Figure 7. Modality Sample

The assignments leveraged multimodality as a way to convey content related to the assignment. Faculty typically provided links to templates, assessment notes, and additional resources. The students, however, were not prompted to use multimodality other than text. The assignments reviewed for this project did not require students to submit work in a multimodal format, although it appears that students could voluntarily take advantage of multimodality when posting to discussions.

Most faculty members did not identify or report modality as an issue. However, one instructor noted that it was a concern and one thought additional modes could provide a possible solution. The faculty member viewing modality as a concern stated that, “I still have to say that grading the audio or video responses was a little challenging because I think it’s harder for the students to make the connections to the readings, they tend to be more informal…” The faculty member reported grading student submissions that used an audio/video format as a new experience, which may have impacted his/her comfort level with this format. The faculty member

commented on this activity during the interview, but this assessment was not one included in the module that I reviewed.

The faculty member who reported that increased modalities might provide for a richer student experience when assigning group work, also identified the use of synchronous web conferencing tools as a possible solution. This faculty member wanted to provide students with a rich group experience in order to fully explore the assignment prompts of identifying issues, imagining solutions, brainstorming responses, and crafting an action. He/she proposed that the use of a synchronous conferencing tool might provide an additional level of modality, specifically audio and video, to improve the group experience.

Interactivity

Interactivity, the opportunity for students to connect with each other and with the faculty member, was evident with the use of discussion boards, group tools, collaboration tools, and in one instance the use of external social media such as Twitter. All of the modules reviewed leveraged interactivity by using the tools in these ways: (1) links to the discussion or group tools to submit the assignment; (2) links to support the understanding of the content and assessments as in discussion boards entitled “ask the instructors”; and/or (3) directing students to interact via instructions/rubrics. The opportunity for peers to interact with each other, with the content, and with the faculty member was evident in all of the modules.

The use of discussion boards, group tools, and collaboration tools to submit assignments provided students with the opportunity to interact with each other peer-to-peer, which also supported opportunities to build social presence. When these tools

are used by students to submit assignments it allows them to see examples of other students' work and comment on it if they voluntarily choose to do so extending interactivity to peer-to-content. The use of group tools and collaborations allows for similar interactive experiences, but provides it within designated groups as opposed to having the interaction open to the entire class.

Five courses provided student-faculty and student-student interaction opportunities by using the discussion tools to prompt students to ask questions about assignments and course content. Discussion boards, when used as question and answer spaces, provide several opportunities for the faculty member to provide direction and feedback (teaching presence) increasing the interactivity of the faculty member. These discussion boards were primarily added as links on content pages and in assignment instructions. The rubric for this is shown in Figure 8.

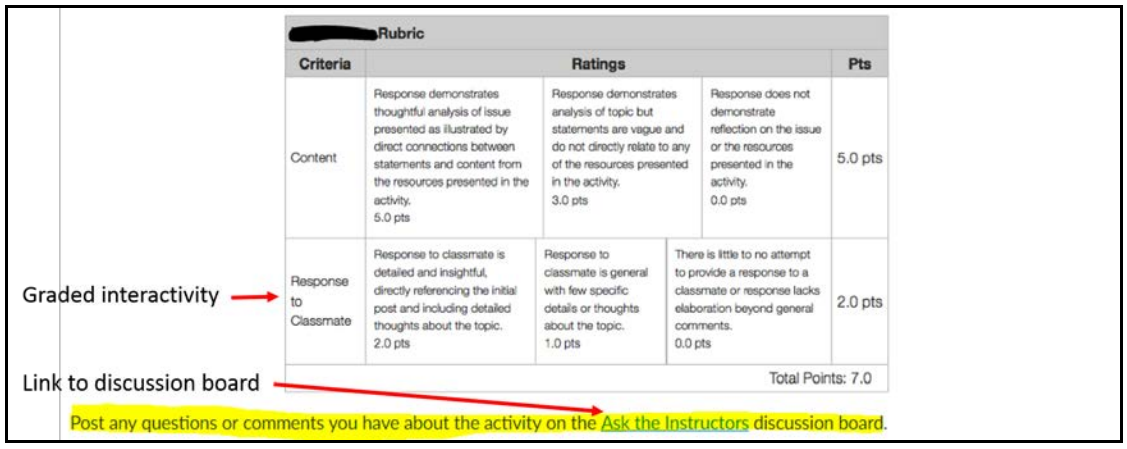

Figure 8. Interactivity: Link to Discussion Board and Graded Interactivity

Eleven of the twenty-four graded assessments provided instructions or rubrics that promoted interactivity between students. For example, instructions for one group discussion stated, "Please post your [topic] composition from the previous assignment to this discussion page. Then read and comment on TWO of your peers'

compositions." This directive supported student interaction, but it was not clear what specifically the instructor wanted to achieve. Other instructors provided similar prompts, but with more direction such as respond to your group with "words of encouragement, questions, or constructive feedback." See the Figure 8, above, for an example of a rubric that added interactivity to its grading scheme.

These examples prompted students to provide peer to peer feedback with the rubric providing the students with more direction.

Collaboration

Collaboration, when a group shares and constructs meaning in response to a situation posed by an instructor or an employer (Stahl, Koschmann, & Suthers, 2006; Bransford et al., 2000), occurred in two ways in the modules: planned and unplanned.

Planned collaboration occurred as an intentional graded activity as directed by a faculty member. For this project I only identified collaborative activities when prompts from the instructor were explicit for students to create a shared response, as seen in Table 17. I reviewed 24 assessments in the eight modules, of which one of them demonstrated planned opportunities for student collaboration using the definition that emphasizes a group constructed shared meaning. It is important to note that there were ample opportunities in several of the modules for students to interact, respond to one another, and to critique each other's work; however, in terms of constructing meaning within a group setting in which students were directed to collaborate, I identified one module assignment as a case study.

Table 17. Technological Affordances Analysis: Collaboration

Course and Module								
Canvas Tools Applied in Module	C1M2	C2M4	C3M2	C4M1	C5M2	C6M3	C7M7	C8M7
Collaborations		X						
Group Tools		X	X				X	X
Google Hangouts		X						
All courses used the following tools: Content pages, assignments, discussions								

The one assessment that promoted collaboration also exemplified the one instance of group cohesion. This activity prompted students to work as a group to identify and brainstorm responses to a case study. The collaborative effort was to create a plan of action based on their group work, their group thinking. The instructions stated, "As you discuss the case, you will have to build consensus about the 'ideal' response that represents the group's thinking…" This example provided evidence of an instructor explicitly promoting student collaboration in a group assessment. There was little evidence to suggest that this directed group work occurred in the other seven modules I reviewed. One instructor reported that collaboration was "…an opportunity for improvement. I don't know exactly what that would look like, but I'm not opposed to that kind of change."

The potential for unplanned collaboration was evident in all modules when the instructor provided an opportunity for students to use the discussion board. Instructors used discussion boards in all of the courses either as a way to submit an assignment or

for questions and answers. Because I did not evaluate student data, it is unclear if unplanned collaborations materialized, but the opportunity was readily available.

Planned collaboration may have been intentionally not implemented due to similar reasons that group cohesion was limited: high enrollments. For instance, in most modules there was an average of three assessments in one week. With 69 students, that equals 207 assessments to read, grade, and provide feedback for at the graduate level in a period of five days. Assignments are due in all courses on Thursdays and Sundays and instructors must grade them in a short period of time to prepare for the start of the next module. For the faculty member who promotes teaching to mastery where feedback is a critical component, his/ her remark was: "…there is a lot of back and forth between advisor and advisees. And so now I'm going to have 60 something students that I am going to have to help [develop assessment topic]. And it's a seven week semester. And that's only in week two or three. I just don't know how I'm going to do it…" Although the research varies with regard to how many students are optimal in an online course, the instructional design strategies are also a part of this variance (Taft, Perkowski & Martin, 2011). Class sizes are recommended to be 30 students or less for instructional design that encompasses a high degree of interaction and feedback. More than 30 students indicated a negative association with student learning (Arbaugh & Benbunan-Fich, 2005). As administrators make enrollment decisions based on financial needs, a legitimate concern, it is critical to analyze the impact of teaching more than 50 graduate level students in a highly interactive online environment and what compromises instructors might make to sustain this level of student enrollment.

Limitations

There are five fundamental limitations to this EPP. The first concerns the scope of the project in that it was limited to the review of only one module. Limiting the investigation to one module within a course did not permit the complete investigation of the faculty member's instructional design strategies. I reviewed the modules as independent components of the courses. I did not analyze the modules that preceded or followed which might have provided a more thorough review. However, a complete course examination was beyond the scope of this project. Instructors design courses as complete entities with a beginning and end. The modules that I reviewed only looked at a small piece of an entire string of resources, activities, and events, which made it impossible to fully grasp an instructor's intentions for the course.

Second, this one module perspective also posed difficulties for the participants. In at least three instances during the interviews I needed to repeatedly ask the faculty to refine their focus on at least one module that most closely connected to a concern they wanted to identify. This redirection was difficult as it does not support best practices for instructional design. Although one module was ultimately agreed upon and analyzed, the solutions derived seemed somewhat superficial knowing the nuances of what the faculty member posed as concerns. Therefore the CoI process in the context of this research may not have completely addressed their needs. Furthermore, the issues they presented related more to the overall design of the course, its content resources, and the assessment instructions and organization. For an overall instructional design analysis this would not be out of

order; however, because my analysis was limited to one module I found that it was difficult to provide the level of qualitative feedback that the faculty members might need. I also accessed only one version of the course: the version that that instructors most recently taught. For this project the observed course module may not have reflected improvements the instructor applied to an updated version of the course that they had yet to teach to students. A few faculty members expressed concern that I was only reviewing the last taught version of their course and not the one they were in the process of redesigning. Again, reviewing multiple versions of a course and module were beyond the scope of this project, and may not have reflected improvements that a faculty member addressed.

Third, my analysis was limited to four sets of data. I did not interview students or review student submissions, discussion content, grades, student course evaluations, or the faculty assessment feedback students received. I did not access, solicit, or review student feedback in any way. This is an important limitation as I reviewed the modules on their *potential* to achieve CoI and affordances. It is possible that the instructional design of a module can encompass all levels of CoI, but not achieve several elements when taught.

Another limitation is that instructors did not design the courses using the CoI framework and the faculty were not made aware of this instructional design strategy prior to the module analysis. It is imperative to note that the instructors did not use the CoI framework to design their courses nor were they provided information about this theory prior to this project. Furthermore, this project did not plan to solicit faculty feedback regarding the perceived usefulness of the recommendations I identified.

The final limitation is that I did not compare this case study to other programs within or outside of one institution. The analysis was limited to one program in one department. It is possible that because I reviewed modules designed by experts in the field of education, the modules naturally map to CoI and leverage existing affordances. Perhaps courses designed by faculty members teaching in different disciplines with different levels of online teaching experience would yield different results and be more or less informative.

Chapter 4

USING THE COI FRAMEWORK FOR INSTRUCTIONAL DESIGN

The third guiding question for this project asks in what ways the instructors could revise the activities and assignments embedded in the modules to reflect CoI and leverage Canvas tools and affordances more effectively. I present the responses to this question within the recommendations below for online learning stakeholders such as the M.Ed. in TL instructors, instructional designers, and other faculty moving forward with the development of online programs.

Recommendations

There are five recommendations as a result of this work. Each is detailed in the text that follows.

Recommendation #1: Provide explicit instruction of CoI framework

Although the majority of the module activities and assessments examined for this project reflected the CoI, I recommend that the MEd in TL faculty receive explicit instruction in the framework to determine if and how they can apply it to further strengthen those modules or others within the existing courses. Because faculty members were not aware of the CoI and its benefits of teaching in an online environment, helping them explore the CoI may support their overall understanding of teaching online, its contexts, and potential (Kumar, et al., 2011; Meyer et al., 2009).

For example, to better reflect CoI in a group activity, they could revise the group activity using the CoI framework as a guide. One faculty member in this project identified three key issues with a particular group activity: (1) students reported confusion when organizing their groups; (2) instructor was not convinced students were developing a collaborative and cohesive group in order to demonstrate their learning; and (3) instructor wanted each group to publish their work to share with the entire class. After closely examining the activities and the instructor's concerns, I identified three ways of improving the module.

First, to alleviate the confusion surrounding group formation, I suggest the instructor leverage the collaborative affordance of Canvas groups to automatically assign and direct the students to their group space. This group space provides collaborative communication tools for the students, such as web conferencing, wiki pages, discussion boards, and group messaging. The strategic use of Canvas groups promotes social presence by providing students with private spaces to work together.

Second, to scaffold students' collaboration, instructors could design a rubric to evaluate collaborative group work. This rubric would help students understand how to engage in critical discourse and identify the types of behaviors the faculty member wants to foster through the activity, such as group etiquette and how individual group members can collaboratively work together. Canvas provides a rubric development tool within all discussion boards and assignments making it relatively easy for instructors to integrate one into their assignments or activities. Furthermore, through facilitation, the instructor could model desired behaviors by posting strategic replies or posts to promote examples of what critical dialogue looks like in an online

environment. The instructor can demonstrate these behaviors in course communications by posting comments in the private group spaces or in the full course discussion boards.

Third, the faculty member voiced interest in group sharing, which would increase social presence by promoting open communication and leveraging the affordance of interactivity by providing opportunities for students to comment on and learn from their colleagues' work. Designing a full class discussion board where a group leader posts their group's final project would provide an appropriate avenue for this objective. The instructor could also enable the Canvas discussion board feature that permits students to "like" posts by clicking a thumbs up or a thumbs down.

Ideally, the institution would provide explicit instruction of CoI to faculty and designers of new programs and courses before development begins. For instance, the College of Education at the University of Florida used the CoI as they designed their Ed.D. program, ensuring faculty reflected social, cognitive, and teaching presences (Kumar et al., 2011) within the coursework. The institution could use in-person faculty workshops or asynchronous online modules to facilitate these important discussions followed by opportunities to design and share activities with others. Ultimately, explicit instruction in the CoI framework would provide instructors and course designers with specific guidance on how to develop courses that reflect a higher degree of satisfaction, improve retention, and attain a higher degree of self-reported learning (Akyol & Garrison, 2008; Kumar, et al., 2011; Meyer, et al., 2009).

The following resources can provide further guidance to stakeholders:

1. CoI alignment rubric: Tables 7 and 8.
2. CoI concept map: http://cde.athabascau.ca/coi_site/documents/concept-map.pdf
3. CoI website: https://coi.athabascau.ca/
4. Canvas guides: https://community.canvaslms.com/community/answers/guides
5. Research article: Kumar, S., Dawson, K., Black, E. W., Cavanaugh, C., & Sessums, C. D. (2011). Applying the community of inquiry framework to an online professional practice doctoral program. *The International Review of Research in Open and Distributed Learning, 12*(6), 126-142.

This is a sample of introductory resources that would support faculty members as they begin to explore CoI and leverage the affordances of the Canvas tools. However, the institution should tailor the resources to the instructor's discipline and technological support needs.

Recommendation #2: Leverage LMS affordances to strengthen social presence

Findings indicated that only one out of eight modules examined in this project reflected planned group cohesion; e.g. when the instructions of an activity explicitly directed students to work collaboratively to create a group outcome. In addition to not being aware of CoI and social presence, the low number of activities that reflected group cohesion could be due to the fact that the M.Ed. in TL courses enrolled between 30 and 69 students with numbers expected to continue to increase. All

instructors reported difficulty in grading a number of written assignments with such a large class size. As one faculty member stated, “But honestly with 50-60 students, I mean I don’t know what I’m going to do.” Thus, the idea of adding graded activities to promote group cohesion is not advisable with faculty already expressing concerns about class size and grading.

For this particular circumstance, I recommend the M.Ed. in TL instructors require students to create ungraded collaborative projects using Canvas tools such as the group wikis. For example, small student groups could use the group wiki to create a collaborative poster introducing themselves, highlighting their personal goals for the course and sharing advice to incoming students. The instructor could also add engaging questions like asking students how the course topic might improve their ability to be a teacher leader. This collaborative product is not related to a cognitive understanding of the content; therefore, the instructor would not need to grade or guide the development of the posters. The goal would be for students to learn more about each other and share valuable insights. Instructors could also encourage students to experiment with multiple modes of delivery, such as audio, video, images, and fonts. See Figure 9 below. The addition of these affordances is important as it expands the ways that students can interact, which increases engagement (Ching & Hsu, 2013). The highlighted editing tool bar shows how students and faculty can apply these various modes.

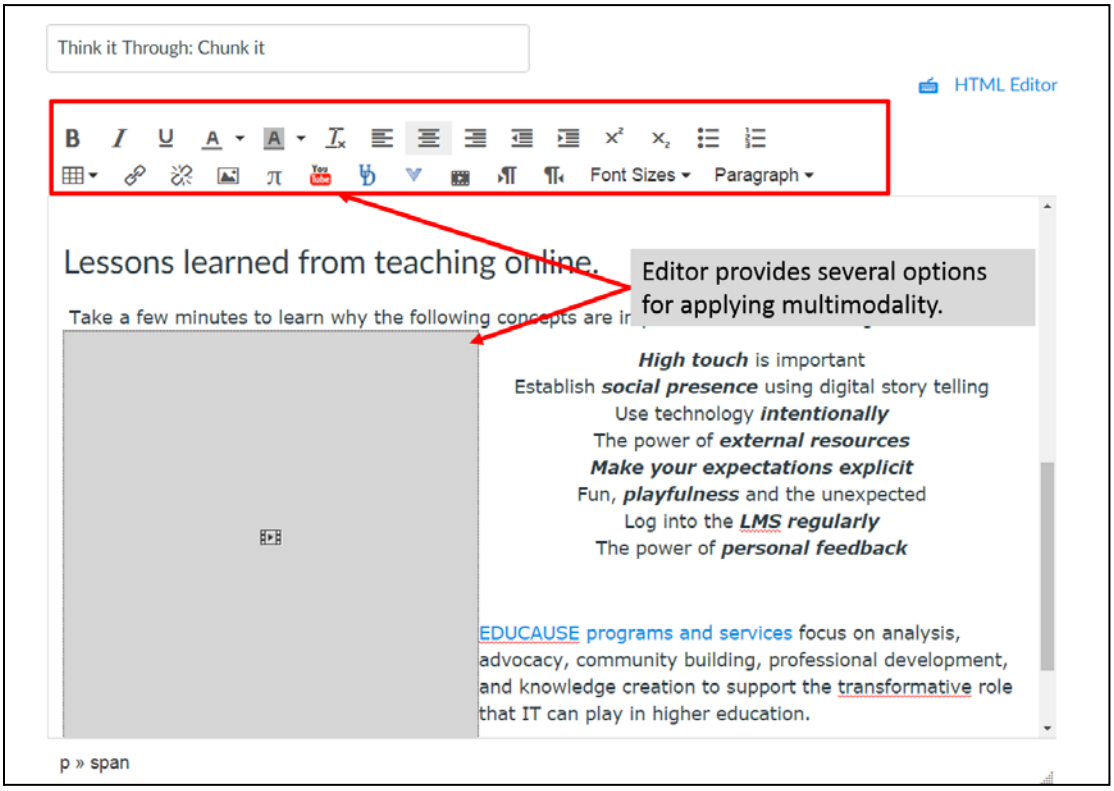

Figure 9. Canvas pages (wiki) editor

In other online programs with lower student enrollments (e.g., 20-25), instructors can leverage LMS affordances differently to support group cohesion. For example, they could use the two Canvas peer review tools in conjunction with graded projects to guide students to work collaboratively.

First, Canvas assignments have the ability to assign peer reviews for individual assignments. By clicking on the “Require Peer Reviews” option when editing an assignment, the instructor can choose to assign peer reviews or have Canvas automatically assign them. The instructor can adjust the number of reviews per user and opt to use intra-group reviews. These reviews also have the capability of remaining anonymous as seen in Figure 10 below.

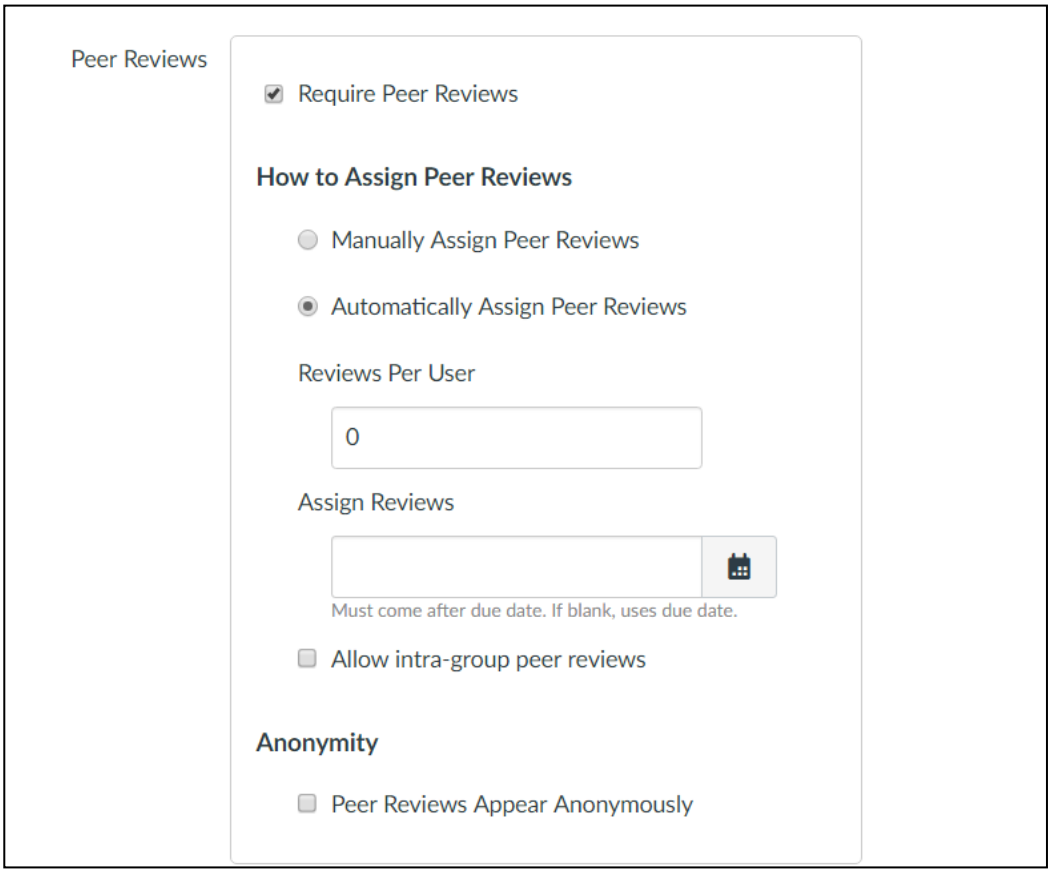

Figure 10. Canvas Peer Review

Canvas also has the capability to assign peer reviews to discussion board topics. It uses a similar structure as the assignment peer review shown in Figure 11 below. Canvas notifies students that they need to complete a review and provides their peer's discussion post with a comment box that only the peer can see. Instructors can apply rubrics and Canvas requires the student reviewer to add comments and complete the rubric, if one is applied. The instructor, the student reviewer, and the student submitting the work can all see the peer reviewer comments.

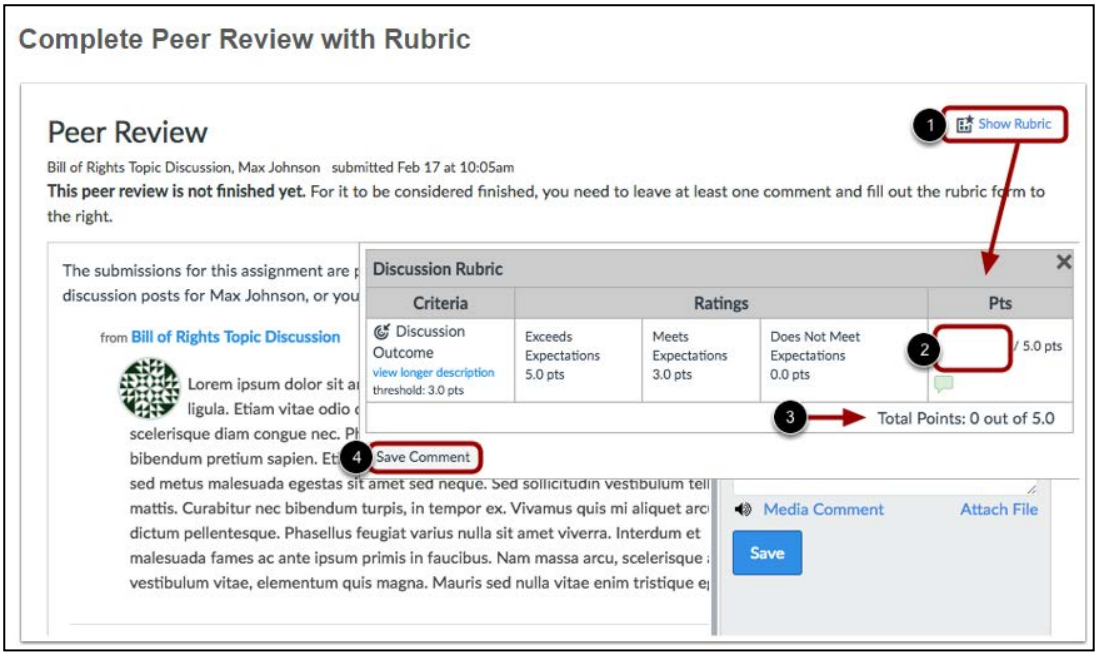

Figure 11. Canvas Peer Discussion

Lastly, instructors who want students to intentionally use a specific tool will need to be explicit in their activity instructions. Group rubrics and detailed instructions can help guide students who may have had little exposure to these types of tools.

Supporting resources

1. Canvas peer review assignment:

   https://community.canvaslms.com/docs/DOC-2663

2. Canvas peer review discussion:

   https://community.canvaslms.com/docs/DOC-1944

3. Canvas page edit: https://community.canvaslms.com/docs/DOC-1987

4. Facilitating Collaborative Learning: 20 Things You Need to Know From the Pros: http://www.opencolleges.edu.au/informed/features/facilitating-collaborative-learning-20-things-you-need-to-know-from-the-pros/
5. AACU Teamwork rubric: https://www.aacu.org/value/rubrics/teamwork

Recommendation #3: Leverage LMS affordances to strengthen cognitive presence

Findings indicated that the individual modules I reviewed reflected almost all of the categories of cognitive presence (triggering event, exploration, integration, and resolution). Cognitive presence is important to strengthen as it helps students think critically about the topics and assessments (Garrison & Arbaugh, 2007; Garrison et al., 2001). Although the eight modules I reviewed reflected all categories, this EPP's scope was limited to a single module and I recommend that instructors in this program and others explore means of building cognitive presence in their courses in two ways.

First, instructors could use the CoI student survey (Arbaught et al., 2008; Swan et al., 2008) to determine how students perceive cognitive presence in the courses (CoI website, n.d.). For instance, using a Likert-type scale, students would respond to statements such as:

- I felt motivated to explore content related questions.
- Brainstorming and finding relevant information helped me resolve content related questions.
- Learning activities helped me construct explanations/solutions.
- I have developed solutions to course problems that can be applied in practice.

These statements are four of twelve that measure cognitive presence with each mapping to the cognitive presence categories of triggering event, exploration, integration, and resolution. The results of this survey would provide direction to further support this element of CoI.

One suggested method to improve cognitive presence is to use this lens to design course assessments. Using this development approach may positively influence cognitive presence (Sadaf & Olesova, 2017). For example, when an instructor is creating an assessment for a course, he or she should ensure that the assignment reflects each category of cognitive presence. Thus, the assignment would have a triggering event, provide opportunities for students to explore the content, provide prompts for students to integrate the content, and to demonstrate how the product of this assessment can relate to the students' profession.

Second, instructors should examine the use of multimodality to identify interactive ways to engage students in exploration of content. Taddei and Budhai (2016) found a high degree of cognitive presence when using voice-recorded reflections. They also suggested that "…faculty members teaching using online modalities have the challenge of developing and maintaining high levels of cognitive discourse relative to course content" (p. 39). The assignment they designed was structured so that students listened to a series of pre-recorded audio questions from the instructor. The students then responded to these prompts via audio or video (Taddei & Budhai, 2016). This example utilizes how multimodality can be incorporated effectively to support cognitive presence.

Supporting resources

1. Cognitive presence papers: https://coi.athabascau.ca/publications/cognitive-presence/
2. Research article: Sadaf, A. & Olesova, L. (2017). Enhancing cognitive presence in online case discussions with questions based on the practical inquiry model. American Journal of Distance Education, p.1-12.

Recommendation #4: Leverage LMS affordances to strengthen teaching presence

Findings indicate that the modules reflected all categories of teaching presence (design and organization, direct instruction, and facilitation). However, because this EPP's scope was limited to a single module, I recommend that instructors in this program continue to explore ways of building teaching presence in their courses. This is important to highlight because teaching presence is the foundation to achieve the other presences (Garrison & Arbaugh, 2007; Garrison et al., 2001).

For instance, instructors indicated interest in clarifying assignment directions. This focus on improved instructions supports the design and organization category of teaching presence. One approach to extend this would be to leverage multimodality and create short video tutorials guiding students through challenging assignments. Using video to supplement assignment instructions can provide students with the instructor's perspective on the assignment, nuances about the process, and the opportunity to clarify misconceptions. The instructor could also use video instructions as an opportunity to elaborate on the criteria that distinguishes poor to above average

student work. The instructor can record videos locally on their own computer and upload them or use the embedded video/audio editor within the Canvas text editor. See figure 9.

Canvas Announcements is another tool that instructors can use to support teaching presence. This tool can enable the faculty member to stay in contact with a large number of students and has the capacity to record instructor videos. The faculty member can craft announcements to provide students with an overview of how they did the week before and what they should plan for in the upcoming week. Instructors can also use announcements to disseminate immediate feedback to the class when they need to provide guidance and direction.

Those who are developing new programs should consider one key strategy to promote teaching presence, the use of the discussion boards to support facilitation. The following three examples demonstrate discussion board possibilities. First, use the discussion boards as question and answer communication spaces for course content questions and assignment questions. Instructors can add links to the discussion board from content pages and assignments. The presence of these links informs the student they can freely ask questions about the course activities at any time.

Second, instructors can use discussion boards to provide opportunities for students to get to know each other. This can be in the form of an introductory discussion board, similar to an online icebreaker. Instructors can ask students interesting questions to prompt their sharing of information and build community. They can relate prompts to the profession or create completely random prompts to

generate a congenial atmosphere. The instructors should participate in these icebreakers to let students get to know them as well.

Finally, the instructor should demonstrate facilitation by actively contributing to discussion boards. Teaching presence implies that the instructor will be present to guide students' understanding and keep students on track and engaged in the learning process (Garrison et al., 2000).

Programs beginning the development process will want to consider the importance of teaching presence as this element of the COI supports social and cognitive presences (Garrison & Arbaugh, 2007; Garrison et al., 2001). New instructors should review how they will achieve the three categories of teaching presence (design and organization, direct instruction, and facilitation) in their online courses by carefully considering how to meet their objectives through the thoughtful implementation of the LMS. Design and organization refer to the planning, timelines, and design of the online course. Direct instruction considers the selection of course content, the structure of the activities, and connects students to the discipline. Facilitation "…is critical to maintaining interest, motivation and engagement of students in active learning" (Anderson, et al., 2001, p. 7). The three categories of teaching presence are critical to the effective implementation and development of an online Community of Inquiry (Anderson, et al., 2001). I recommend that new program leaders reach out to others in the community to investigate online teaching presence strategies.

Supporting resources

1. Teaching presence papers:

https://coi.athabascau.ca/publications/teaching-presence-papers/

2. Using video announcements, instructional videos, and video feedback to improve social presence, student engagement, and a growing relationship to one's university: http://olc.onlinelearningconsortium.org/effective_practices/using-video-announcements-instructional-videos-and-video-feedback-improve-social

Recommendation #5: Conduct systematic reviews of online program

The process of reviewing courses in the M.Ed. in TL program proved insightful. However, the scope of this EPP was limited to a single module. Therefore, moving forward I recommend that the M.Ed. in TL faculty review the entirety of their courses within the online program every two years as the course sequence repeats. Such a review would provide opportunities to identify strengths and weaknesses and reassess the program's goals and objectives in light of the CoI framework.

Newly developed online programs should also establish a systematic review process of online courses and programs (Middle States Commission on Higher Education, 2011). Using the CoI as a lens for evaluation, I recommend the following two review strategies. First, instructors can administer the CoI student survey to provide feedback regarding how the course reflects CoI. This survey has been used as a tool to measure the CoI presences and has proven to be valid and reliable (Arbaugh et al., 2008; Garrison, et al., 2004; Swan et al., 2008). The 34-item student survey (Appendix E) can provide valuable feedback to instructors and administrators to determine how students perceive their course activities and experiences in light of

CoI. For instance, using a Likert-type scale, students respond to statements such as, "The instructors helped to keep course participants engaged and participating in productive dialogue" (CoI website, n.d.). This statement is one of thirteen that measure teaching presence. When faculty members calculate the results they can review their courses and teaching strategies to determine what needs to be addressed. The faculty member may also want to seek out an instructional designer to provide additional guidance and determine methods to better leverage the LMS affordances.

A second approach to systematic review is to analyze the courses using the CoI rubric (Tables 7 and 8). I recommend that this analysis be conducted with an instructional designer who can serve as a course reviewer for four stages of review. The instructional designer and faculty member would first use the CoI rubric to evaluate the course activities to create a detailed analysis of the course. The faculty member and the instructional designer would then discuss the findings based on the instructor's experiences in teaching the course. Third, they would prepare CoI recommendations in light of the course and program objectives. Finally, it would be important for the faculty member to make note of how these new recommendations impacted performance when they taught the course again. "We recommend that educators taking on the important task of CoI-guided course improvement recognize that the adjustments to their course designs and the analysis of student achievement must be ongoing and collaborative" (Swan, Day, Bogle, & Matthews, 2014, p. 79).

Supporting resources for systematic review.

1. Research article: Swan, K., Day, S., Bogle, L., & Matthews, D. (2014). A collaborative, design-based approach to improving an online

program. The Internet and Higher Education, 21(4), 74-81.

2. Additional resources are located in the resources section for Recommendation #1: Provide explicit instruction of CoI framework.

These recommendations are illustrations of how the CoI can influence course design. With further exploration and experimentation, it is possible to identify its limitations and ways that it might expand. However, it is important for faculty to take class sizes, programmatic objectives, and course subject matter into consideration when evaluating the usefulness of the preceding recommendations.

Conclusion

Numerous professional organizations provide direction for online programs, yet very few identify in-depth pedagogical strategies. The Community of Inquiry, a recognized model for the development and evaluation of online education, does afford such a comprehensive model. This model suggests that by creating an intentional "Community of Inquiry," problem-solving dialogue and idea expression exist between students and instructors. This occurs when instructors support the three identified presences: social, cognitive, and teaching that allows them to review and develop critical online education. An instructor may foster student satisfaction, retention, and self-reported learning in his or her course by applying these key concepts (Akyol & Garrison, 2008; Kumar, et al., 2011; Meyer et al., 2009).

This project suggests that the course modules in the M.Ed. in TL program strongly reflect the CoI. I made this determination by analyzing the following data sources: the teaching artifacts, LMS affordances, the faculty reflections, and interviews. From the data I was able to gain insight to the instructors' actual

experiences and how they taught the modules. Faculty input through the reflections and interviews was critical to the review of the modules as it provided insight from their experiences and observations of students interacting with the content and their peers.

Although the M.Ed. in TL faculty unknowingly designed courses that supported the CoI, it is unlikely that all online programs at the institution would naturally demonstrate such a high degree of CoI. I speculate that their ability to unknowingly create an environment that is rich in CoI has to do with their professional expertise and knowledge of pedagogy. Therefore, I suggest the recommendations presented in this paper to strengthen learning experiences for all online programs. These expanded learning experiences would reflect the CoI framework and I anticipate they will be of value to not only the M.Ed. faculty, but also to other stakeholders who are in the process of designing online courses and programs.

It is my hope the incorporation of these recommendations would provide useful guidance to address online instructor design concerns and inform the overall instructional design process. These recommendations warrant further investigation to determine how useful faculty would find them. I would also caution that I did not fully explore the research supporting the breadth of disciplines using CoI in this project and all aspects of the CoI may not be conducive to all courses and programs.

The outcomes for this project consist of a detailed course summary for each of the four faculty members who participated in the project and a presentation to stakeholders. The faculty members will receive a course summary that includes an

evaluation of the identified course module and how it maps to the CoI model. See Appendix G for a sample course summary.

The second outcome, a presentation, will be made to the M.Ed. in TL faculty, identified stakeholders, and other interested individuals in the University community. This presentation will provide an overview of the findings in an anonymous aggregated format that highlights the noteworthy findings from the data sources and whether they expressed the CoI framework. I will aggregate the recommendations provided to the faculty members in the presentation to demonstrate how the CoI may inform and improve the instructional design strategies. In all cases I will retain anonymity and present aggregated summaries. Ultimately, these outcomes may provide an opportunity for the University community to reflect on the CoI research-based pedagogical framework that could impact the development and teaching of online courses.

The goal of this project was to determine if the CoI was reflected in the modules and how the CoI framework and technological affordances might inform faculty members' instructional design efforts. This project does suggest that the CoI framework can inform the instructional design of online courses. Through my inquiry I was able to identify that the CoI was evident in courses even though the faculty members did not use CoI as an intentional design method. From this module analysis and the faculty data sources, I was also able to suggest ways that the technological affordances and the CoI might be extended to address faculty concerns. Ultimately, this project indicates that with further investigation the applied use of the CoI framework to online courses could prove to be a constructive design aid.

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Appendices

Appendix A

IRB DOCUMENT

RESEARCH OFFICE

210 Hullihen Hall
University of Delaware
Newark, Delaware 19716-1551
Ph: 302/831-2136
Fax: 302/831-2828

DATE:	June 23, 2016
TO:	Jann Sutton, M.Ed.
FROM:	University of Delaware IRB
STUDY TITLE:	[922983-1] Can the Community of Inquiry Framework Inform the Instructional Design of an Online Master's Level Program?
SUBMISSION TYPE:	New Project
ACTION:	DETERMINATION OF EXEMPT STATUS
DECISION DATE:	June 23, 2016
REVIEW CATEGORY:	Exemption category # *(1,2)*

Thank you for your submission of New Project materials for this research study. The University of Delaware IRB has determined this project is EXEMPT FROM IRB REVIEW according to federal regulations.

We will put a copy of this correspondence on file in our office. Please remember to notify us if you make any substantial changes to the project.

If you have any questions, please contact Nicole Farnese-McFarlane at (302) 831-1119 or nicolefm@udel.edu. Please include your study title and reference number in all correspondence with this office.

Appendix B

INTERVIEW PROTOCOL

Interview Protocol for Online M.Ed. Faculty

Date of Interview:	Location:
ID#:	Consent form signed:
Start Time:	End Time:
Gender:	Length of Interview:

Instructions:

Introduction & Purpose

Good morning, my name is Jann Sutton. I am a doctoral candidate and my advisor is Dr. Rachel Karchmer-Klein. Thank you for coming, I appreciate your time today. You have been selected to participate in this interview because of your affiliation with the M.Ed. in Teacher Leadership program. The purpose of this interview is to explore the module you selected for review.

Confidentiality

Any information that can identify you will be removed. Nothing you say today will be associated with you personally.

Recording

I would like to record this interview using two devices, the Skype recording function and this audio recorder. I am using two devices for back-up purposes. The recordings will be destroyed as soon as the transcription is complete.

Executive Position Paper

I will use this information for the purposes of completing my executive position paper. Information gathered from my interviews will be written in a final report and a formal presentation.

Consent Form

Before we get started, I would like you to review this consent form and ask you to sign it if you feel comfortable. You are free to pass on any question I ask today if you do not wish to answer. Also, if at any time, you would like to stop the interview, please let me know and we will stop without any consequence to you. Do you have any questions for me before we get started? [Note that this consent form will be emailed to the instructor prior to the interview.]

Online Courses
Today we will be discussing the module you identified to review.

Agreement to Participate in Interview
Consent Form

Responsible Investigator: Jann M. Sutton
Title of Protocol: M.Ed. in Teacher Leadership Course Module Review

You have been asked to participate in a review to determine if a specific theoretical framework can improve online course work and better leverage instructional design strategies and Canvas affordances.

If you agree to participate, you will be asked a series of questions during a 20-30 minute, face-to-face, recorded interview. The investigator will provide all forms and materials needed for completion of this study.

You will not directly benefit from participating in this study.

The findings of this study will be published for my EPP. Any information that can identify you, your course, or your students will be removed.

There is no compensation for your participation in this study.

Questions concerning this research may be addressed to Jann M. Sutton, 302-831-1980. Concerns about this research may be presented to Rachel Karchmer-Klein, Ph.D. karchmer@udel.edu .

You may refuse to participate in the study or in any part of the study. If you choose to participate in the study, you are free to withdraw at any time without any negative effect.

You will receive a copy of this consent form for your records, signed and dated by the investigator.

_____ _____
Signature Date

_____ _____
Investigator's Signature Date

Faculty Member Interview Protocol

Faculty Member Interview Protocol	
Introduction/ Background	How many years have you taught at this institution and taught online?
Teaching	What are your perceptions of teaching in a fully online program?
Courses*	Please describe the course that relates to this module.
Reflection*	Which module did you select to review?
Perceptions*	Describe the reason(s) you selected this module.
	What was successful?
	What was problematic?
Perceptions*	What student feedback have you received regarding this module?
LMS*	What Canvas tools did you decide to add or not? What activities and assignments?
Future*	What do you think would improve this module?
Experience	Describe the training you received to teach online? Formal training; learn on your own; examples?
	How do you learn new things about teaching online?
Concluding the Interview	What advice would you give to new faculty getting ready to teach online courses?
	Before we conclude the interview is there anything else you would like to add or share? By the end of December I should have a short report for you regarding my results.
*These questions will be asked for each course and module, if the instructor taught more than one course.	

Post Interview Notes

1. Overall Impression?
2. Unexpected comments?
3. Issue with question order or wording?
4. Complete face sheet
5. Did any themes emerge?
6. Write a thank-you note
7. Transcribe audio

Appendix C

FACULTY LETTER

Dear Dr. Faculty Member Name:

As you may know, I am in the process of completing my Doctorate of Education. The topic of my EPP concerns the application of a specific theoretical framework (which I will not disclose at this time) and how it can inform the instructional design process and how the Canvas LMS tools can leverage additional affordances. My EPP committee approved my proposal on June 7, 2016 and the IRB committee approved my survey instruments on June 23, 2016.

To achieve these goals, my advisor, Dr. Rachel Karchmer-Klein, has supported my inquiry of the Master of Education in Teacher Leadership program, due to the successful completion of the first student cohort this summer. To evaluate the entire program is beyond the scope of my EPP; therefore, with your kind consideration I have narrowed the focus to review only one module in each of the ten courses in the program.

This inquiry includes your support in the following ways.

1. ***Review and sign attached consent form***: Please carefully review the attached consent to participate in research form. If you agree to participate, you may return this form with a digital signature when you complete steps 2 and 3 below. If you do not agree to participate, please let me know as soon as possible.

2. ***Reflect and Identify***: Please thoughtfully reflect on each of the courses that you have taught for the M.Ed. in TL program. Based upon your teaching experiences, your student course evaluations, and your preceptor reflections (if available), please identify one module you would like to improve upon in some way in each course(s). Is there a module that students have had difficulty with or is there a module that you feel needs additional review?

3. ***Summarize and Respond***: After you have identified a module, please draft a short response (paragraph/bulleted list) that answers the following questions. You are welcome to send me your responses in an email or as a text file, either is welcome. You may use the attached Word document as a template if that is helpful.

Please copy and respond to these questions for ALL of the courses you have taught for the program.

a. Course name/number:

b. Module:

c. Why did you select this module for modification?

d. Did you receive student feedback on this particular module? If so, please elaborate.

e. What changes do you think would improve this module?

4. ***Schedule an Interview***: I would like to conduct a 20-30 minute interview via Skype in order to gain a comprehensive understanding of the module(s) you selected and your application of the Canvas affordances. Please use this link to schedule an interview at a convenient time. NOTE: there are several date/time options

- ***be sure to scroll to the far right to save your choices***. Your name will only show as "participant" to others.

5. ***Provide Course Access***: In order for me to accomplish a comprehensive review of the module, I would like to request instructor-level access to each of the courses. This access will enable a full review of the module, its settings, and overall Canvas affordances for this module. Please be assured that at no time will student grades be analyzed or recorded. And at no time will course analytics be applied to student behavior. Canvas access is strictly requested to analyze the content and design of the identified module.

6. ***Outcomes***: One of the outcomes for my EPP will include a module summary based on the identified theoretical framework, instructional design strategies, and Canvas affordances. The intention of this summary is to provide you with a thoughtful review to support your teaching strategies. The second outcome is a public presentation for the entire M.Ed. in TL faculty and other University stakeholders. Please be assured that all data will be anonymous and aggregated.

Thank you for your consideration of these requests and I ask for your response no later than ***August 19.***

Sincerely,

Jann Marie Sutton, M.Ed.

Doctoral Candidate

Appendix D

COI CODING TEMPLATE

Table 4

Community of Inquiry Coding Template

Elements	Categories	Indicators (examples only)
Cognitive Presence	Triggering Event	Sense of puzzlement
	Exploration	Information exchange
	Integration	Connecting ideas
	Resolution	Apply new ideas
Social Presence	Emotional Expression	Emoticons
	Open Communication	Risk-free expression
	Group Cohesion	Encouraging collaboration
Teaching Presence	Instructional Management	Defining & initiating discussion topics
	Building Understanding	Sharing personal meaning
	Direct Instruction	Focusing discussion

(Garrison, Anderson, & Archer, 2000, p. 4)

Appendix E

SURVEY INSTRUMENT

Community of Inquiry Survey Instrument

5 point Likert-type scale*

1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree

*NOTE: text options will be made available after each category to enable participant to comment more specifically if desired.

Teaching Presence

Design & Organization

1. The instructors clearly communicated important course topics.

2. The instructors clearly communicated important course goals.

3. The instructors provided clear instructions on how to participate in course learning activities.

4. The instructors clearly communicated important due dates/time frames for learning activities.

Facilitation

5. The instructors were helpful in identifying areas of agreement and disagreement on course topics that helped me to learn.

6. The instructors were helpful in guiding the class towards understanding course topics in a way that helped me clarify my thinking.

7. The instructors helped to keep course participants engaged and participating in productive dialogue.

8. The instructors helped keep the course participants on task in a way that helped me to learn.

9. The instructors encouraged course participants to explore new concepts in this course.

10. Instructors' actions reinforced the development of a sense of community among course participants.

Direct Instruction

11. The instructors helped to focus discussion on relevant issues in a way that helped me to learn.

12. The instructors provided feedback that helped me understand my strengths and weaknesses.

13. The instructors provided feedback in a timely fashion.

Social Presence

Affective expression

14. Getting to know other course participants gave me a sense of belonging in the course.

15. I was able to form distinct impressions of some course participants.

16. Online or web-based communication is an excellent medium for social interaction.

Open communication

17. I felt comfortable conversing through the online medium.

18. I felt comfortable participating in the course discussions.

19. I felt comfortable interacting with other course participants.

Group cohesion

20. I felt comfortable disagreeing with other course participants while still maintaining a sense of trust.

21. I felt that my point of view was acknowledged by other course participants.

22. Online discussions help me to develop a sense of collaboration.

Cognitive Presence

Triggering event

23. Problems posed increased my interest in course issues.

24. Course activities piqued my curiosity.

25. I felt motivated to explore content related questions.

Exploration

26. I utilized a variety of information sources to explore problems posed in this course.

27. Brainstorming and finding relevant information helped me resolve content related questions.

28. Online discussions were valuable in helping me appreciate different perspectives.

Integration

29. Combining new information helped me answer questions raised in course activities.

30. Learning activities helped me construct explanations/solutions.

31. Reflection on course content and discussions helped me understand fundamental concepts in this class.

Resolution

32. I can describe ways to test and apply the knowledge created in this program.

33. I have developed solutions to course problems that can be applied in practice.

34. I can apply the knowledge created in this program to my work or other non-class related activities.

Q. Do you have any additional comments or information you would like to share?

Appendix F

MODULE ARTIFACTS COMPLETE CATALOGUE

Mapping the Community of Inquiry Rubric to Modules Complete

				Leveraged Affordances			Cognitive Presence				Teaching Presence			Social Presence		
Number	Module Element	Activity	Canvas Tool(s)	Multimodality	Interactivity	Collaboration	Triggering Event	Exploration	Integration	Resolution	Instructional Design	Direct Instruction	Facilitation	Affective	Open	Group Cohesion
1		Objectives	Content Page	X			X	X			X	X				
2		Presentation	Content Page	X			X	X			X	X				
3			Discussions: “Questions/Comments”	X	X		X	X			X	X	X	X	X	
4		Presentation	Content Page	X			X	X			X	X				
5			Discussions: “Questions/Comments”	X	X		X	X			X	X	X	X	X	
6		Presentation	Content Page	X			X	X			X	X				
7			Discussions: “Questions/Comments”	X	X		X	X			X	X	X	X	X	
8		Reading	Content Page	X			X	X			X	X				
9			Discussions: “Questions/Comments”	X	X		X	X			X	X	X	X	X	
10		Assessment	Assignments	X			X	X	X		X	X				
11			Discussions: “Need help with critique”	X	X		X	X			X	X	X	X	X	
12		Assessment	Assignments	X			X	X			X	X				
13			Collaborations Tool	X			X	X	X		X	X	X			
14			Discussions: “Need help with journal”	X	X		X	X			X	X	X	X	X	
15		Closing	Content Page	X							X					
16		Objectives	Content Page	X			X	X			X	X				
17			Content Page: "Course Glossary"	X			X	X			X	X				
18			Discussion: "Course Glossary Additions"	X	X		X	X			X	X	X	X	X	
19		Assessment	Discussions: Assessment instructions	X			X	X			X					

Mapping the Community of Inquiry Rubric to Modules Complete

				Leveraged Affordances			Cognitive Presence				Teaching Presence			Social Presence		
Number	Module Element	Activity	Canvas Tool(s)	Multimodality	Interactivity	Collaboration	Triggering Event	Exploration	Integration	Resolution	Instructional Design	Direct Instruction	Facilitation	Affective	Open	Group Cohesion
20			Student Groups Discussion Tool	X	X		X	X	X	X	X	X	X	X	X	
21			Discussions: "Ask the instructors"	X	X		X	X			X	X	X	X	X	
22		Assessment	Discussions	X	X	X	X	X	X	X	X	X	X	X	X	
23			Links to: Google Hangouts, Google Docs	X	X	X	X	X	X	X	X	X	X	X	X	X
24			Discussions: "Ask the instructors"													
25		Assessment	Discussions: Assessment instructions	X	X		X	X			X	X		X	X	
26			Discussions: "Ask the instructors"	X	X		X	X			X	X	X	X	X	
27		Reading	Content Page	X	X		X	X			X	X				
28			Discussions: "Ask the instructors"	X	X		X	X			X	X	X	X	X	
29		Assessment	Discussions: Assessment instructions	X	X		X	X			X	X	X	X	X	
30			Discussions: "Ask the instructors"	X	X		X	X			X	X	X	X	X	
31		Presentation	Content Page	X			X	X			X					
32			Discussions: "Ask the instructors"	X	X		X	X			X	X	X	X	X	
33		Closing	Content Page	X			X				X					
34		Objectives	Content Page	X			X	X			X	X				
35		Assessment	Discussions	X	X		X	X			X	X	X	X	X	
36		Reading and Presentation	Content page	X			X	X			X	X				
37		Reading	Content Page	X			X	x			X	X				
38		Assessment	Discussions	X			X	X			X	X				
39			Group Tool	X	X		X	X	X		X	X	X	X	X	
40			Discussions: "Ask the instructors"	X	X		X	X			X	X	X	X	X	
41		Reading	Content page	X			X	X	X		X	X				
42		Assessment	Discussions	X			X	X	x	x	X	X				

Mapping the Community of Inquiry Rubric to Modules Complete

				Leveraged Affordances			Cognitive Presence				Teaching Presence			Social Presence		
Number	Module Element	Activity	Canvas Tool(s)	Multimodality	Interactivity	Collaboration	Triggering Event	Exploration	Integration	Resolution	Instructional Design	Direct Instruction	Facilitation	Affective	Open	Group Cohesion
43			Group Tool	X	X		X	X	X		X	X	X	X	X	X
44			Discussions: "Ask the instructors"	X	X		X	X			X	X	X	X	X	
45		References for module readings	Content Page	X			X				X					
46		Review module objectives	Content Page	X			X	X			X	X				
47		Assessment	Assignments	X			X	X			X	X				
48		Assessment	Assignments	X			X	X	X		X	X				
49		Assessment	Discussions	X	X		X	X			X	X	X	X	X	
50		Reading	Content Page	X			X	X			X	X				
51		Reading	Content Page	X			X	X			X	X				
52		Assessment	Assignments	X			X	X	X	X	X	X				
53		Assessment	Discussions	X	X		X	X			X	X	X	X	X	
54		Assessment	Assignments	X			X	X	X	X	X	X				
55		Assessment	Discussions	X	X		X	X			X	X	X	X	X	
56		Objectives	Content Page	X			X	X			X	X				
57		Activity	Linked page	X			X	X			X	X				
58		Assessment	Assignments	X			X	X			X	X				
59			Discussions grouped by grade level	X	X		X	X	X	X	X	X	X	X	X	
60		Presentations	Content Page	X			X	X			X	X				
61		Reading and Presentation	Content Page	X			X	X	X		X	X				
62		Reading	Content Page	X			X	X			X	X				
63		Reading	Content Page	X			X	X	X		X	X				
64		Reading and presentation	Content Page	X			X	X	X		X	X				
65		Reading	Content Page	X			X	X	X		X	X				
66		Reading	Content Page	X			X	X	X		X	X				
67		Reading	Content Page	X			X	X	X		X	X				
68		Assessment	Assignments	X			X	X			X	X				

Mapping the Community of Inquiry Rubric to Modules Complete

				Leveraged Affordances			Cognitive Presence				Teaching Presence			Social Presence		
Number	Module Element	Activity	Canvas Tool(s)	Multimodality	Interactivity	Collaboration	Triggering Event	Exploration	Integration	Resolution	Instructional Design	Direct Instruction	Facilitation	Affective	Open	Group Cohesion
69			Discussions grouped by video selection	X	X		X	X	X		X	X	X	X	X	
70		Closing	Content Page	X							X					
71		Objectives	Content Page	X			X	X			X	X				
72		Reading and presentation	Content Page	X			X	X			X	X				
73		Reading and presentation	Content Page	X	X		X	X			X	X				
74			Twitter	X			X	X			X	X	X	X	X	
75		Reading	Content Page	X			X	X			X	X				
76		Reading and Presentation	Content Page	X			X	X			X	X				
77		Assessment	Assignments	X			X	X			X	X				
78			Discussions grouped by group assignment	X	X		X	X	X		X	X	X	X	X	
79		Assessment	Discussions	X	X		X	X	X	X	X	X	X	X	X	
80		Closing	Content Page	X							X					
81		Objectives	Content Page	X			X	X			X	X				
82		Reading	Content Page	X			X	X			X	X				
83			Discussions: "Ask the instructors"	X	X		X	X			X	X	X	X	X	
84		Reading and Presentation	Content Page	X			X	X			X	X				
85			Discussions: "Ask the instructors"	X	X		X	X			X	X	X	X	X	
86		Assessment	Discussions	X			X	X			X	X				
87			Group Tool	X	X		X	X	X		X	X	X	X	X	
88			Discussions: "Ask the instructors"	X	X		X	X			X	X	X	X	X	
89		Assessment	Discussions	X			X	X			X	X				
90			Group Tool	X	X		X	X	X	X	X	X	X	X	X	
91			Discussions: "Ask the instructors"	X	X		X	X			X	X	X	X	X	
92		Closing	Content Page	X			X				X	X				
93		Closing Presentation	Content page	X			X	X			X	X				

Mapping the Community of Inquiry Rubric to Modules Complete

				Leveraged Affordances			Cognitive Presence				Teaching Presence			Social Presence		
Number	Module Element	Activity	Canvas Tool(s)	Multimodality	Interactivity	Collaboration	Triggering Event	Exploration	Integration	Resolution	Instructional Design	Direct Instruction	Facilitation	Affective	Open	Group Cohesion
94		Objectives	Content Page	X			X	X			X	X				
95		Assessment	Discussions	X			X	X			X	X				
96			Group Tool	X	X		X	X	X		X	X	X	X	X	
97			Discussions: "Ask the instructors"	X	X		X	X			X	X	X	X	X	
98		Assessment	Assignments	X			X	X	X		X	X				
99			Discussions: Ask the instructor	X	X		X	X			X	X	X	X	X	
100		Closing	Content Page	X							X					

Appendix G

FACULTY MODULE SUMMARY

COURSE NAME
INSTRUCTOR NAME

Module 2

Prepared by Jann Marie Sutton, M.Ed.

REFLECTING THE COMMUNITY OF INQUIRY THEORY

1. Research Purpose

- The purpose of this researcher's Executive Position Paper is to examine one module in each course in the online Master of Education in Teacher Leadership program to determine if and how the Community of Inquiry (CoI) framework is reflected in and might inform the instructor-selected modules. The goal is to provide recommendations for strengthening the social, teaching, and cognitive presences in the module and in the online program as a whole. The following questions will guide this work:

    1. How does the selected module in the course reflect the CoI?
    2. How do current assignments in the selected courses leverage the technological tools and affordances available in the Canvas LMS?
    3. In what ways can the course assignments in the M.Ed. in TL courses be revised to reflect CoI and leverage Canvas tools and affordances more effectively?

2. Community of Inquiry (CoI) Background

- *A highly regarded research-based theory for the creation and evaluation of online learning is the Community of Inquiry (CoI) framework developed by Garrison, Anderson, and Archer (2000). The framework suggests that by creating an environment that develops three core elements: social, cognitive, and teaching presences, a community of inquiry can be sustained to promote student engagement and learning (Garrison et al., 2000; Swan, Garrison & Richardson, 2009). Research has demonstrated that the Community of Inquiry model is a valid framework for informing online education. (Arbaugh, 2007; Arbaugh et al., 2008; Garrison, Cleveland-Innes & Fung, 2004; Shea & Bidjerano, 2009; Swan et al., 2008).*

- Three presences are the framework of the CoI and are described below.
    - ***Social presence*** identifies the student's ability to "project themselves socially and emotionally in a community of inquiry" (Rourke, Anderson, Garrison, & Archer, 2001, p.3). The three components of social presence include: affective communication, open communication, and group cohesion.
    - ***Cognitive presence*** is described as "…the extent to which learners are able to construct and confirm meaning through sustained reflection and discourse in a critical community of inquiry" (Garrison et al., 2001, p.11).
    - ***Teaching presence*** is "the design, facilitation and direction of cognitive and social processes for the purpose of realizing personally meaningful and educationally worthwhile learning outcomes" and consists of design, facilitation, and instruction (Anderson, Rourke, Garrison, & Archer, 2001, p.5).

3. Module Overview

In the course, XX, the instructor selected "Module 2: XX" for review. This module is the second of seven in the course. Each module is taught during a one-week period with the semester consisting of seven weeks. "Module 2: XX" consists of eight components with an introduction, a closing, four content sections and two assessments. A more detailed review of the module can be found in the Module Analysis section below.

Appendix H

OLC QUALITY SCORECARD

Quality Scorecard

for the Administration of Online Programs

0 = Deficient **1** = Developing **2** = Accomplished **3** = Exemplary

INSTITUTIONAL SUPPORT (27 POINTS)

		SCORE
1	The institution has a governance structure to enable clear, effective, and comprehensive decision making related to online education.	
2	The institution has policy and guidelines that confirm a student who registers in an online course or program is the same student who participates in and completes the course or program and receives academic credit. This is done by verifying the identity of a student by using methods such as (a) a secure login and passcode, (b) proctored examinations, or (c) other technologies and practices that are effective in verifying student identity.	
3	The institution has a policy for intellectual property of course materials; it specifically addresses online course materials and is publicly visible online.	
4	The institution has defined the strategic value of online learning to its enterprise and stakeholders.	
5	The organizational structure of the online program supports the institution's mission, values, and strategic plan.	
6	The online program's strategic plan is reviewed for its continuing relevance, and periodically improved and updated.	
7	The institution has a process for planning and allocating resources for the online program, including financial resources, in accordance with strategic planning.	
8	The institution demonstrates sufficient resource allocation, including financial resources, in order to effectively support the mission of online education.	
9	The institution has a governance structure to enable systematic and continuous improvement related to the administration of online education.	

TECHNOLOGY SUPPORT (21 POINTS)

		SCORE
1	A documented technology plan that includes electronic security measures (e.g., password protection, encryption, secure online or proctored exams, etc.) is in place and operational to ensure quality, in accordance with established standards and regulatory requirements.*	

Note: The order of quality indicators within each category does not signify rank of importance. They are provided in random order.

Appendix I

QUALITY MATTERS RUBRIC

QUALITY MATTERS
QM

For more information visit www.qualitymatters.org or email info@qualitymatters.org

Quality Matters™ Rubric Standards
Fifth Edition, 2014, with Assigned Point Values

Standards			Points
Course Overview and Introduction	1.1	Instructions make clear how to get started and where to find various course components.	3
	1.2	Learners are introduced to the purpose and structure of the course.	3
	1.3	Etiquette expectations (sometimes called "netiquette") for online discussions, email, and other forms of communication are clearly stated.	2
	1.4	Course and/or institutional policies with which the learner is expected to comply are clearly stated, or a link to current policies is provided.	2
	1.5	Minimum technology requirements are clearly stated and instructions for use provided.	2
	1.6	Prerequisite knowledge in the discipline and/or any required competencies are clearly stated.	1
	1.7	Minimum technical skills expected of the learner are clearly stated.	1
	1.8	The self-introduction by the instructor is appropriate and is available online.	1
	1.9	Learners are asked to introduce themselves to the class.	1
Learning Objectives (Competencies)	2.1	The course learning objectives, or course/program competencies, describe outcomes that are measurable.	3
	2.2	The module/unit learning objectives or competencies describe outcomes that are measurable and consistent with the course-level objectives or competencies.	3
	2.3	All learning objectives or competencies are stated clearly and written from the learner's perspective.	3
	2.4	The relationship between learning objectives or competencies and course activities is clearly stated.	3
	2.5	The learning objectives or competencies are suited to the level of the course.	3
Assessment and Measurement	3.1	The assessments measure the stated learning objectives or competencies.	3
	3.2	The course grading policy is stated clearly.	3
	3.3	Specific and descriptive criteria are provided for the evaluation of learners' work and are tied to the course grading policy.	3
	3.4	The assessment instruments selected are sequenced, varied, and suited to the learner work being assessed.	2
	3.5	The course provides learners with multiple opportunities to track their learning progress.	2
Instructional Materials	4.1	The instructional materials contribute to the achievement of the stated course and module/unit learning objectives or competencies.	3
	4.2	Both the purpose of instructional materials and how the materials are to be used for learning activities are clearly explained.	3
	4.3	All instructional materials used in the course are appropriately cited.	2
	4.4	The instructional materials are current.	2
	4.5	A variety of instructional materials is used in the course.	2
	4.6	The distinction between required and optional materials is clearly explained.	1
Learner Activities and Learner Interaction	5.1	The learning activities promote the achievement of the stated learning objectives or competencies.	3
	5.2	Learning activities provide opportunities for interaction that support active learning.	3
	5.3	The instructor's plan for classroom response time and feedback on assignments is clearly stated.	3
	5.4	The requirements for learner interaction are clearly stated.	2
Course Technology	6.1	The tools used in the course support the learning objectives and competencies.	3
	6.2	Course tools promote learner engagement and active learning.	3
	6.3	Technologies required in the course are readily obtainable.	2
	6.4	The course technologies are current.	1
	6.5	Links are provided to privacy policies for all external tools required in the course.	1
Learner Support	7.1	The course instructions articulate or link to a clear description of the technical support offered and how to obtain it.	3
	7.2	Course instructions articulate or link to the institution's accessibility policies and services.	3
	7.3	Course instructions articulate or link to an explanation of how the institution's academic support services and resources can help learners succeed in the course and how learners can obtain them.	2
	7.4	Course instructions articulate or link to an explanation of how the institution's student services and resources can help learners succeed and how learners can obtain them.	1
Accessibility and Usability	8.1	Course navigation facilitates ease of use.	3
	8.2	Information is provided about the accessibility of all technologies required in the course.	3
	8.3	The course provides alternative means of access to course materials in formats that meet the needs of diverse learners.	2
	8.4	The course design facilitates readability.	2
	8.5	Course multimedia facilitate ease of use.	2