Exploring Online Critical Inquiry Experiences of First Year Undergraduate Nursing Students in a
Northeast American College: An Interpretive Phenomenological Analysis

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Abstract

Developing practitioners who can think critically is a core goal in the nursing discipline. The ability to prioritize information, problem solve, and support decisions with evidence positively correlates with patient quality of care, safety, and outcomes. These skills however are challenging to teach and learn, and research shows many nursing students and new nurses lack proficiency. As programs move online, it is imperative we understand how to better design and teach courses for improved critical inquiry. This interpretive phenomenological analysis explored undergraduate nursing students’ experiences in an online course that included critical thinking as a goal. The primary research question guiding this study was: How do undergraduate nursing students describe their first year experience with critical inquiry in an online course on nursing history and theory? Participants of this study included six undergraduate nursing students who, during the first semester of the program, completed a hybrid course. Following data analysis of semi-structured interviews, five main themes emerged. Findings indicated that previous experiences and context formed individuals’ critical inquiry definition and how they perceived its success. Critical inquiry improved as knowledge and skills developed over time. Success increased when instructors established relationships with their students, motivating them to engage in the coursework and with their peers. Positive peer relationships were important for boosting students’ willingness to share information, supporting discourse. Finally, opportunities for organic, informal conversations gave students foundational material for deeper discussions. Keywords: online critical inquiry, critical thinking, community of inquiry, cognitive presence.
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Chapter One: Introduction

As an instructional designer, I see that online courses often fail to enhance student critical thinking skills. In the course under investigation, both the nursing program and the class syllabus articulate that critical thinking is an imperative skill in this profession that they will work to teach. Nursing students, however, have had mixed results in developing this skill. During this study, I researched the challenges and successes nursing students experienced with online critical thinking. The goal was to learn what teaching and learning elements helped or hindered students. This information can, ultimately, help inform the decisions of instructional designers and faculty to better design and facilitate online courses that successfully and consistently promote critical inquiry for learners. This chapter includes five major sections: an overview of the topic and research problem, the significance of the study, my positionality, the research questions, and the theoretical framework.

Statement of the Problem

Critical inquiry, sometimes called critical thinking or higher-order learning, is a deliberate way in which people can make decisions and solve ill-defined or ambiguous problems and situations (Kitot, Ahmad, & Seman, 2010; Saadé, Morin, & Thomas, 2012). Critical inquiry is important for recognizing false, incomplete, or outdated information, weighing evidence, and considering empirically based alternatives during decision-making and problem solving (Butler, 2012; Profetto-McGrath, 2005; Saadé et al., 2012; Tanner, 2006). It is an essential skill for 21st century workers and students (Butler, 2012; Trends in Learning Outcomes Assessment, 2016).

Some researchers view critical inquiry as a skill or set of skills learned over time (Halpern, 1999; Profetto-McGrath, 2003), while others see it as a process (Brookfield, 2012; Garrison, Anderson, & Archer, 2001; Facione & Facione, 1996). Garrison (1991) specifically
outlines critical thinking as a process where people perceive a problem, explore their own relevant knowledge of the subject, construct an explanation or solution to the problem, and come to a resolution. While researchers disagree with how critical inquiry is achieved, they do agree that critical inquiry is essential to the progression of constructing meaning and creating new knowledge (Garrison & Archer, 2000; Liu, Frankel, & Roohr, 2014; Stapleton, 2011).

Critical inquiry is distinguished from other forms of learning by two essential elements: reflection and discourse (Garrison, 2003). Reflection is an internal cognitive activity where meaning-making happens through careful thinking about ideas (Kanuka & Garrison, 2004; Garrison & Archer, 2000). Garrison (2011) describes discourse as collaborative conversation, inquiry, debate, and instruction. Discourse is how one moves from reflective meaning-making to a deeper level of understanding, thus enabling knowledge creation (Garrison & Archer, 2000). For this study, critical inquiry is defined as an integrated, iterative process of deep reasoning and knowledge creation where people engage in both personal reflection and collaborative discourse before drawing conclusions (Garrison, 1992, 2003, 2011; Kanuka & Garrison, 2004).

Understanding how students’ experience critical thinking is key to knowing how to teach it (Brookfield, 2012). Garrison and Archer (2000) argue that critical inquiry should be taught within the context of a discipline, not as a stand-alone course or topic, for two reasons. First, critical inquiry can mean different things, depending on the subject being taught. Second, it only can happen when students’ have sufficient knowledge of the subject or topic being discussed. Once critical inquiry is situated in the context of what is being taught, how the learning experience is structured for application is important (Brookfield, 2012; Lin, Han, Pan, & Chen, 2015; Makri, Papanikolaou, Tsakiri, & Karkanis, 2014).
Abrami et al. (2014) state discipline-specific critical thinking is best taught with concrete problems. There are several teaching strategies effective in using problems or situations as a foundation, such as, probing questions, modeling, and sharing one’s reasoning processes, also known as think-alouds (Jeffries & Norton, 2005). Collaboration is an important component of these teaching strategies, and Garrison and Archer (2000) state that it is essential for critical thinking. Unfortunately, successful experiences with teaching critical inquiry online have been rare (Garrison et al., 2001; Kanuka & Garrison, 2004; Lucas, Gunawardena, & Moreira, 2014). In my own experience as an instructional designer, faculty have a difficult time translating their view of critical inquiry into measurable, observable objectives and providing students with sufficient time to complete them online. Because of this, online courses need to be designed and facilitated to support students working through the critical inquiry process. Clearly, however, we need to know more about how to accomplish this outcome through research like that proposed in this study. The term online, for the purposes of this study, includes both fully online classes and blended courses where content is facilitated both online and in-person.

The design of a course can influence students’ online experiences (Garrison & Cleveland-Innes, 2005). To support student learning, courses must be designed with activities and assessments that align with objectives. Additionally, audience needs, course context and constraints, and the social aspects of learning must be contemplated. Unfortunately, these elements are sometimes not considered during online course design (Saadé et al., 2012). All too often educators take an in-person course and simply copy it into an online course without an understanding of how students will interact with the content, each other, or with the instructor.

Rich interactions and relationships in online environments are essential for higher-order learning, yet they often are lacking (Darabi, Arrastia, Nelson, Cornille, & Liang, 2011). When
educators and students are disconnected in online courses, either through bad design or insufficient interactions, dialogue decreases and the need for student autonomy increases (Moore, 2013). This makes complex skills and processes, like critical inquiry, more difficult for educators to teach and for students to learn (Saadé et al., 2012). Educators need knowledge of the student experience in order to identify design and facilitation approaches that will improve the learning of critical inquiry in online environments (Moore, 2013).

Studies show students in online environments rarely complete the critical inquiry process, moving from an event or problem to applying new ideas and taking action (Akyol & Garrison, 2011b; Darabi et al., 2011; Garrison et al., 2001; Hew & Cheung, 2011; McLoughlin & Mynard, 2009; Roseli & Umar, 2015). Due to time constraints, lack of effort, lack of skill, conflict avoidance, or other unknown reasons, students in online discussions rarely reach resolution. They focus mainly on sharing ideas from previous lectures or the reading assignments (Roseli & Umar, 2015). Students simply share and explore, rather than negotiate meaning and solutions (Garrison et al., 2001; Kanuka & Garrison, 2004; Lucas et al., 2014). Garrison (2003) argues that promoting critical inquiry online requires a radical shift in course design and delivery. There needs to be more focus on and management of how students and instructors connect with each other, with their peers, and with course materials.

I work with nursing educators who struggle to improve students’ critical inquiry skills. Prioritizing information, problem solving, and supporting decisions with evidence continue to challenge our students. Course evaluations show the problem is heightened in online courses where students sometimes feel isolated and overwhelmed. It also may contribute to National Council Licensure Examination (NCLEX) scores, although a formal assessment was not completed.
Many quantitative studies show there are three factors that impact learners’ experiences with online critical inquiry (Anderson, Rourke, Garrison, & Archer, 2001; Akyol & Garrison, 2011b; Garrison, 2011; Kozan & Richardson, 2014; Richardson & Ice, 2010; Rourke, Anderson, Garrison, & Archer, 1999; Rovai, 2002). These three factors are cognitive presence, social presence, and teaching presence. Cognitive presence is how much learners collaboratively interact to build knowledge. Social presence is how often people communicate, build affective relationships, and identify with others. Teaching presence is the role responsible for managing the cognitive and social presences, correlating with critical inquiry. A review of the literature did not reveal any qualitative studies that have explored the obstacles and successes that students experience across all three constructs. Thus, researchers cannot explain why students perceive they stop short during the online critical inquiry process.

Significance of the Problem

I researched first year undergraduate nursing students’ experiences because few studies have directly studied their perceptions of critical inquiry, even though developing reflective practitioners is a core goal across that discipline (Borglin & Fagerström, 2012; National League for Nursing, 2015; Russell, 2015; Scheele, Pruitt, Johnson, & Xu, 2011). Nursing students must make significant decisions impacting patient health and quality of life and make well-reasoned conclusions in clinical situations (Chan, 2013; Piergiovanni 2014).

culture, and affective cognition”) have a positive influence on patient safety (pp. 762-764).

Nurses must deal with people holistically; guesswork and inferences cannot be loosely employed (Chabeli, 2007). They must be able to ask appropriate questions, consider patient input, and make rational, clinical judgments based on the information they have to work with to achieve successful complex health-related decisions (Chabeli, 2007; Martyn et al., 2014).

Several researchers argue that many nursing students and new nurses are not proficient in critical thinking skills (Borglin & Fagerström, 2012; Del Bueno, 2005; Killam & Heerschap, 2013). Fero et al. (2009) find that a significant number (approximately 25%) of newly hired nurses cannot manage critical situations. They compromise the safety of patients because of their inability to make decisions, recognize problems, prioritize care, and provide interventions. I know programs place a heavy emphasis on these skills, having worked firsthand with them. New nurses have a difficult time with critical thinking skills despite the fact that programs intentionally include them in the curriculum. The challenge is to identify why these skills remain problematic for students. As nursing education turns to online environments to address a shortage of qualified professionals, critical inquiry skills must be mastered online by students (Bolan, 2003; Bosher & Smalkoski, 2002; Massachusetts Department of Higher Education Nursing Initiative, 2010; McIntyre, McDonald, & Racine, 2013; National League for Nursing, 2015). Understanding student experiences with online critical inquiry is essential to helping course developers and faculty design and create better online courses for nursing students. With improved online courses, critical inquiry will be better facilitated and integrated so that nursing students can practice and learn the necessary skills for improved patient care and safety.
**Positionality Statement**

I chose to study critical inquiry because, as an educator, I care about students’ learning experiences. I want to make a difference as an instructional designer through my research. In order to do so, I first must explore my identity so that I can accurately hear the participants and better understand the phenomenon. My profession and education form my identity.

I am an instructional designer at a healthcare graduate school. This profession can be a change agent in the transformation of higher education. Campbell, Schwier, and Kenny (2009) argue that instructional designers have an ethical and moral obligation to their work and must engage in dialogue to create courses that align with values and principles.

I work closely with school deans and department chairs on institutional and program level projects related to teaching and learning. This dialogue allows me to create faculty resources and events strategically aligned with the needs of our learning community, where I have a moral obligation to help improve the student experience. While the institutional and program level projects are important, the majority of my time is spent at the course level with faculty. One-on-one consultations occur often with nursing faculty and other disciplines to provide support and educational services based on research-based principles. During consultations, faculty confide in me their fears and weaknesses related to teaching, resulting in strong relationships.

As a professional in academia with close ties to deans, chairs, and faculty, students may see me as the “other” (Briscoe, 2005). Building trust with students during this study and remaining open to what is being said about their experiences with faculty may be challenging, but is necessary. I must set aside my biases as a faculty mentor and focus on the students.
Like the research participants, I also am an online student. It would be easy to assume that we faced similar challenges (Fennell & Arnot, 2008). I found online critical inquiry perplexing. It was difficult to recognize how far to take a discussion. It also was challenging to engage in critical discourse within the given time constraints of an assignment. Negotiating controversial topics could be particularly disconcerting. Conversations in small groups felt safer, rather than posting individually to the entire class. I had an opportunity to get to know my peers, which allowed for trust building and targeted feedback. Being comfortable sharing with my peers, having the right amount of knowledge and experience to intelligently discuss a particular topic, and having time to let conversations run longer led to better critical inquiry experiences. I must remember that these are my personal views, and that the participants in this study will have their own individual experiences.

**Research Questions**

The central research question of this interpretative phenomenological analysis (IPA) was: How do undergraduate nursing students describe their first year experience with critical inquiry in an online course on nursing history and theory? Secondary research questions to further guide this study included:

1) What experiences do they describe as helpful in learning critical inquiry in this online course?

2) What experiences do they describe as a hindrance in learning critical inquiry in this online course?

These questions were viewed through one theoretical lens: the Community of Inquiry (CoI) framework.
Theoretical Framework

Community of Inquiry (CoI) can be broadly defined as how a group of learners engage in critical reflection, socialization, and collaboration in order to construct knowledge through shared understanding (Garrison, Anderson, & Archer, 2000). Garrison et al. (2000) first introduced CoI as a model in an ongoing study researching prerequisites for deeper learning in a “text-based computer conferencing environment” (p. 87). The focus of this model was on experiences in an online environment. Their goal was to develop a framework that would investigate collaboration, critical thinking, and the overall educational experience when the primary form of communication among students and the teacher was online discussion boards (Garrison et al., 2001; 2010).

Prior to the introduction of the model, Anderson and Garrison (1995) noted through their own experiences that distance education students were not engaged in critical inquiry. They then undertook a review of the research literature and found that little attention had been paid to collaboration and critical thinking in online environments. They did find, however, previous research on isolated elements (social, teaching, and cognitive) that had been shown to be important for student learning and experience. Recognizing that students were struggling in teleconferencing settings, they became interested in developing a better understanding of how social, teaching, and cognitive elements functioned in environments with computer-mediated communication (CMC).

Researchers first began by conducting studies on the three elements separately, in relation to computer conferencing. Anderson and Garrison (1995) researched critical thinking in distance education and found collaboration improved higher-level learning (cognitive presence). Rourke et al. (1999) analyzed discussion posts based on the presence of humor, emotion, questions,
referencing peers and other affective, interactive, and cohesive indicators (social presence). Fabro and Garrison (1998) conducted an exploratory study of computer conferencing that found that a moderator who modeled critical inquiry was important to student outcomes (teaching presence).

Next, Garrison et al. (2000) began an ongoing research project by exploring existing literature related to learning and distance education, collaboration, and critical thinking. They found that while there were several valid theories related to these independent subjects, there was no single theory or framework addressing them holistically. Garrison et al. (2000) developed the Community of Inquiry (CoI) model which included three elements, “cognitive presence, social presence, and teaching presence”, arguing that all were significant for a rich educational experience (p. 88). The CoI framework was based on several theorists’ views: reflective inquiry, critical thinking, and collaborative education from Dewey (1933, 1897/2009); community of inquiry and critical thinking from Lipman (1991); and distance education theory from Moore (1972, 1973). It also drew from other researchers’ work on online computer conferencing, higher-order learning, online facilitation, and communication (Garrison, Anderson, & Archer, 2003). This information is further discussed in the literature review (Chapter Two).

The three elements in the CoI framework (cognitive presence, social presence, and teaching presence) are significant for both in-person and online environments. What Garrison et al. (2000) recognized was that online environments had special considerations related to communication. While critical thinking still occurred, it was enhanced when social and teaching presence were established (Akyol & Garrison, 2011b; Fabro & Garrison 1998; Gunawardena, 1995; Liu, Gomez & Yen, 2009). In an in-person teaching experience, some of the social and teaching elements may occur organically due to interpersonal proximity. In an online
environment, these elements may not occur without planning and intentionality. Using the three elements taken from pre-existing studies, Garrison et al.’s (2000) research resulted in key words and phrases for each of them to help identify their occurrence and guide future facilitation online.

**Cognitive presence.** Critical inquiry occurs within the cognitive presence element, which is why Garrison et al. (2000) argue that cognitive presence is essential to critical thinking. Cognitive presence is the degree of knowledge building through prolonged interaction within a community of learners (Garrison et al., 2000). This is important to recognize so appropriate learning strategies and activities can be selected and the learning process can be regulated (Garrison, 2003). To better understand cognitive presence, we turn to the practical inquiry model.

The practical inquiry model is a more detailed explanation of the critical inquiry process illustrating the cycle of learning (Garrison, 2011). Referencing Dewey (1933) and Brookfield’s (1987) phases of reflective thinking, discussed later in this chapter, Garrison (1991) incorporates the concepts of problem solving and creative thinking to reflect an understanding of critical thinking. The model (Figure 1) is based on experience and transpires through practice (Garrison et al., 2000). There are two axes that help form the practical inquiry model. Garrison et al. (2000) describe the vertical axis as “reflection (applicability) on practice” and the horizontal axis as “assimilation of information (awareness) and construction of meaning (ideas)” (p. 98). Together, the axes represent collaboration; they integrate both shared and individual views and experiences. To achieve cognitive presence, learners work through a multi-phased process beginning with perception of a triggering event. In the second phase, learners explore ideas; this is deliberation. In phase three, learners begin to integrate and connect ideas. Finally, there is resolution as learners are able to apply new ideas and take action (Garrison et al., 2000). The
completion of the four phases, where action is followed by new perceptions, represents the cycle of critical inquiry.

![Practical Inquiry Model](https://coi.athabascau.ca/coi-model/)


Studies show that cognitive presence alone is not enough. Without social and teaching presence, students share information and have light discussions but fail to integrate ideas or reach resolution (Garrison & Cleveland-Innes, 2005; Kozan & Richardson, 2014; Lee, 2014). While cognitive presence initially was found to be the primary element promoting critical inquiry (Garrison et al., 2000), more recent studies find that significant integration across all three of the elements in the CoI framework is necessary for higher-levels of learning (Akyol & Garrison, 2014; Lee, 2014; Kozan & Richardson, 2014; Shea et al., 2014). Social and teaching elements are needed to catalyze cognitive presence to a higher level, aiding effective critical inquiry.
In addition to cognitive presence (the critical inquiry process just described), the CoI framework includes social presence and teaching presence. Cognitive presence works with social presence to support discourse and with teaching presence in facilitating content selection. Social presence and teaching presence work together to set the climate. All three elements work together simultaneously to support the overall educational experience (Figure 2).

![CoI Model](https://coi.athabascau.ca/coi-model/)

*Figure 2: Community of Inquiry Model. Reprinted from CoI Model in *Community of Inquiry*, by Dr. Randy Garrison. n.d., Retrieved December 16, 2015, from https://coi.athabascau.ca/coi-model/. Copyright (n.d.) by Dr. Randy Garrison. Reprinted with permission.*

**Social presence.** Social presence is the degree to which online participants understand one another and build trust as a group or course, assertively correspond in a safe environment, and cultivate relationships by being personable and emotionally connected with others (Garrison, 2011). It is focused on freedom of individual expression, where the participants create a personal identity and establish relationships within a community (Garrison, 2011). Social presence is important to facilitating interaction among participants and it supports cognitive presence,
thereby enabling critical inquiry (Garrison et al., 2000). It also is important in building interpersonal relationships, reducing feelings of personal risk, and increasing acceptance of others and their ideas (Garrison, 2011).

Social presence occurs when there is a risk-free learning climate in which learners are collaborative and feel comfortable with freely expressing their ideas. Three behavioral categories help identify when social presence exists: “affective, interactive, and cohesive” (Rourke et al., 1999, p. 60). Rourke et al. (1999) describes affective as “expression of emotions, use of humor, and self-disclosure” (p. 67). Interactive behavior includes persistent online discussion, mentioning others’ messages, soliciting questions, giving compliments, and communicating agreement. Last, cohesive behavior includes addressing the group or referring to people by name and communicating socially. Social presence is important to critical inquiry in that an increase in social presence enhances in the quality of critical inquiry (Lee, 2014).

**Teaching presence.** Teaching presence is defined by Anderson, Liam, Garrison, and Archer (2001) as a role responsible for the design, facilitation, and guidance of both the cognitive and social presences. Teaching presence typically occurs through teachers’ actions that support learners’ social and cognitive presences and it is important, regardless of the teaching medium (Anderson et al., 2001). Garrison et al. (2000) argue that teaching presence must occur in order to facilitate critical inquiry.

There are three categories to help identify teaching presence: “design and organization, facilitating discourse, and direct instruction” (Anderson et al., 2001, p. 1). Design and organization includes setting the curriculum, choosing the appropriate medium to facilitate learning, establishing time parameters and class rules for communicating (Anderson et al., 2001). Facilitating discourse includes shaping constructive student exchanges to identify areas of
agreement/disagreement and consensus building, establishing a proper learning environment, acknowledging and reinforcing valuable student contributions, and keeping students motivated and engaged (Anderson et al., 2001). Direct instruction involves presenting content, providing content direction, summarizing discussions, assessing learning, providing direct feedback, correcting misconceptions, sharing resources, and managing class anxieties, including technology use (Anderson et al., 2001). These three areas of responsibilities support learning and aid in addressing the cognitive and social challenges within a Community of Inquiry framework (Swan, Garrison, & Richardson, 2009).

**Support for the CoI Framework**

Separately, the three CoI elements have been validated by many studies. Cognitive presence was founded as a result of critical thinking theories by Dewey (1933) and Brookfield (1987). Dewey (1933, 1897/2009) wrote about reflective inquiry, critical thinking, and collaborative education. He defined reflection as sequenced beliefs that built on one another, becoming a thread of thoughts. He argued that the reflective process was a result of both cognitive and social elements working together collaboratively. This collaboration was an essential part of knowledge creation. Dewey identified five steps in reflective thinking: introduction of a problem, defining the problem, identifying a possible solution, describing the rational or reasoning, supporting the idea and making a conclusion. Brookfield wrote about critical thinking, it’s essential elements, and how it could be observed. He believed critical thinking included emotion (joy, fear, relief, confusion, etc.) which helps drive our thinking to question and respond. He also believed people’s ability to imagine and explore alternatives was central to critical thinking because it led to reflective skepticism. Similar to Dewey, Brookfield (1987) described and defined five phases of critical thinking: triggering event, appraisal of the
event (clarify concerns), exploration (search for solutions), developing alternative perspectives, and integration (find and apply a resolution). These theories were the impetus for studies related to cognitive presence (Garrison, 1991).

Recent studies supporting the notion of cognitive presence include the psychological characteristics (Joksimovic, Gasevic, Jovanovic, Adesope, and Hatala, 2014), metacognition (Akyol & Garrison, 2011a), and the effects of support and feedback on deep learning (Stein, Wanstreet, Slagle, Trinko, and Lutz, 2013). Joksimovic et al.’s (2014) study aimed at identifying features to better describe the phases of cognitive presence. They analyzed 1,747 online student discussions and found that the word categories used as cognitive presence descriptors were accurate psychological characteristics and had distinct differences for each phase (the phases were presented in the practical inquiry model earlier in the chapter). Akyol and Garrison (2011a) researched metacognition as a construct that enhanced critical inquiry. Reviewing the metacognition literature, they defined three levels of cognition: knowledge of cognition, monitoring of cognition, and regulation of cognition (p. 184). They included indicators of metacognition at each level based on the CoI model. Using an online course designed with the CoI model elements, they analyzed a selection of online discussions to see how much metacognition occurred and at what level. In the particular discussions analyzed, they found evidence of metacognition based on the indicators. As the course progressed, students’ metacognition improved through increased explaining, clarifying, questioning, etc. Stein et al. (2013) wanted to research the effects of coaching and feedback on cognitive presence. They divided students into six randomly assigned groups; one received continuous coaching and feedback and the five others did not. They found that continuous coaching and feedback
interventions over time, improved cognitive presence. These studies supported the validity of
cognitive presence and deepened the research on this construct.

Some of the first literature on social presence focused heavily on computer conferencing
and technology (Gunawardena, 1991; Harasim, 1990). Garrison et al. (2000) pulled from this
literature and incorporated the social presence element into the CoI framework. Early online
social presence research resulted in Rourke et al. (1999) developing a template for measuring
online social presence. Online discussions were coded and analyzed to test the efficacy of the
template. Rourke et al. found that the social presence ratings were significantly different for the
two courses. The scores correlated to their impressions after reviewing the discussions, and to
student comments made during the discussions. While they argued that the scores provided
evidence that the template could document important differences in social presence, they also
recognized the need for further research to validate their instrument.

Researchers also studied social presence in relation to satisfaction. Gunawardena and
Zittle (1997) surveyed online graduate students on variable related to social presence,
satisfaction, barriers to participation, and technical skills and experience. Analysis of the scores
revealed that social presence could be a predictor of student satisfaction in an online course.
Richardson and Swan (2003) found similar results when they surveyed online students. In
addition to social presence and satisfaction, their study also included perceived learning as a
variable. They found higher perceptions of social presence correlated to high perceptions of
learning and satisfaction with the instructor.

The critical role of the instructor emerged from early theories and research related to
online collaborative learning and written communications (Fabro & Garrison, 1998; Feenberg,
1989; Kaye, 1992). Kaye (1992) wrote about the differences between communication and
collaboration, and examined issues online discussions may introduce during collaborative learning. Kaye defined collaboration as working together towards a shared goal, while communication was simply exchanging information (p. 2). He outlined three key issues instructors need to better manage when groups work online: social climate (lack of learners’ online experience and facilitator moderating skills), messaging (managing how written messages are interpreted and keeping long, multiple threads organized) and software environment (effectiveness of chosen tools to enable collaboration).

Fabro and Garrison (1998) studied students’ perceptions of their higher-order learning in an online environment and discovered similar results to Kaye. Surveys were used to collected data from 24 students taking a hybrid course and nine of those participated in semi-structured interviews. A focus group was then used to clarify the data. They found three themes closely related to Kaye’s three key issues; social climate, cognition, and collaborative learning. Related to social climate, students had difficulty getting to know one another online and perceived their in-person interactions as essential for learning. There were also cognition challenges. Students had problems interpreting written communications, believed the technology created hurdles, and were hesitant to critically analyze and provide peer feedback because they felt they needed to be polite to one another. The third finding was collaborative learning. Students did not feel collaboration was happening at a high level. They believed re-design of the course and more instructor participation would improve this. The study supported elements of Kaye’s theory and reinforced the importance of the instructor’s role in managing student relations, collaboration, and communications. Feenberg (1989) wrote specifically about online written communications. He outlined three online functions a moderator (instructor) needs to perform; contextualizing, monitoring, and meta. Contextualizing functions included opening the discussion, establishing a
model for discussion and managing the order and flow of topics. Monitoring included recognizing participants’ contributions and soliciting comments from them. Meta included the instructor clarifying comments as they happen and summarizing what has been communicated during the online discussions.

Using this information, as well as their own research, Garrison et al. (2000) further defined teaching presence and identified three key indicators for the role responsible for teaching presence: “instructional management, building understanding, and direct instruction” (p. 101). Instructional management addressed course structure. Building understanding was concerned with creating group cohesion and participation for knowledge creation and, direct instruction focused on guiding discussions and providing instructional direction and feedback. Garrison et al. (2000) integrated this element into the CoI framework and research proves it is an important component. Current literature however suggests that all three elements collectively are most meaningful to learning, as will be discussed below.

Recent research focuses on validating the need for all three elements (cognitive, social, and teaching) to be present. Kozan and Richardson (2014) examined the relationships across the CoI constructs. For this study, 211 online graduate students completed the CoI questionnaire. The questionnaire included 34 items measuring the three presences on a five-point scale (strongly disagreeing to strongly agreeing). Through correlation analysis they found the three elements had varying degrees of interdependence. Each presence improved or increased as a result of the others’ existence. Akyol and Garrison (2014) wanted to better understand the dynamics of a community of learners and the CoI interdependence. Over the course of a semester, 16 graduate students’ discussions were analyzed to see how the three elements changed. The students were also asked to complete a survey at the end of the semester to assess
the relationships across the CoI constructs and how students perceived their learning and satisfaction. Akyol and Garrison found that the elements were important to learning, but progressed and developed differently based on context. They suggested that different students, a different course, or environment could produce varied results. Both of these studies show the three CoI elements are interdependent and affect one another. Many researchers support the CoI framework and find positive correlations to student learning but the framework is still, theoretically, in the early stages of refinement.

**Critiques of the CoI Framework**

While there is ample research validating the CoI framework, concerns related to its limitations also were identified in the literature (Annand, 2011; Shea et al., 2010). Shea et al. (2010) argued that earlier research using the CoI framework is inadequate. They stated that most evidence-based research focused on individual elements of the framework and that research methods were largely centered on surveys or content analysis. These concerns could be attributed to the infancy of the framework. Research on single constructs has since been expanded to include validating the model in a more comprehensive fashion. As previously discussed, Kozan and Richardson (2014) studied the interdependent relationship of the three elements while Akyol and Garrison (2014) looked at how the three elements collectively progress and change over time. Future work will likely include alternative research methods, similar to this study.

Annand (2011) focused specifically on the limitations of the social construct in the CoI framework. He stated that his review and interpretation of the CoI research suggests that students do not value group work interactions related to social presence and that collaboration has little influence. He cited one study where only a small number of social indicators were found to predict reenrollment. In another study, he felt social presence was mislabeled because
collaboration was absent and should have been categorized as direct instruction. He believed that support for the social presence construct was inadequate. While Annand highlighted several important points, without a research study supporting his claims, these statements seem to lack validity and cannot be substantiated. In response to Annand’s criticism, Garrison (n.d.) stated that Annand’s critique was more about differences in educational paradigms. Annand generally argued for independent student work and against collaborative work, rather than actually critiquing the CoI framework.

Despite the concerns raised, a large community of researchers, as previously discussed, have validated the CoI framework and its elements (Akyol & Garrison, 2014; Anderson et al., 2001; Gunawardena & Zittle, 1997; Joksimovic et al., 2014; Kozan & Richardson, 2014; Richardson & Swan, 2003; Rourke et al., 1999; Stein et al., 2013). There continues to be support and work to advance CoI research.

The CoI framework includes the elements needed for deep, critical online learning and can be applied to various situations that include different educational contexts, disciplines (e.g. nursing), applications (online tools), and communication mediums (e.g. in-person, blended, or fully online). Nursing education, with a heavy focus on critical thinking skills, is a discipline that can help expand this framework’s applicability. The CoI framework was used in this study to better understand which aspects of online learning promote or hinder undergraduate nursing students’ efforts to engage in critical inquiry during their first year of study. While this study focused specifically on critical inquiry, all three elements in the CoI framework guided the interviews because, collaboratively, these constructs shape critical inquiry. The findings that emerged help us understand the perspective of students engaged in online critical inquiry within the nursing discipline.
Conclusion

Critical inquiry is important for considering information, decision-making, and problem solving. First year undergraduate nursing students must be proficient at critical inquiry to improve patient health and quality of life. Courses must be designed and facilitated to help students overcome the obstacles to critical inquiry in online learning environments. The CoI framework was used to help guide this interpretative phenomenological analysis and answer the primary research question: How do undergraduate nursing students describe their first year experience with critical inquiry in an online course on nursing history and theory? The next chapter reviews the literature associated with how critical inquiry (critical thinking) is learned, how it is taught, and how online environments influence teaching and learning. Chapter Three will discuss the methodology used in this study, participant recruitment, protection of human subjects, and validity.
Chapter Two: Literature Review

This literature review examined research related to how critical inquiry (critical thinking) is learned, how it is taught, and how online environments influence teaching and learning. Garrison (1992) stated that critical inquiry was different from ordinary thinking. Critical thinking is not simply how to think (Garrison et al., 2000); it also includes an analysis of what to think (Garrison, 1992; Garrison et al., 2000). Unlike surface learning, in which someone uses rote memory to recall information, it is a higher-order thinking ability used to objectively analyze and evaluate information before making a judgment. This distinction affects how courses are designed and facilitated. Online courses must provide opportunities that support students’ completion of this work. These considerations led to the exploration of three topics: how critical inquiry is taught, how it is learned, and the influences of an online learning environment.

The literature provided no consistent definition of critical inquiry. Kitot et al. (2010) provided an overview of several definitions. According to their review of the literature, critical thinking was defined as “not easily accepting or agreeing with something”, “a true assessment of any statement”, and “a process of evaluating statements, arguments, and experiences (p. 267 - 268). They also reported critical thinking was categorized in two ways: “weak”, used to intimidate other people’s views, and “strong”, used to evaluate ideas and arguments (p. 268). Another interpretation included critical thinking defined at three levels: low, high, and thinking process. Low included comparing and contrasting and high involved reasoning and assumptions. The thinking process encompassed decision-making and problem solving. Unlike others, Brookfield’s (1987) definition included a focus on reflection: “reflecting on the assumptions underlying our and others’ ideas and actions, and contemplating alternative ways of thinking and
living” (p. x). While the definitions of critical inquiry included some similarities at varying degrees, there was no single accepted definition.

As stated in Chapter One, critical inquiry for this study was viewed as an integrated, iterative process and defined as deep reasoning and knowledge creation in which people engage in both personal reflection and collaborative discourse before reaching a conclusion (Garrison, 1992, 2003, 2011; Kanuka & Garrison, 2004). Critical inquiry also was sometimes referred to in the literature as critical thinking, higher-order thinking or learning, and critical analysis. While I used author’s terminology to present and discuss their findings, the information in this literature review all relates to the concept of critical inquiry as defined above.

**Learning Critical Inquiry**

Critical inquiry is socially constructed (Brookfield, 2012; Nussbaum, 2008). This means that learning new information and grappling with abstract issues happens in a social context (Mezirow, 1990). Reflection and discourse, key elements in the critical inquiry process, are fundamental in the shared construction of new knowledge. They deepen the conversation between people who are exchanging comments that build upon one another, making it constructive (Moore, 2013). Students must learn how to engage in reflection and discourse in order to be able to think critically (Halpern, 1998, Nussbaum, 2008).

**Critical discourse.** Nussbaum (2008) defined critical discourse as reflective discussions related to content or information, during which different viewpoints are considered. Collaboration was a term frequently associated with critical discourse in the literature. This term emphasizes that critical discourse is about exploring ideas rather than choosing a right or wrong answer. Webb et al. (2008) viewed collaborative critical discourse as synonymous with collaborative argumentation. O’Keefe (1982) further refined this concept by delineating two
definitions of argumentation, one being a product (the argument itself) and the other a process (making an argument). He distinguished between the two by defining “argument” as a communicative act contained within discourse, while “arguing” was a type of interaction. Several arguments (products) could appear in argumentation (process). Making an argument (process) was viewed as a procedure for reaching critical decisions. O’Keefe’s definition of argumentation as a process was similar to Garrison’s (1992) view of critical discourse; it was socially constructed when people were engaged in a discussion making and evaluating one another’s points. Rowles and Brigham (2005) also defined argumentation as a “process of inquiry” (p. 296). The literature suggests that researchers have a shared understanding of critical discourse, based on several common elements (collaboration, discussions, and reflection/evaluation). These elements play a key role in online critical inquiry and are further discussed in this chapter.

Nussbaum (2008) stated that critical discourse was important because it promoted critical thinking and Garrison (1992) argued that it was essential to validating knowledge during the critical inquiry process. Several research studies support this link between discourse and learning (Frijters, ten Dam, & Rijlaarsdam, 2008; Garrison et al., 2001; O’Donnell, 2004). Following the practical inquiry model, Garrison et al. (2001) used content analysis to assess critical inquiry in discussion threads. They discovered that the final phase of critical inquiry, problem resolution through discourse, rarely occurred. While the researchers recognized that problem resolution might not have been required of the students, they still hypothesized that discourse was inadequately guided or shaped to enable the completion of critical inquiry. They suggested three possible factors that may have influenced this result: course design, delivery medium, or the educational context. Garrison et al. (2001) proposed that course design might have been an
influence if the course goal was not for students to problem solve. They also questioned if the introductory nature of the content could not support higher levels of learning (problem resolution). Delivery medium was a possible second explanation. The researchers speculated high-level learning activities, like exchanging ideas and problem resolution, were more difficult to achieve online than in person. Last, they questioned if the practical inquiry model was appropriate for guiding transcript analysis. They concluded that the practical inquiry model could serve as a framework for future online critical inquiry research but that additional research on course design, delivery medium, and educational context was needed.

O’Donnell (2004) focused on the differences between shared and unshared knowledge related to higher levels of learning. Shared knowledge was information publically known to the group, where unshared knowledge was information based on the individual (previous experience, opinions, beliefs, interpretations). The primary purpose of this study was to examine the kinds of knowledge used in collaborative discourse. Students were organized into four in-person discussion groups (one first year student group and three third year student groups). All were presented a case study and asked to answer a set of questions. The discussions were recorded, transcribed, and analyzed. All group discourse included unshared knowledge however the first year students did not use the unshared knowledge to help solve the case. Students would have benefited from more deliberate, targeted questions directing them to use unshared knowledge to solve problems and answer case questions. O’Donnell (2004) found, similar to Garrison et al. (2001), that course design, specifically the structure of the discussion and the kinds of questions students were asked, influenced their depth of learning.

Frijters et al’s (2008) study looked specifically at the relationship between discourse and critical thinking. Using critical thinking variable scores, they analyzed the difference between
students’ being taught without dialogue and those with it. The results showed that students being taught with dialogue scored better, and the researchers concluded that discourse had a positive influence on critical thinking. These studies provide evidence that discourse is an element in critical inquiry. They highlight the importance of course design in improving students’ critical inquiry experience.

Critical discourse also enhances students’ conceptual understanding of content by helping them develop analytical skills and it broadens their views on a topic (Garrison & Archer, 2000; Rowles & Brigham, 2005). Erkens (2004) studied 38 pairs of students, exploring their collaborative problem solving processes. They focused on how student pairs stayed on topic, checked in with one another, negotiated disagreements, and came to conclusions. Erkens (2004) recorded and analyzed students’ talk-aloud dialogues as they engaged in collaborative problem solving. Results revealed that discourse was an essential prerequisite to students being able to reach a common goal and strategy to problem solve. Discourse can also help fill gaps in knowledge. Mroz (2015) studied critical thinking skill development through collaborative discourse. He interviewed five undergraduate students who also participated in ten 50-minute problem-solving sessions. Data from three rounds of interviews as well as observational field notes, students’ notes during problem solving, and video recordings were analyzed and triangulated. Mroz (2015) found that gaps in students’ understanding were mitigated through discourse, and consensus-building tasks promoted critical thinking. In both studies, critical discourse enabled better problem solving.

Some students have difficulty participating in discourse, however, which may explain why they have difficulty with critical thinking. de Pastoor (2005) analyzed and compared various discourse occurrences in a classroom setting and found that discourse proceeded through
iterative rounds to define a common language and terminology for a shared understanding. Without these rounds, students had difficulty participating in discourse (de Pastoor, 2005). de Pastoor (2005) concluded that learners must have adequate background knowledge of the subject and understand the rules for discussion to reach shared understanding and enable successful discourse participation.

The literature highlighted several ways in which students can learn how to participate collaboratively in critical discourse. Students’ best learn collaborative critical discourse by engaging in two activities: self-explanations and respectful disagreements. Soter et al. (2008) evaluated various classroom discussions to identify a common set of features that represent discourse supporting higher-levels of learning. They analyzed 36 transcripts from nine different discussions focusing on teacher-student and student-student interactions. They reported that students who engaged in more detailed explanations and exploratory talk achieved higher levels of critical thinking and reasoning. Students, however, need time to formulate those detailed explanations. Webb et al. (2008) investigated three teachers and how their engagement supported students’ explanations of their own thinking during collaboration. To begin, the teachers participated in two hours of professional development related to student reasoning each month for eight months. Each teacher also had a support person a half-day each week to help them focus on eliciting student explanations. Once the sessions were completed, Webb et al. (2008) video and audio taped two class sessions for each teacher. Transcripts and non-verbal participation for both teacher and students were coded and analyzed. Webb et al. (2008) found that students need time to be able to cognitively process and explain their points of view, rather than have teachers provide explanations. Collaboration does not always equate to agreement, however. Chiu (2008) found being able to politely disagree with peers was important to critical
discourse. He studied group problem solving by surveying and videotaping 80 students in an algebra class. Students were asked to complete a survey that consisted of four questions asking about the classmate preferences. Working in groups of four, the students were also asked to solve a challenging problem where several methods could be used to solve it. The group work was videotaped and transcribed. Chiu (2008) analyzed the students’ group work conversations and discovered a positive correlation between students’ tendency to disagree respectfully with one another and their ability to discover new ideas. In summary, collaborative critical discourse can be learned through different teaching strategies with some prerequisite knowledge of the topic and rules for discussion. Activities that enable respectful, focused, detailed-discussion driven by students rather than teachers will improve discourse, which in turn enables critical thinking.

**Reflection.** Like critical discourse, reflection is defined as a process. It is metacognitive, a type of cognition where students think about their own thoughts related to the situation or event being presented (Padden, 2013). Reflection is a way for students to explore their own thinking, feeling, and reasoning about both the information they already know and new information being presented to them. Mezirow (1990) stated that reflection was fundamental to the process of learning and argued that the definition of critical thinking was not valid without considering both internal (reflection) and external experiences (through critical discourse). Reflection has been found to be important for application of knowledge (Asselin, 2011; Chang & Lin, 2014) and, as presented earlier, metacognition (Akyol & Garrison, 2011a). Chang and Lin’s (2014) study supports the notion that reflection is important for deeper learning. They looked at 98 undergraduate students’ online learning experiences using reflective e-journals. Divided into two groups, one group used reflective learning e-journals while the other worked on content-related exercises. All students were interviewed and completed a questionnaire. Data from the
interviews and questionnaire, as well as performance on comprehension tests were analyzed. Chang and Lin (2014) found that the reflective e-journal group had deeper content comprehension. They concluded that the act of reflective writing resulted in students who were better prepared and organized to contribute to building new knowledge.

Reflection has been of particular interest to the nursing field where, in addition to knowledge building, it has been shown to help people integrate theory and practice (Asselin, 2011; Forneris & Peden-McAlpine, 2007). Asselin (2011) studied the experiences of ten nursing students using reflection strategies and how it affected their practice. After defining reflection and setting a foundation, students were guided through reflective class exercises and asked to keep a journal answering several prompts. During the last two weeks of the semester, students were interviewed about their experience with the reflective exercises and how it affected their clinical work. The interview transcripts and journals were coded and analyzed. Asselin (2011) found that narrative journal exercises (a form of structured reflection) facilitated changes in students’ practice, and the quality of reflection improved over time with practice. Forneris and Peden-McAlpine (2007) discovered similar results. They studied what effects reflective learning interventions had on nurses’ critical thinking skills during the first six months of practice. In a case study, six novice nurses were asked to keep a journal for six months, work with a coach for three months to help integrate critical thinking into their daily practice, and attend small group discussions for several months. Data from the interviews, discussion groups, and journals was coded and analyzed. Their study revealed that reflective strategies improved critical thinking ability and that, over time, nurses who engaged in intentional reflection improved both their thinking and their practice.
While reflection was found to improve practice and knowledge, it was sometimes challenging for students. The literature highlighted several reasons why students struggled to learn or engage in reflection. Inexperienced with reflective learning and poor facilitation/structure were the two most common factors affecting successful reflection. Colomer, Palliser, Fullana, Burriel, and Fernández (2013) found this true of the undergraduate students participating in their descriptive, exploratory study on reflective learning. Analyzing the results of a questionnaire that included questions about self-knowledge, experience to knowledge, self-reflection, and self-regulated learning, students identified a list of difficulties they had when engaging in reflection. Over one-third of the students were unaccustomed to reflective learning; many were unmotivated. Others felt unprepared and that the reflective skills required were beyond their ability. Fernández-Peña et al. (2016) surveyed 107 nursing students on their perceptions of reflective learning, and several participated in a focus group discussion. They found that while students had an overall positive experience with reflection, they expressed several challenges with the process. Similar to Colomer et. al’s (2013) findings, nearly half of the participants reported feeling unmotivated and frustration from being unfamiliar reflective learning.

Other studies highlighted the importance of instructor guidance and course support to help facilitate reflective learning. Chirema (2007) studied the experiences of nursing students using reflective journals to improve reflection and learning. Using a case study design, Chirmea (2007) coded and analyzed data from 42 journals and 17 interviews. Among the findings, support and guidance from the instructors was key. While some guidelines and exemplars were shared, students stated they needed more samples of good and bad journal writing and ongoing feedback. Creating structure was a key finding in McCarthy, Cassidy, and Tuohy’s (2013) study on nursing lecturers’ experiences with using reflection as a learning strategy. Using data from semi-
structured interviews, three themes emerged related to making student reflection successful: facilitating reflective discussions was difficult without peer support and preparation, good facilitation skills and experience was necessary for managing student interactions, and an intentional structure that supported reflective engagement was necessary. Research supports the notion that reflection can improve knowledge and practice, but students need to be provided structure and guidance from faculty educated in reflective learning.

**Summary.** The literature shows that discourse and reflection are processes that, when combined, enable students to better engage in critical inquiry. Critical discourse can help fill knowledge gaps and promote critical inquiry but discussions and questions must be properly facilitated and designed to be effective in a course. Self-explanations and respectful disagreements were two ways teachers could help facilitate critical discourse. Reflection was found to promote application of knowledge and a deeper comprehension of information. It was particularly important to the nursing field where research showed positive impacts on practice and critical thinking. Inexperience with reflection or lack of facilitation/structure within a course was found to impede students’ ability to reflect. The next section explores how faculty can effectively facilitate this learning.

**Teaching Critical Inquiry**

Unless educators have some instruction, it cannot be assumed they know what critical inquiry is or how it can be promoted through their teaching (Gul et al., 2014). In a study of 72 educators, Gul et al. (2014) looked at how professional development workshops enhanced educators’ ability to integrate critical thinking into their teaching. Using the results from pre- and post-tests and classroom observation, they found a significant increase in teachers posing higher-order questions in class after the workshops. They found that faculty had the ability to
incorporate critical thinking into curriculum, but they needed to better understand what critical thinking was and needed models and time to explore how it could be integrated. This section explores the literature on where and how critical inquiry should be taught. Course design is an important consideration for how critical inquiry should be taught and several instructional methods are identified to help promote it in the classroom.

**Context for teaching.** After reviewing the literature on critical thinking, McPeck (1990) theorized that critical thinking must be explained within a discipline because it is not a single skill that can be taught as a stand-alone course. He defined it is a combination of skills, defined differently by each discipline. Students need to understand the discipline-specific content before they can develop the skills to analyze, evaluate, or debate topics. Garrison (1991) philosophically aligned with this view, which influenced his development of the CoI framework. Swart’s (2017) recent study supports this approach. Using the CoI Model in a mixed methods approach, Swart (2017) looked at undergraduate students’ engagement in a hybrid course with critical thinking instruction. Data from a critical thinking skills test, surveys, and discussion postings was collected and analyzed. Quantitative data showed improvement in reflection and critical thinking skills. Qualitative data revealed students had a self-awareness of what critical thinking was and how it was accomplished. They said it was a process over time, and described it as deeper learning, an application and connection of ideas, and learning through personal experiences and sharing. Several factors were found to improve students’ critical thinking ability: intentionally including critical thinking definitions with instruction, explanations of how it relates to practice, and purposely connecting questions to course material and practice. Students especially appreciated how critical thinking instruction was integrated into subject-specific content.
Halpern (1999), on the other hand, believed critical thinking could be taught stand-alone, citing several successful courses on problem solving (Rubinstein & Firstenberg, 1987), analytical reasoning (Lochhead & Whimbey, 1987), and deliberate planning and monitoring (Woods, 1987). Kaya, Sen, and Kececi (2011) agreed with Halpern, arguing that critical thinking could be taught as an isolated class. They interviewed seven nursing students taking a critical thinking course to explore pre and post perspectives on their ability to think more deeply. Their findings showed that after students completed the program, they felt their skills had improved. Although their research only evaluated students’ self-assessment of abilities, Kaya et al. (2011) argued critical thinking should be taught as a separate course, emphasizing it could be more easily assessed and improved.

McKendree, Small, Stenning, and Conlon (2002) offered a different approach from McPeck (1990) and Halpern (1999). Based on a review of the literature citing both approaches were successful in improving students’ critical thinking ability, McKendree et al. (2002) conjectured that critical thinking could be taught using a mixed methodology (both directly within the discipline and as a stand-alone topic). They stated that this approach would create opportunities to practice it in an array of settings while also reinforcing the necessary critical thinking skills. They rationalized that whatever approach was chosen, it should be done to best meets the needs of the students, teachers, and environment. Their theory was not supported by empirical evidence however.

Brookfield (2012) concluded there was no single right or wrong manner to teach critical thinking. He stated that there were different intellectual viewpoints shaping how people understood critical thinking and students’ skills were focused differently depending on the discipline. Brookfield categorized these different understandings into five intellectual traditions:
“analytic philosophy and logic, natural science, pragmatism, psychoanalysis, and critical theory” (p. 32). Analytic philosophy focused on skills like recognizing logical fallacies and reasoning. Natural science was more concerned with observation and developing plausible explanations. Pragmatism, found in adult education, emphasized continuous experimentation, learning from mistakes, and discovering new information. Student experiences were central to critical thinking from the psychoanalysis perspective, commonly found in social and applied sciences. Those educators who aligned with critical theory tied critical thinking to uncovering social injustices. Brookfield (2012) stated the best way to teach critical thinking could not be prescribed because it was dependent on the discipline’s intellectual lens.

While there was no agreement across the literature about where critical inquiry should be taught, most researchers agree critical inquiry can be taught, as long as it is intentionally included (Abrami et al, 2008; Brookfield, 1987, 2012; Halpern, 2003; McPeck, 1990). Where it is included should however, as McKendree et al. (2002) suggested, align with the needs of students and faculty, and work within the constraints of a course. Stand-alone critical inquiry courses take time and may not easily integrate into a curriculum. On the other hand, critical inquiry instruction can be diluted if it is loosely embedded in subject-specific content. Assessing learners’ needs, balancing environmental constraints, and intentional design should all be considered when deciding what context to teach critical inquiry. In addition to context, course design also was found to be important for teaching critical inquiry.

**Course design approach.** Course design can affect students’ motivation to participate and engage in critical inquiry. Murray, Pérez, Geist, and Hedrick (2012) researched students’ interactions with online course materials. They found that a well-designed (active, student-centered) course not only helped students navigate through course materials, it also encouraged
them to engage more deeply with the content and kept them focused longer. Bullen (1998) explored students’ levels of active participation and critical discussion, and what factors affected them. Students reported the need for more instructor facilitation and social activities so they could engage with their peers. Time for follow-up also was needed to enable deeper discussion. These findings pointed to the importance of several improvements that could be made through enhanced course design.

Other research studies found that course design was an important consideration for learning (Garrison & Cleveland-Innes, 2005; Ke & Xie, 2009). Garrison and Cleveland-Innes (2005) analyzed questionnaire results to measure changes in learning strategies based on different levels of instructor involvement, overall interactions, and reflective assignments. They discovered that how a course was designed impacted students’ interactions and their approaches to learning. A course designed with clear expectations, opportunities for collaborative and individual activities, content at the appropriate level of challenge, and assessments aligned with course goals collectively fostered deep learning (Garrison & Cleveland-Innes, 2005).

Looking specifically at the relationship between discussion questions and deep learning, Ke and Xie (2009) discovered that while open-ended discussion questions reinforced deeper learning interactions, a combination of open-ended and closed-ended questions promoted learner satisfaction, a feeling of belonging, and an increase in self-regulated learning activity (reflection/metacognition). As this was a new finding, Ke and Xie suggested that future research should look specifically at how the design of discussion items could reinforce deep, critical learning.

Designing courses where students are actively engaged has also been found to improve learning. Many programs across higher education are now embracing a student-centered
approach in which students are engaged in demonstrating their learning. Undergraduate nursing programs traditionally have been taught through a teacher-focused approach (Lekalakala-Mokgele, 2010). This method, consisting of mainly lecture-based passive transfer of information, does not support students developing the skills necessary for critical thinking (Creedy, Horsfall, & Hand, 1992; Lekalakala-Mokgele, 2010). A study by Martyn et al. (2014) reinforced the importance of active learning for critical thinking. Their study explored the relationships between nursing students, an active learning strategy called problem-based learning, and critical thinking skills. They found a significant relationship between teaching method, students’ learning methods, and critical thinking. The strongest predictor of critical thinking was using real-world problems combined with facilitation skills for guiding students’ assessment and synthesis of the information during inquiry.

Similarly, Wangensteen, Johansson, Björkström, and Nordström (2010) hypothesized that students’ inclination to think critically were affected by how they were taught. They looked at whether newly graduated nursing students’ background information, including education, had any influence on their critical thinking abilities. Wangensteen et al. (2010) used the California Critical Thinking Disposition Inventory (CCTDI) outlining the seven aspects of critical thinking defined by Facione (1990). The seven aspects included: truth-seeking, open-mindedness, analyticity, systematicity, self-confidence, and maturity (p. 2174). Truth-seeking included actions such as asking questions or being objective. Open-mindedness meant a person was tolerant and respectful of others’ views and understood one’s own bias. When someone could anticipate potential problems or consequences they scored on the analyticity scale. Actions that were organized and focused were categorized as systematicity. Self-confidence was exhibited by confidence in one’s own reasoning. Inquisitiveness meant a person showed intellectual curiosity.
A person who had advanced critical thinking was categorized with maturity: they exhibited the ability to recognize problems as ill structured and uncertain (p. 2174). The findings revealed that the nurses were lowest on the truth-seeking scale. They scored low on the ability to assess new information and evidence to make conclusions about competing information. Wangensteen et al. (2010) hypothesized, based on previous research, that this was due to traditional teacher-centered strategies. While they did not have their own data, they cited other studies which documented that traditional and didactic teaching strategies were responsible for lower critical thinking scores (Profetto-McGrath, 2003; Ozturk, Muslu, & Dicle, 2008).

**Instructional methods.** There is no general consensus on which student-centered instructional method is best for promoting critical thinking (Tsui, 2002). The three critical inquiry teaching methods that emerged most often in the literature were: modeling, creating questions, and embedding metacognitive opportunities (Biggs, 1990; Jeffries & Norton, 2005; Pelton, 2014; Piergiovanni, 2014). Providing a combination of these types of exercises enables students to analyze assumptions and explore alternative solutions, important steps for engaging in critical thinking (Brookfield, 1987).

**Modeling.** Modeling is defined as accurately demonstrating something in a public and explicit manner (Biggs, 1990; Huang, Lindell, Jaffe, & Sullivan, 2016). It is an important instructional strategy for critical thinking (Brookfield, 2012; Lombard, 2008; Mileder, Schmidt, & Dimai, 2014) and there is a clear link between modeling and professionalism (Felstead & Springett, 2016). Myrick (2002) studied how clinical educators developed and promoted critical thinking abilities of undergraduate nursing students and found that role modeling enabled students’ critical thinking more than questioning. She also found, however, that the questions
frequently only required low-level recall rather than evaluation or judgment, which may have contributed to this finding.

Brookfield (2012) stated that faculty could model critical thinking by sharing personal examples from their own academic and professional work, or by providing context for the content by explaining why they did what they did. Huang et al. (2016), researching how healthcare faculty teach critical thinking, found that those who were successful used modeling as an instructional method to show students a path for engaging in it themselves. Faculty members used modeling to teach questioning strategies, reflection writing, or other activities. Questioning and probing also were cited as effective teaching strategies for critical thinking. Exploring the types of modeling behavior biology students are exposed to in the classroom, Partosa (2012) found that it also was beneficial to have students create models of their own thinking (drawings, concept maps, or scale models) on key concepts. The models could be used as a diagnostic tool for identifying critical thinking skills.

While modeling improved students’ critical inquiry, not all modeling was equal. Mileder et al. (2014) studied role modeling for medical students and discovered that poor, inaccurate modeling could lead to inappropriate or unethical behavior among medical students. Effective role models were professional and ethical, and consciously realized that their actions and behaviors affected students (Milder et al., 2014). Mileder et al. (2014) maintained that students’ modeling experiences could be improved by reflective practice facilitating personal awareness and professional development. Felstead and Spingett (2016) studied students’ experiences with role modeling and found that they were able to distinguish between good and poor modeling through reflective practice. The combination of modeling and reflective practice could enhance students’ critical thinking abilities. Questioning also was commonly cited in the literature.
Creating questions. Questioning is “the use of inquiry and interrogation techniques to probe a learner’s thoughts and to stimulate discussion” (Huang et al., 2016, p. 244). The questioning technique is a primary form of engagement used to start and maintain critical thinking (Huang et al., 2016). Questioning allows faculty to encourage learners to move through the critical inquiry process and find resolution. A teacher can pose questions to students, or alternatively, students can be taught to ask and answer thought-provoking questions with one another, which is sometimes referred to as reciprocal peer questioning (Halpern, 2003).

More specifically, probing questions facilitate the process of critical thinking (Huang et al., 2016). They help extend students’ thinking by encouraging them to consider their own learning and knowledge (Huang et al., 2016). Darabi et al. (2011), however, stated that not all probing questions advance discussions. They argued that the content of the probing question also was important for helping facilitate critical thinking (Darabi et al., 2011). They analyzed student discussion posts in four different scenarios: structured, scaffold, debate, and role-play. Structured threads included a series of pre-constructed detailed prompts posted by the instructor. Scaffolded threads included the instructor asking probing questions throughout the discussion. Debate was discourse created by argumentation in which students needed to construct and justify their own solutions. Role-play included students taking specific roles in the discussion. Based on the findings, Darabi et al. (2011) concluded that using probing questions, structured through these scenarios, allowed students to achieve cognitive presence and higher-level learning.

Choi, Land, and Turgeon (2005) found meaningful peer questions (those that raised interest, had personal meaning, or provided deep thought) triggered learners to reflect and question their current understandings. This type of questioning allowed peers to explain the problem and build on the thought processes of others (Huang et al., 2016). Several studies by
King (1989, 1992, 1994) reinforced the value of reciprocal peer questioning. She discovered, however, that most people did not have the skills to create and ask thought-provoking questions and that they needed to develop them. After development, competent students would, without prompting, ask questions for critical thinking (King, 1994).

The challenge with probing questions and reciprocal peer questioning is that students struggle with developing good questions or discussing issues presented in class (Profetto-McGrath, 2003). Students may not be taught how to create good questions or may not be given sufficient class opportunities to practice asking probing questions. Students in Profetto-McGrath’s (2003) study on critical thinking dispositions revealed that some faculty did not provide opportunities to ask questions. Sometimes students were even discouraged from asking questions in class. Participants perceived that their low disposition towards engaging in probing questions was due to lack of opportunity and practice. Chan (2013) cautioned, however, that teachers themselves needed to use good questioning techniques in order to facilitate students’ critical thinking. Questions could be Socratic in nature: asking for clarification, or probing for assumptions, reasons, evidence, implications, and consequences. Socratic questions also could ask for various viewpoints and perspectives. Other good prompts ask questions that build on each other for deeper investigation, or they ask higher-level questions that require evaluation, judgment or synthesis, instead of recalling facts.

Brookfield (2012) highlighted the importance of questioning by stating that the focus of critical thinking is for students to uncover assumptions and present new ideas. Castledine (2010) stressed that the foundation of critical thinking came from experience and professional knowledge of a subject. He cautioned that it would be irresponsible to assume that someone is competent at critical thinking just because he or she can ask challenging questions. It is crucial to
remember that critical inquiry is a complex process and requires more than just questioning. In addition to modeling and questioning, metacognition also was found to support critical thinking.

*Embedding metacognitive opportunities.* Metacognition is generally defined as thinking about one’s own thinking. Metacognition helps people become better thinkers and performers. Metacognitive learners understand when it is worthwhile to critique and correct decisions. They focus on incomplete or erroneous information, check for assumptions, and re-evaluate existing evidence before introducing new alternatives (Cohen, Freeman, & Wolf, 1996; Halpern, 2003). They also recognize their own preconceived ideas and notions (through metacognition) before presenting alternative solutions (Davis & Arend, 2013). Therefore, it is important that faculty integrate metacognitive opportunities into their teaching to improve student reflection and, thus critical inquiry (Davis & Arend, 2013).

Researchers recognize that metacognition is an important element for critical inquiry because it directly relates to reflection and cognitive processes (Arslan, 2015; Coutinho, Wiemer-Hastings, Skowronsiki, & Britt, 2005; Facione, 1990; Halpern, 1998; Magno, 2010). Magno (2010) investigated the influence metacognition had on critical thinking skills by having participants complete both the Metacognitive Assessment Inventory (MAI) and the Watson Glaser Critical Thinking Appraisal. The MAI measured regulation and knowledge of cognition while the Watson Glaser Critical Thinking measured critical thinking. After confirming the validity of the two models’ cross correlation, participant scores from the metacognition and critical thinking values defined in each model were compared. He discovered that there was significant correlation between the metacognitive and critical thinking factors in the models. This discovery closed a gap in the literature, which previously only linked metacognition and critical thinking through assumptions. Magno (2010) provided research-based evidence linking
metacognitive and critical thinking factors in the two models and argued that this connection explained why greater metacognition resulted in improved critical thinking. Examining the relationship between critical thinking and metacognition from a different set of criteria, Arslan (2015) analyzed the results of university students who used questionnaires to rate themselves with the critical thinking disposition scale and the metacognitive thinking scale. Results revealed a significant correlation between critical thinking dispositions and metacognitive thinking, supporting Magno’s earlier argument.

Brookfield (2012) states metacognition is one of the hardest tasks for students to accomplish as part of self-reflection. There are several ways it can be improved. Ku and Ho’s (2010) study supports the argument that the simple act of teaching students about metacognition improves critical inquiry. They examined the implementation of metacognitive strategies during the critical thinking process. They had students engage in critical thinking by solving five problem sets and one complex reasoning problem based on a controversial issue. The researchers recorded students’ metacognitive activity by having them verbalize whatever they were thinking as they solved the problems. Transcripts were coded and analyzed and the problem sets were scored. Comparing the transcript results (metacognition) with the problem set scores (critical thinking), Ku and Ho (2010) found that good critical thinkers engaged in metacognitive opportunities more than non-critical thinkers. All of the students recognized a need to plan for solving the problems, however only some followed the plan and systematically worked through a process to solve the problems. Students who did not work through the process and quickly offered conclusions scored lower on the problem sets than those who methodically worked through a plan. Ku and Ho (2010) concluded that teaching students about critical thinking is not
enough. Students also need to have a better understanding of how metacognition and their own thought processes and strategies work to improve critical thinking.

Once students understand metacognition, giving them opportunities to practice through repetition is important. Looking at students’ problem-solving decisions when deciphering a set of analytical problems, Coutinho et al. (2005) investigated metacognition during learning. They had undergraduate students complete two different cognition inventories and solve a set of problems. Students’ performance on the inventories and problems were scored and compared. Coutinho et al. (2005) found that students were better able to solve analytical problems as a result of greater metacognition, which improved over time with practice. This finding was significant because it showed that both problem-solving skills and metacognition could be improved through repetition.

Appropriate training in how to plan and evaluate specific steps to guide thinking, however, also can improve metacognition (Mytkowicz, Goss, & Steinberg, 2014; Rezvan, Ahmadi & Abedi, 2006). Pelton (2014) determined that implementing purposeful metacognitive opportunities into teaching was needed to help novice learners’ move to higher levels of learning like critical inquiry. Pelton (2014) looked at students’ learning strategies in a sociology course that clearly outlined critical thinking as an objective and included instruction on metacognition and self-regulation (the act of monitoring, planning, and evaluating one’s learning). After collecting and analyzing pre and post results from students’ self-assessment of their learning strategies during the semester, Pelton (2014) found that students reporting higher levels of self-regulation more frequently used elaboration (paraphrasing and summarizing content) and organization (clustering ideas, creating outlines) strategies to improve their study habits and understanding of the content. Maclellan and Soden (2012) studied the teaching practice of a tutor
whose students demonstrated excellent critical thinking skills on summative assessments. After collecting and analyzing data from focus group discussions, they found that embedding particular student-centered activities improved the students’ metacognition and learning. Specifically, using collaborative thinking and reasoning activities for working through problems was beneficial. Having students apply existing knowledge to various scenarios in the context of what was being taught using these strategies allowed them to work through problems, improve explanations of their own thinking, and resolve differences with peers.

Modeling, developing stimulating discussion questions, and creating metacognitive opportunities are important elements for teaching critical inquiry. These can be challenging to implement in an in-person environment and become even more complex when distance between the instructor, student, and their peers is introduced. The final section of this literature review explores how the online environment influences teaching and learning.

**How Environment Influences Teaching & Learning**

Online learning, also known as distance education, is a teaching and learning environment for developing knowledge and skills over the Internet instead of in an in-person classroom. It was originally conceived as a simple way to complete independent study and offer educational opportunities to more people (Garrison, 2009).

**No significant difference?** Several early researchers on distance education suggested there was not much difference between in-person and online learning. Clark (1983) argued that learning differences were not related to how education was delivered (in-person vs. online), but rather to the quality of instruction. Good teaching and rigorous course design, no matter the environment, would support student learning. Initial studies comparing student grades or satisfaction in the same online and in-person courses seemed to support this argument and found
no significant difference (Freeman & Capper, 1999; Johnson, Aragon, Shaik, & Plama-Rivas, 2000).

Looking at role-play as a learning strategy, Freeman and Capper (1999) compared students’ in-person course ratings with those from a web-based course. Results showed similar outcomes. Citing the web-based course a success, they noted students logged into the course multiple times a day and rated simulation (an online version of role play) as extremely useful. Johnson et al. (2000) analyzed student ratings of the instructor, course quality, structure, and support, and found the in-person course ratings were only slightly better than the online course. There was no difference between learning outcomes on final course projects, grades, or self-assessments. Russell (2001) published on the subject citing 355 research reports, summaries, and papers asserting ‘no significant difference’ between in-person and online courses. His publication supported Clark’s (1983) argument that learning outcomes were not the result of a chosen delivery medium but from pedagogical practices and good course design.

Russell’s (2001) publication was, and continues to be, controversial. In an educational report focusing on the success of online higher education, Phipps and Merisotis (1999) argued that most of the studies were misleading. They reviewed the details of the studies claiming ‘no significant difference’ and found several issues. The research did not control for extraneous variables or reactive effects (e.g. novelty effect where interest increases simply because something is different or new; John Henry effect where competition drives performance, and misrepresenting the results), participants were not randomly selected, and instruments used in some studies were not valid and reliable. Many of the studies were either opinion-based or did not include original research. Smith and Dillon (1999) also disagreed with the ‘no significant difference’ findings. They stated it was premature to argue that delivery mode did not affect
learning because the features of available technology supporting learning activities had not been adequately studied. They argued the studies needed to explain more than just which technology was chosen. The studies did not explain the rationale for why and how technology was used to support and improve student learning and motivation. In addition to questionable research methods, Smith and Dillon (1999) stated the studies were missing an understanding of online technology and the advantages or special considerations needed to improve learning. They proposed three variables should have been included: realism/bandwidth, feedback and interactivity, and learner interface. (Smith & Dillon, 1999, p. 19). Realism/bandwidth compared how instruction was presented with abstract/concrete symbols or complex/simple visuals. Feedback and interactivity examined learners’ active engagement and pacing. Interface related to differences in learner control and navigation. Several points were missed by the comparative studies. First, the online environment has unique abilities to provide educational opportunities anytime, anywhere and these were not considered in the studies. The online environment also can support content in multiple forms leading to knowledge creation in different ways.

**Interactions.** Where early research focused heavily on questioning if technology could support learning, subsequent literature began to explore the learning challenges and opportunities of online environments. Research focused specifically on key social and pedagogical considerations for improving online learning. The concept of interactions, including communication, collaboration, and active learning, was frequently cited (Moore, 1989; Thurmond, 2003; Thurmond & Wambach, 2004; Swan, 2003; Swan et al., 2000). In an editorial, Moore (1989) argued that there were three types of interactions that needed to be understood and used to improve distance education; “learner-content, learner-instructor, and learner-learner” (p.
This argument was the foundation of many online studies related to improving the learner experience. Swan et al. (2000) surveyed over 1,000 students to look at the relationships between course design elements and student views. Structure, transparency, and communication were found to be most prominent. Students recognized different factors significant to their satisfaction and learning depending on whether the course was in-person or online. For example, while achievement and class size affected students’ satisfaction and perceived learning in an in-person course, it was not significant for online students (Swan et al., 2000). While important for all learning environments, the need for structure, transparency, and communication were amplified in online environments where a course may be the only link between a student and their peers, instructor, and course materials (Swan et al., 2000).

Online and in-person environments have many parallels; both require rigorous course design and good teaching practices (Miller, 2014; Swan, 2003). Swan (2003) reviewed existing literature about online learning effectiveness and discovered there were differences in how learning occurred and was supported in online environments versus in-person (Swan, 2003).

While social learning occurred both online and in-person, there was greater inconsistency in the degree to which students felt emotionally and communally connected with their group in online courses (Gunawardena & Zittle, 1997; Rovai, 2002; Swan, 2004). Additional support and facilitation was needed online. Instructors’ activities needed to be more visible where students needed course guidance, encouragement to collaborate with one another, and reassurance they could share openly. Learning through online discussions also was different. Online discussions were more supportive of divergent thinking and experimentation when students were able to explore ideas and participate in deeper reflection, while in-person classrooms were more
conducive to convergent and scientific thinking (Parker & Gemino, 2001; Picciano, 2002; Swan, 2004).

Relatedly, learning was supported differently online when navigation and interface were factors. Difficultly navigating an online course impeded learning (Hewitt, 2003). Analyzing the discussions from five different online courses, Hewitt (2003) found that eighty to ninety percent of the students left messages unread in discussion threads. They only responded to the most recent post, which subsequently, drove the direction of future discussions. From a learning perspective, this was problematic because students moved away from important points made in earlier posts. Based on previous research, Hewitt (2003) hypothesized that the posts were unread because students did not understand the mechanics of the discussion board, leaving them unaware that the posts were abandoned. He (2003) suggested that better discussion thread organization and design would make unread posts more visible to students and improve responses.

In general, greater clarity, consistency, and ongoing assessment were needed online, and thoughtful course design and facilitation were required to provide the necessary student support (Swan, 2003). While in-person classes allowed instructors to immediately clarify meanings and students’ misconceptions in real time, it was not possible in an asynchronous online environment. Online environments, specifically, offered unique opportunities and constraints related to the process of learning through interactions with peers, teachers, and content.

**Peer interactions.** Online peer interactions were found to improve collaboration to enable critical thinking and also helped students feel less isolated (Abrahamson, 1998; Alavi, 1994; Palloff & Pratt, 2001). Swan’s (2003) review of the literature found that complimenting others,
providing peer support, asking for others’ thoughts, humor, and self-disclosure lessened the emotional and psychological distance.

Peer interactions through higher quality and quantity of online discussions also supported learning. After analyzing the results of a student satisfactory survey from over 1,400 university students in an online program, Fredericksen, Pickett, Shea, Pelz, and Swan (2000) found that those who indicated they had more interactions with other students during the course also stated greater levels of supposed learning. Picciano (2002) looked at students’ interactions and sense of presence and how it correlated to their performance in an online course. He collected data on student online participation, scores on an exam and written assignment, and survey results on overall satisfaction. In comparing measures, he found a correlation between online interactions and scores on a group writing assignment where they were required to include multiple perspectives. There was no correlation between online interactions and individual exam scores. Interactions in online discussions were found to enable multiple perspectives, exploration of new ideas, and deep reflection but were less supportive of single solution and independent work.

*Teacher interactions.* The quantity and quality of teacher interactions were found to be particularly important for online learning because there may not be in-person meetings to communicate with one another (Swan, 2003). Fredericksen et al. (2000), discussed earlier, found that interactions with teachers were the most significant factor for student’s perceived online learning. Quantity of interactions was important. Students with minimal instructor interaction felt they learned less and were less satisfied with their courses. Clear understanding of teacher-student interaction expectations, like turnaround time for feedback, was important. Jung, Choi, Lim, and Leem (2002) found that the quality of interaction (content, type of feedback) also was important for online learning. Jung et al. (2002) examined what effects peer collaboration,
content interaction, and instructor interactions had on students’ learning. Instructor interactions were based on a social context that included personal comments and feedback, or encouragement to participate. They analyzed results from student assignments, online discussions, and pre- and post-questionnaires and found that social interactions from instructors correlated more to student learning outcomes than to satisfaction. They hypothesized that these types of interactions led students to pay more attention to academic feedback and, therefore, improved the overall learning outcomes.

**Content interactions.** While the quantity and content of teacher interactions were found to improve learning, difficulty interacting with online content was found to negatively impact it (Swan, 2003). Swan (2003) recommended more support and orientation time to improve learning. Consistency and transparency in course design was found to be significant to for student satisfaction (Swan, 2001). Other researchers found course design correlated to student learning, satisfaction, and retention (Anderson & Garrison, 1995; Eastmond, 1995; Romiszowski & Chang, 1992). Anderson and Garrison (1995) studied two different online instructional design models and found courses must be intentionally planned with opportunities for interaction in order to support students’ development of critical inquiry. While course design also is important for in-person classes, online instructional decisions must be planned and purposeful because harmonious changes can be difficult to negotiate with students asynchronously.

**Interaction vs. presence.** At the same time studies on interaction were being conducted, researchers were studying the concept of ‘presence’. Picciano (2002), as mentioned earlier, was researching both simultaneously. He stated that in order for a student to feel that they belonged to or were an integral part of a course (“presence”), they needed to interact in some way; however, the act of simply interfacing with content, peers, or a teacher did not imply a student
had a sense of belonging or that they felt they were an integral part of the educational community. Picciano (2002) argued there was a distinction between “presence” and “interaction.” While a student may take action and “interact” with other students in a discussion board, they may still feel detached emotionally. They may not feel like they belong to or are part of the group, or have a deep sense of “presence.” Presence can be achieved when online courses are designed to stimulate interest, encourage group activity that supports personalized experiences and social interactions, provide space where students can safely express feelings, and learn from peer and instructor experiences. Supporting this argument, Tu and McIsaac (2002) studied students’ perception of online presence. Results from a questionnaire, interviews, direct observation, and document examination were triangulated and analyzed. They stated social presence was more complicated than originally thought. Three variables were found to be significant for social presence: interaction, social context, and online communication. Interaction focused on logistical types of elements: response time, length of messages, type of communication style, type of tasks, and size of the group. Social context was the degree in which discussions were personal and intimate. It was described to include elements such as familiarity with others, trust, informal/formal relationships, and user characteristics. Online communication included elements including characteristics of real-time conversations and online discussion boards, language and typing skills, and use of emoticons and online language to reflect tone.

The early research differentiating between interaction and presence, as well as the studies on peer, teacher, and content interactions were foundational in the development of the Community of Inquiry (CoI) framework, discussed earlier. Peer, teacher, and content interactions evolved into more complex constructs of social, teaching, and cognitive presence.
**Community of Inquiry (CoI) Presences**

The CoI (Community of Inquiry) framework was conceived through the understanding that technology must be viewed from an educational perspective. The online environment should not be evaluated by how much access to information or people it can provide, but rather how it can facilitate and enhance students’ educational experiences (Garrison & Archer, 2000). The literature review found that the three core elements of the CoI framework (social presence-community building, teaching presence and support, and cognitive presence) individually influenced students’ learning experiences and jointly improved students’ critical inquiry.

**Social presence.** Research shows that social presence and community are important factors in promoting learning and critical inquiry. Social presence is building online interactions that extend beyond email and posting grades. Research maintains that faculty need to interact with students and create a sense of presence to build a community where students feel they belong (Song, Singleton, Hill, & Koh, 2004; Yang, Tsai, Kim, Cho, & Laffey, 2006).

Peer interaction and support were found to be important to social presence. Early studies demonstrated that when students developed personal relationships with peers it helped assist in their learning (Picciano, 2002; Richardson & Swan, 2003; Rovai, 2002). Rovai (2002) looked at online graduate students’ experiences in 26 different courses to determine if there was a relationship between their sense of community and cognitive learning. He found a significant correlation between students’ perceived sense of community and perceived cognitive learning. Picciano (2002) looked specifically at the connection between student interaction in an online course and sense of presence and discovered a strong correlation between students’ sense of community and learning. Richardson and Swan (2003) studied online social presence relative to student performance and found there was a relationship between social presence, students’
professed learning, and overall satisfaction with the teacher. They argued that an increase in social presence correlated to improved student performance.

Arbaugh and Benbunan-Fich (2007) however, argued that learner to learner interactions alone did not have a meaningful consequence on cognitive learning. They examined learner to instructor, learner to learner, learner to content, and learner to system (how learners use the technologies, platforms, applications, and templates in the online course) interactions based on student and faculty perceptions. As Arbaugh and Benbunan-Fich (2007) expected, results showed that students in collaborative courses perceived higher levels of peer and system interactions. Collaboration and increased levels of peer and system interaction however did not lead to a higher sense of learning. Arbaugh and Benbunan-Fich (2007) determined that while students noticed peer interactions improved their virtual team building and online communication skills, they did not attribute these interactions to improved understanding of the content. Students felt they gained more socio-emotional support than content understanding through their peer interactions.

Lucas and Moreira (2011) looked at online students’ social construction of knowledge. They coded and analyzed the online discussions looking at five levels of knowledge construction activities: sharing and comparing information (lowest level of knowledge construction), areas of disagreement, negotiating meaning and co-construction of knowledge, evaluation and modification based co-construction, and reaching agreement and applying co-constructed knowledge (highest level of knowledge construction) (p. 156). Nearly half of all interactions were sharing and comparing information, which corresponded to the lowest level of knowledge construction, while only fifteen percent of the discussions reached the highest level of knowledge
construction to include reaching agreement and application. This finding supported the argument that increased interactions alone do not equate to greater learning.

Establishing social presence is more complex than initiating student to student interactions. As stated earlier, social presence for improved learning means students’ interests are stimulated where they are able to learn from their instructor and peers. They have personalized learning experiences, socially interact with others, and feel safe to express their feelings. They have a sense of belonging to a community of learners within their course.

**Teaching presence and support.** Most academic courses aim to improve student learning and critical thinking. This can be challenging in an online environment, where there are many influences (e.g. timeliness, isolation, communication, technology hurdles, time management/structure, and low motivation) outside of the normal classroom. There is strong evidence that teaching presence, consistent guidance, and facilitation fosters student learning online (Bullen, 1998; Hong, 2002; Paechter, Maier, & Macher, 2010; Rabe-Hemp, Woollen, & Humiston, 2009; Vonderwell, 2003).

Teaching presence is management and instruction concerned with the design and facilitation of connections across learners and content. Most research in the literature related to online teaching presence focused on instructor to student interactions that led to satisfaction, engagement, and learning. Hong (2002) looked at particular student and instructional variables and how they related to satisfaction and achievement in an online course. He found that students with positive perceptions of student to instructor interactions performed well in the course, believed the learning materials improved their grades, and were more satisfied overall with their overall learning experience. Interestingly, Hong did not find a correlation between satisfaction/learning outcomes and how students viewed interactions with other students,
activities, and conferences; teaching presence influenced course satisfaction while peer interaction did not. Similarly, Paechter, Maier, and Macher (2010) found that instructor to student interactions significantly correlated to students’ learning achievements and satisfaction. Surveying over 2,000 students at 29 different universities on which aspects of online learning they considered important, Paecher et al. (2010) stated that student perceptions of learning in the online environment improved when experienced instructors facilitated the course. Students believed the instructor’s counseling and support during the course was particularly important for their learning. Students also highlighted the importance of a well-designed course where online learning materials were appropriately constructed for collaboration and multimedia elements were carefully chosen to support learning outcomes.

Vonderwell (2003) conducted a case study to learn about the overall perspectives and experiences of undergraduate online students. The study highlighted many drawbacks: difficult collaboration, uncomfortable communications between unfamiliar students, course difficulty due to lack of one-on-one time with the instructor, and no immediate feedback. Vonderwell recommended that online faculty establish one-on-one communications and respond promptly to students. He also suggested that building student community early in a course would increase engagement and positively impact student learning. Bullen (1998) argued that timing of instructor responses (prompt and consistent) was important to helping guide students’ learning and increase engagement. He explored online participation and critical thinking collecting case study data through student interviews and posts, quantity of postings, participation rates, number of times students references other posts. The message posts were coded and analyzed for critical thinking to include clarification, assessing evidence, making value judgments, and applying strategies and tactics to guide thinking (p. 6). Students stated that consistent instructor
encouragement and validation would have improved their participation and helped guide their discussions, improving their critical thinking (Bullen, 1998). Bullen (1998) argued that the more consistently involved an instructor was in stimulating discussion, posting encouraging messages, offering guidance, and addressing individual students, the more students would participate in deeper discussions, facilitating critical thinking. These instructor actions were correlated to the increased critical thinking skills coded in the online discussion posts.

Rabe-Hemp et al. (2009) also found that instructor interactions positively correlated to student preparation, engagement, satisfaction, and higher order thinking for online students. The researchers studied student preparation for class, comparing large lecture and online courses. They made comparisons across several sources (pre and post surveys, online class discussions, and traditional discussions) looking at student engagement, interaction with peers and faculty, and learning autonomously (2009). Online and large lecture students’ grades, critical thinking, and personal/social skills were all similar. Online students, however, had significantly higher rates of student to instructor contact and independent preparation, suggesting more reflective learning. Rabe-Hemp et al. (2009) concluded that, while additional research was needed, these differences showed intentional student to instructor contact and student reflection was needed for online critical thinking.

Other research focused on the combination of teaching and social presence. Bangert (2008) maintained that students who experienced a mixture of both teaching presence and social presence had greater levels of critical thinking activity than did those students who were only exposed to social presence or those who had no teaching and social presence support. This gave credence to Vonderwell’s (2003) earlier suggestion that building social community, in addition to increased faculty interactions, would improve learning. Akyol and Garrison’s (2014) research
results reinforced the importance of teaching presence and building community. Their findings revealed that group cohesion and direct faculty instruction positively influenced students’ cognition and integration of information, but they also acknowledged this needed further study. In addition to social and teaching presence, cognitive presence also was important for student learning.

**Cognitive presence.** Research supports the idea that both teaching presence and the social element of building community impact how a student makes meaning of new information in an online environment. Cognitive presence is students’ ability to make sense of new information and develop for better understanding through reflection and discourse (Garrison et al., 2000). Critical inquiry within a collaborative community was re-defined as cognitive presence in the CoI model (Garrison et al., 2001). Cognitive presence is essentially a representation of critical thinking in which someone progresses through the steps of the practical inquiry model, as outlined in Chapter One. Cognitive presence has been found to be an important element in the educational experience and several researchers have looked at its relationship to teaching and social presence and the development of critical thinking (Bangert, 2008; Shea & Bidjerano, 2009; Shea et al., 2010).

Recent research has determined that the combination of teaching presence and social presence improves students’ cognitive presence. Bangert (2008) researched 33 online graduate students to determine what influence social and teaching presence had on cognition. He found that students posted more online responses at a higher cognitive level when both teaching and social elements were present, as opposed to one or neither. Shea and Bidjerano (2009) uncovered similar results studying 5,000 online learners’ self-reported levels of cognitive presence. Results showed greater cognitive presence when the CoI model was applied. The following year Shea et
al. (2010) analyzed nearly 1,000 discussion posts. Results again showed a relationship between the three elements (teaching, social, and cognitive) and the development of critical thinking and learning.

Additional studies (Garrison, Cleveland-Innes, & Fung (2010), Archibald (2010), Kozan & Richardson (2014), and Lee (2014)) all resulted in findings that both teaching presence/support and the social element of building community impact students’ cognitive presence. Garrison et al. (2010) explored the relationship across the three presences. Online students across two programs and 14 different courses completed a survey with questions related to each of the three presences. Factor and path analysis was used to extrapolate any relationships across the presences. Student perceptions of teaching presence were significantly related to cognitive presence. Teaching presence also was significantly related to social presence. Additionally, perceptions of social presence were significant in predicting perceptions of cognitive presence. Garrison et al. (2010) concluded that all three presences were dynamic and interconnected, having influence with each other. In a mixed-methods study, Archibald (2010) used surveys, course transcripts, and interviews to evaluate if online discussion improved learners’ knowledge and critical thinking about research. He found that both teaching and social presences were predictors of, and highly contributed to, cognitive presence. He concluded that all three elements were significantly interconnected but suggested further research was needed on what factors affect social and teaching presences’ ability to develop cognitive presence.

While individually social presence, teaching presence, and cognitive presence influence student learning in online environments, they are jointly necessary for promoting higher levels of knowledge (Akyol & Garrison, 2014; Lee, 2014; Kozan & Richardson, 2014; Shea et al., 2010). Kozan and Richardson (2014), specifically exploring the connections across the CoI elements,
found that social presence and cognitive presence were largely interdependent, while teaching presence had a very limited effect on the relationship. This finding did not align with previous studies stating social presence supported the relationship between teaching and cognitive presence (Garrison et al., 2010; Shea & Bidjerano, 2009). Kozan and Richardson (2014) suggested this could have been due to differences in measurement, analysis, or learner characteristics. They also suggested learning context could be a factor and that all needed further study.

Supporting Kozan and Richardson’s (2014) suggestion, Akyol and Garrison’s (2014) study reported that all three elements were important for learning but progressed and developed differently, based on context. They looked at how the CoI elements changed over time by analyzing online discussion posts and survey results. In social presence, emotional expression and personal sharing decreased as group cohesion increased over time. Akyol and Garrison (2014) hypothesized as the group relationship strengthen over time, the need for affective expression lessened. Looking at cognitive presence, there was an increase in knowledge integration, which was attributed to the design of the discussion questions. Less activity was found at the final phase of critical inquiry, resolution, likely because there was no explicit requirement for students to resolve anything. With respect to teaching presence, content presentation, discussion summaries, and explanatory feedback (direct instruction) increased over time, while commenting on student posts to promote discussion, encourage participation and manage climate (discourse facilitation) decreased. They hypothesized discourse facilitation decreased because students needed more support expressing their ideas at the start of the course but felt more at ease sharing over time. Direct instruction increased as students gained experience and confidence. Based on the findings, they suggested that the combination of
cognitive presence, social presence, and teaching presence should be designed and facilitated in keeping with the course goals, learner characteristics, and technological context.

Conclusion

The purpose of this review was to better understand the importance of critical inquiry and the influence online environments have on learning. Three streams of literature were closely examined: how critical inquiry (critical thinking) is learned, how it is taught, and how online environments influence teaching and learning (to include the Community of Inquiry presences). The elements of teaching and learning critical inquiry were examined to gain better insight into the possible challenges students face and to explore ways that courses could be designed to better structure and facilitate critical inquiry. Environmental influences and interactions were examined to better understand the history of online education in relation to learning and the possible impacts it may have on students’ educational experiences. Last, the Community of Inquiry’s three presences (social, teaching, and cognitive) were explored separately and interdependently. Research related to their impact on learning and their relationship with one another was examined. The three areas of literature culminate into a foundation for a better understanding of how critical inquiry can be experienced online. This study expands the literature by providing insight from online undergraduate nursing students’ perspectives. The next chapter outlines this interpretative phenomenological analysis study and details how it was conducted.
Chapter Three: Research Design

Research Methodology

This chapter describes the paradigm (constructivist-interpretivist) and methodology (interpretative phenomenological analysis) selected to explore the critical inquiry experiences of undergraduate nursing students in an online course during their first year of study. It explains why qualitative research design was the best approach for answering the research questions and provides rationale for choosing interpretative phenomenological analysis (IPA). The research population and recruitment process are described, as well as how data was collected, stored, analyzed, and validated. Finally, methods for ensuring trustworthiness are defined.

The central research question for this study was: How do undergraduate nursing students describe their first year experience with critical inquiry in an online course on nursing history and theory? Secondary research questions to further guide this study included:

1) What experiences do they describe as helpful in learning critical inquiry in this online course?

2) What experiences do they describe as a hindrance in learning critical inquiry in this online course?

These questions were explored through a qualitative research design. I chose it because a qualitative method permitted me to obtain students’ perceptions of critical inquiry, which included processes that were internal to their minds. This method enabled students to share rich narrative descriptions that detailed their beliefs and feelings about the phenomena. Quantitative research design methods were not chosen because it would reduce the data to numbers and not allow thinking processes related to critical inquiry to be captured. Quantitative data also would not allow the descriptive exploration of a person’s values and feelings.
This study was conducted using a constructivist-interpretivist perspective. Constructivist-interpretivists assert that truth is the belief held by an individual (Ponterotto, 2005). My role as researcher was to uncover the hidden meaning of each participants’ experience through dialogue (via interviews). This paradigm aligned with the research purpose and questions, where varied participant perspectives emerged based on their private reflections and individual experiences. The interactions between the participants and myself allowed for a co-construction/interpretation of knowledge or experience. While these interactions and relationships were key to co-construction and interpretation, research biases exist. Constructivist practitioners accept the existence of the researcher’s biases and positionality, and that they cannot be separated from the research process (Ponterotto, 2005). To acknowledge this, I described my biases and thoughts through journaling.

**Interpretive Phenomenological Analysis**

I chose an interpretative phenomenological analysis (IPA), which Smith, Flowers, and Larkin (2009) define as a research approach to understanding how people make sense of their experiences. IPA is not concerned with changing or fixing experiences (Smith et al., 2009). Elements of phenomenology, hermeneutics, and idiography combine to create the IPA tradition (Smith, 2011). Phenomenology underscores the experience. It is a research approach that focuses on the details of a significant event and how all of the aspects of it were experienced. Hermeneutics focuses on interpretation. IPA views humans as sense makers. In IPA, participants share their experiences, and are attempting to make sense of it. IPA researchers are engaged in double hermeneutic because they are trying to understand the participants attempting to make sense of their experience. Idiography is concerned with the detail and depth of analysis. In the context of IPA, idiography focuses on a certain event from a particular perspective in a specific
context. Using small sample sizes allows the research to focus on one participant in a particular context and then move carefully to more general claims (Smith et al., 2009).

I chose IPA for this study because the topic of critical inquiry can be complex and ambiguous. The unique elements of IPA helped define an interpretative approach to gather and analyze the data. Participants’ experiences with online critical inquiry were explored in detail and how it transpired for them was interpreted (hermeneutics). A small sample of six nursing students in a specific online course with a goal of critical thinking was selected. The phenomena was described, interpreted, and situated based on their experiences, rather than on predefined categories (Smith et al., 2009). General claims were cautiously explored (idiography) (Smith et al., 2009).

**Site and Participants**

The research population included six undergraduate students in an Accelerated Bachelor’s of Science Nursing Program (ABSN). An important clarification to make is that, unlike other undergraduate students, ABSN nursing students already hold a Bachelor’s degree in another program. Unlike other undergraduate students, ABSN students are typically older, may have limited professional experience, and have already completed four years of undergraduate college. Summarizing, they have more previous experience to influence their understanding of critical inquiry. The participants were located at a small private college in the Northeastern United States. In the ABSN program, a single hybrid online course that included a critical thinking objective was selected. While technically this was a hybrid course, the majority of coursework was completed online; there were only 12 hours of in-person class time during the 14-week course. New content, group projects, assignments, and weekly discussions were presented and completed online. The single course ensured that the students experienced and
described the same phenomena. To help avoid potential problems where data could be attached to one particular instructor, the course chosen was offered in multiple sections by several faculty members. Students were selected through convenience sampling from the multiple course sections being facilitated. Each course section was represented by at least one student.

Approval was received from both Northeastern University’s Institutional Review Board (IRB) and the college’s IRB where the research took place. Students were recruited through faculty emails and snowball sampling, where initial student participants contacted additional students who had completed the course. The primary research criterion was that all six participants had finished a specific hybrid undergraduate-nursing course during the first semester in the program. One particular course was chosen because it (a) was hybrid and (b) highlighted critical thinking as a course objective. Ensuring students had finished the hybrid course prior to the interviews allowed them time to reflect upon their experiences.

In phenomenological studies, the goal is not to have a large sample size for generalization or to problem solve, but to collect as much in-depth information from each participant as possible in order to communicate the essence of the phenomenon (Creswell, 2013; van Manen, 1990). As Creswell (2013) states, it is common for phenomenological studies to have a small number of participants as long as all of them have experienced the same phenomenon. Giorgi (2009) states there should always be at least three participants so that there will be variations in the raw data. Smith et al. (2009) state there is no one standard for the number of participants in IPA, which is more concerned with quality rather than quantity. Smith et al. (2009) suggest three to six is a reasonable sample size for an IPA study to provide a sufficient representation of the similarities and differences across participants (Smith et al., 2009).
Recruitment and Access

I began recruitment after my Doctoral Thesis Proposal (DTP) was approved and permission was obtained through my research site, their IRB, and Northeastern University’s IRB. The Associate Dean of Nursing notified the course instructors that I was conducting a study and seeking recruitment assistance. Participants were recruited directly through their course instructors at the research site. An email was sent to the course instructors asking for their assistance (See Appendix A). The instructors emailed a recruitment letter to all students who completed the specific online hybrid course in the previous Spring semester. The letter asked for volunteers to participate in the study (See Appendix B). Volunteers contacted me through my Northeastern University email.

Four participants volunteered as a result of the instructor emails. After initial contact, each participant was asked if they would be willing to contact additional students who had completed the course. This method, known as snowball sampling, was effective in obtaining two more participants. All six participants were given a $25 gift card for Amazon.com due to the amount of time they were asked to dedicate.

Protection of human subjects. There was no risk to the participants in this study. There may have been some inconvenience due to the time required to participate in the interview. To help mitigate this, each interview was held at a mutually agreed upon location, time, and date. All of the participants were 18 years or older and every effort was made to ensure that their identities remained confidential. Names were removed and pseudonyms were used to protect the anonymity of the participants and anyone they explicitly identified. Information related to faculty members and course sections were not associated with the participant.
**Obtaining informed consent.** Participants were informed through a participant recruitment letter about the purpose of the study, that participation was voluntary, and about their right to withdraw from the study at any time (See Appendix B). The interview began with me describing the consent process and then the participant signing an informed consent form that described the purpose of the study (See Appendix C). These documents met the requirements specified by the U.S. Department of Health and Human Services and the Northeastern University and research site’s IRB. There were no accrued advantages to the study participants, however it is possible that there was additional reflection about learning which may have enhanced their future online educational experiences.

**Data Collection**

Data was collected through in-depth semi-structured interviews of the participants. Interviews were appropriate for this IPA study because they allowed the participants to reflect and openly share their experiences, thoughts, and feelings about the phenomena (Smith et al., 2009). The semi-structured one-on-one interviews were informal and interactive with open-ended questions to allow participants to speak freely and expand upon their ideas (See Appendix D). An interview schedule helped prepare the content of the conversation by focusing on how students made sense of critical inquiry and their online experience. Theory-driven questions, using the Community of Inquiry (CoI) framework as a guide, also were included. This helped ensure that I acquired commentary and participant experience related to online critical inquiry development, as well as the three areas that the CoI framework identifies as instrumental to supporting online critical inquiry during the educational experience. If a participant’s response did not provide enough meaning to sufficiently address a question, probing follow-up questions were used for deeper examination of a topic. All participants were able to meet in-person.
Sessions averaged 80 minutes and were digitally recorded on two devices (an Olympus™ Voice Recorder and a smartphone application). All digital recordings were transcribed verbatim using Rev.com. Transcripts were reviewed and any necessary corrections were made. Participants were emailed their transcript within a week of their interview and asked to review it for accuracy. One participant responded after the transcript review with minor clarifying comments.

**Data Storage and Management**

All data was stored either on a password-protected, encrypted laptop or in a locked cabinet in my home. Hard copy materials, including signed informed consent forms and a printout of the pseudonyms, were kept in a locked cabinet at my private residence. All digital data, including interview transcripts, were kept separately on a password-protected, encrypted laptop. The consent forms will be kept three years and then destroyed. Only the researchers had access to the data.

**Data Analysis**

Smith et al. (2009) described the analytic process for IPA as iterative and inductive, beginning when data is first collected. While IPA does not have a single prescribed method for analyzing data, Smith et al. (2009) identified several key strategies: analyzing data line by line, categorizing emerging themes, reflecting on codes and participant meaning, and identifying connections across the themes. Employing an independent audit during the process ensured the interpretation was reasonable. All research data, from initial notes to interviews and final documentation, was organized so that anyone could follow the process and validate the research. Coded data was organized into a spreadsheet to illustrate how the data evolved from beginning (line by line analysis) to end (master themes). Lastly, documenting a detailed narrative in Chapter Four helped describe what the participants said and illustrated my analytical
interpretations of the data. This information provided a path for connecting the evidence with the claims being made.

Several systematic steps were followed to analyze the data as set forth in Smith, Flowers, and Larkin’s (2009) analysis framework:

1. Read and re-read transcript.
2. Note initial thoughts.
3. Develop emergent themes.
4. Search for connections across emergent themes and develop superordinate themes.
5. Move to the next transcript.
6. Look for patterns across interviews and identify master themes for the group.

The steps resulted in three main outcomes: participant summaries, codes and categories, and emergent themes.

**Participant summaries.** Immediately following the first semi-structured interview, I journaled interpretative information related to the conversation. Journaling occurred for each interview thereafter. The notes were expanded, written up, and edited into a document understandable by anyone (Miles, Huberman, & Saldaña, 2014). After an interview transcript was reviewed and approved by the participant, I listened to the audio recording and read the transcript. I continued to read the transcript several times and immersed myself in each participant’s experience. Participant summaries were created after each interview. Table 1 offers a summary of how data was analyzed following Smith et al’s (2009) analysis framework:
Table 1

*Analysis Outcome I: Participant Summaries*

| Step 1: Reading and re-reading | • Recorded journal notes immediately following each interview. |
|                               | • Converted journal notes to an expanded document. |
|                               | • Read hard copy transcripts that were transcribed. |
|                               | • Cleaned all identifying information. Highlighted areas in transcript that were not complete and needed further checking. |
|                               | • Listened to audio while reading transcript. Fixed any errors in the transcript. |
|                               | • Sent copies of transcripts to participants for review and revision, if necessary. |
|                               | • Made updates requested by participants. |
|                               | • Listened to audio while reading transcript again. |
|                               | • Created summaries for each participant. |
|                               | • Imported transcripts into MAX QDA. |

**Codes and categories.** The interpretative notes and transcripts were coded and analyzed using a computer program, MaxQDA (www.maxqda.com). The software did not perform actual analysis but it assisted with easy organization, coding, and comparison of the data. I began by concentrating on each transcript separately to make sure each participant’s experience was given equal weight. As I read and re-read the transcript, I recorded initial notes on my thoughts about the data and anything of interest. Initial notations concentrated line by line on the participants’ own words (in vivo). This helped to keep the analysis as close to the participants’ meaning as possible. Words and phrases in the transcript that were important to the research questions and those that re-occurred were of particular importance and highlighted. During the interviews, I engaged in analytic dialogue, checking what these phrases and words meant to me and to the participant and recorded additional notes.
Line by line the in vivo codes were analyzed and organized with exploratory comments. In keeping with Smith et al’s (2009) analysis framework, the exploratory comments were categorized as descriptive, linguistic, or conceptual. Descriptive comments highlighted what the participant said. I did not try to interpret these comments. The second category included linguistic comments, which focused on how the participant presented the information. This included laughter, tone, facial expressions, animation, etc. The final category was more interpretative. Conceptual comments focused on larger, underlying meanings of what was being communicated by the participant. Comments, connotations, and implications were questioned to discover the deeper message. Notes and memos were documented throughout. Table 2 offers a summary of how the data was analyzed during the initial noting:

Table 2

*Analysis Outcome II: Codes and Categories*

<table>
<thead>
<tr>
<th>Outcome II: Codes and Categories</th>
<th>For each transcript:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 2: Initial noting</strong></td>
<td></td>
</tr>
<tr>
<td>• Used MAX QDA for coding.</td>
<td></td>
</tr>
<tr>
<td>• Completed initial noting at a very exploratory level.</td>
<td></td>
</tr>
<tr>
<td>o Line by line recorded initial notes on the data and noted anything of interest (in vivo). To focus on the participant’s words and thoughts, I chose to use in vivo to first highlight the important points they made.</td>
<td></td>
</tr>
<tr>
<td>• In keeping with Smith et al’s (2009) analysis framework, went back to all the important points made by participants and started writing exploratory notes and comments.</td>
<td></td>
</tr>
<tr>
<td>• Notes were categorized by:</td>
<td></td>
</tr>
<tr>
<td>o Descriptive – what participant said, the topic</td>
<td></td>
</tr>
<tr>
<td>o Linguistic – how participant said it</td>
<td></td>
</tr>
<tr>
<td>o Conceptual – underlying meanings</td>
<td></td>
</tr>
<tr>
<td>• During this step, continually asked the following questions: What is happening here? What is important? What are the major things that are happening?</td>
<td></td>
</tr>
</tbody>
</table>
**Emergent themes.** The categorized data was further probed to develop emerging themes. This included a type of pattern coding where similar threads in a single transcript were identified across the exploratory notes and were sorted and re-sorted (Rubin & Rubin, 2012). Emerging patterns were grouped into a smaller number of categories/themes, causes/explanations, personal relationships, or theoretical constructs (Miles et al., 2014). The themes represented the participant’s thoughts and experiences, as well as my interpretation. Connections across the themes were considered. Table 3 offers a summary of how initial themes emerged during the data analysis:

Table 3

*Analysis Outcome III Step 3: Emergent Themes*

<table>
<thead>
<tr>
<th><strong>Outcome III: Emergent Themes</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 3:</strong> Developing emergent themes</td>
</tr>
<tr>
<td>• Reviewed the comments and notes created from the coding.</td>
</tr>
<tr>
<td>• Looked holistically at the relational descriptive/linguistic/conceptual exploratory notes and comments. Moved, as Smith et al. (2009) suggested, from what the participant said to comments about what was said. Looked for overall themes that the comments represented.</td>
</tr>
<tr>
<td>• Coded for emergent themes from the descriptive/linguistic/conceptual notes.</td>
</tr>
<tr>
<td>• Repeated the process through the entire transcript.</td>
</tr>
</tbody>
</table>

Each transcript included in vivo comments, exploratory comments/categories, and emergent themes. These were color-coded by code type in the MAXQDA program. Figure 3 is a portion of a color-coded transcript. In vivo comments were documented in gray text, linguistic comments were in blue, descriptive comments were highlighted in red, and conceptual comments were marked in green. Emergent themes were coded in orange.
Once a transcript was coded, I began to search for connections across the emergent themes and develop superordinate themes. Emergent themes were copied into a sorting program called Scapple to be analyzed and sorted using “abstraction,” as described by Smith et al. (2009). Connections were identified across emergent themes and organized into clusters. An overarching superordinate theme was created for each cluster. Superordinate themes were mapped to the interview notes and memos as much as possible to highlight important points and cross check the analysis work. This process was repeated for each individual transcript. Figure 4 is an example of several emergent themes (blue cells) and memos (red text) from Jess’ transcript re-sorted into the new superordinate theme: Critical thinking is more complex than just personal reflection.
Figure 4. Emergent themes re-sorted into a superordinate theme

After all of the transcripts were coded and categorized, all superordinate themes were moved into Scapple to be analyzed and sorted. Applying a second level of abstraction, the data was sorted and re-sorted to identify connections across all of the participants’ superordinate themes. New clusters called subthemes were created based on research relevance. The subthemes were further sorted into overarching master themes. Table 4 provides a sample of coded themes:
Table 4

*Sample of Coded Themes*

<table>
<thead>
<tr>
<th>Emergent Theme</th>
<th>Superordinate Theme</th>
<th>Master Subtheme</th>
<th>Master Theme</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peer relationships important for learning</td>
<td>Peer relationships important for safe, open learning experience</td>
<td>Knowing others makes critical inquiry easier</td>
<td>I share more when I know my peers</td>
</tr>
<tr>
<td>Instructor availability</td>
<td>Building relationships is necessary for motivation &amp; engagement</td>
<td>The instructor personally knows and engages with me</td>
<td>Good instructor relationships motivate me</td>
</tr>
<tr>
<td>Practice and experience equals better critical inquiry</td>
<td>Critical inquiry skills need to develop over time</td>
<td>I need more time</td>
<td>My skills develop gradually with authentic experience</td>
</tr>
<tr>
<td>Critical inquiry requires longer conversations over time</td>
<td>Procrastination hinders deep discussions</td>
<td>Prioritizing real conversations is difficult</td>
<td>I need to have organic conversations too</td>
</tr>
</tbody>
</table>

Summaries were created for each master theme and subtheme to address the research questions, new information uncovered, or how participants experienced particular events or defined terminology. The summaries were weighed and combined based on relevance to the research questions and frequency in which the themes emerged. Figure 5 is an example of how some of the participants’ superordinate themes (brown cells) were re-sorted into a master theme and two subthemes.
A final description of the themes related to the research questions was created and can be found in Chapter Four (Rubin & Rubin, 2012). Lastly, the evidence-based findings and generalizations, defining when and under what conditions the results of this study may apply to other situations, was proposed and can be found in Chapter Five (Rubin & Rubin, 2012). Table 5 offers a summary of how the data was coded and analyzed during the final steps:

Table 5

*Analysis Outcome III Steps 4-6: Emergent Themes*

<table>
<thead>
<tr>
<th>Outcome III: Emergent Themes continued</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 4:</strong> Searching for connections across emergent themes and developing superordinate themes</td>
</tr>
<tr>
<td>For each transcript:</td>
</tr>
<tr>
<td>• Moved all emergent themes into a software program called Scapple in order to sort them and make connections. Using “abstraction”, as described by Smith et al. (2009), looked for patterns by sorting and re-sorting similar themes.</td>
</tr>
<tr>
<td>• Identified connections across the emergent themes and organized into clusters.</td>
</tr>
<tr>
<td>• Identified an overarching superordinate theme for each cluster.</td>
</tr>
<tr>
<td>• A graphic representation emerged. Where appropriate, connections were made across superordinate and</td>
</tr>
</tbody>
</table>

---

*Figure 5. Superordinate themes re-sorted into master theme and subthemes*

---
Step 5: Moving to the next case
- Connected superordinate themes to the research questions.
- Went back to the interview notes and reviewed again.

Step 6: Looking for patterns across cases and identifying master themes for the group
After all transcripts were coded:
- Reviewed all superordinate themes from each participant.
- Moved all superordinate themes into the Scapple software for sorting and making connections.
- Applying a second level of abstraction looked for patterns by sorting and resorting similar themes across all the coded data.
- Identified connections across the superordinate themes and organized them into clusters. Weighed and combined themes based on research relevance.
- Identified overarching master themes and subthemes, where appropriate, for each cluster.
- Created a table mapping participants, emergent, superordinate, and master themes, and any subthemes.
- Returning to MAX QDA, applied new master theme coding to emergent themes.
- Created a final description of concepts and themes related to the research questions.
- Developed a composite description of the phenomenon online critical inquiry based on the descriptions of the participants.

Trustworthiness

Lincoln and Guba (1985, 1986) initially defined trustworthiness with four categories of questions related to truth-value, applicability, consistency, and neutrality. These later evolved into the following criteria: internal validity to confirm credibility, external validity to allow for transferability, reliability to ensure dependability, and objectivity to establish conformability (Lincoln & Guba, 1985). Several methods were employed to ensure trustworthiness in this study. An audit trail established conformability; member checking ensured credibility and dependability; and, rich, thick descriptions were used to address transferability.

Audit trail. To establish conformability and ensure the study was not the product of my bias and pre-conceived notions, journaling and memoing were practiced at the onset and
throughout the study. Rigor also was maintained throughout by detailing the processes within the study so that any researcher would be able to easily replicate the study, and data was stored so that it could easily be retrieved (Shenton, 2004).

**Member checks.** Lincoln and Guba (1985) stated credibility cannot happen without dependability, and a demonstration of one is sufficient evidence for the other. To establish credibility, and therefore dependability of the data, member checking was practiced (Creswell, 2013; Miles et al., 2014). Transcripts were shared with the participants. The participants had the opportunity to review their transcript and provide feedback for correction. Only one participant provided clarification to the transcript after it was shared with them.

**Rich, thick descriptions.** Transferability is the degree to which one situation also can apply to another (Lincoln & Guba, 1985). While findings for IPA studies were not intended to be generalizable, participant demographics and thick descriptions of their experiences were provided to allow readers to make judgments about transferability (Creswell, 2013). These can be found in Chapter Four.

**Study Limitations**

The aim of this interpretative phenomenological analysis was to understand the experiences of the individual participants and uncover the essence of the phenomenon of online critical inquiry development. It included participants from a very specific nursing program (ABSN). The experiences of these students may not be transferable to students in other programs given this accelerated program condenses 24 months of coursework into 18 months. Students in other programs have a lighter course load each semester giving them more time to cognitively process content and reflect. Results also may not generalize to students experiencing their first year of undergraduate studies, since first year ABSN students already hold a Bachelor’s degree.
Last, each individual participant differed in his or her past experiences (professionally, socially, academically, etc.). Participants had varying levels of previous experience with critical inquiry based on their area of study or professional positions.

**Conclusion**

The focus of this study was online critical inquiry. The study used IPA methodology to explore undergraduate nursing students’ critical inquiry experiences in a first year online course through the lens of the Community of Inquiry (CoI) framework. I used a convenience sample of six students who completed a specific online hybrid nursing course. They were recruited through instructor emails and snowball sampling. Interviews lasting 60-90 minutes were conducted and the audio recordings were transcribed. Transcripts were reviewed and validated by the participants. Using Smith et al’s analysis framework, the data was coded and analyzed resulting in five master themes (and 11 total subthemes). The next chapter includes descriptions of the participants from the semi-structured interviews and the study findings resulting from the coding procedures.
Chapter Four: Findings and Analysis

This chapter presents the findings of this interpretive phenomenological analysis study. There are three sections in this chapter. In the first section, a restatement of the study’s purpose is presented accompanied by the research questions. The second section provides a description of the participants. The final section presents the study findings organized by master themes and subthemes. The themes are discussed in detail, supported by quotations from the participants. Subsequently, I present my analysis of the findings.

Restatement of Purpose

Critical inquiry skills in nursing support evidence-based practice and patient quality of care and outcomes, yet many newly hired nurses cannot manage critical situations and compromise patient safety. The purpose of this qualitative study was to understand how undergraduate nursing students experience online critical inquiry to enable faculty to design courses that include teaching and learning strategies that improve students’ skills. This study examined the challenges and successes experienced by six undergraduate nursing students who completed a first year online course on nursing history and theory that highlighted critical thinking (a term often used interchangeably with critical inquiry) as a course objective. Common themes from the six individual experiences emerged. Together, they represent a holistic account of the shared phenomenon: online critical inquiry. The following research questions are addressed in this presentation of findings: How do undergraduate nursing students describe their first year experience with critical inquiry in an online course on nursing history and theory? Secondary research questions include:

1) What experiences do they describe as helpful in learning critical inquiry in this online course?
2) What experiences do they describe as a hindrance in learning critical inquiry in this online course?

**Description of Participants**

This section summarizes each participant’s experiences and thoughts relating to what helped or hindered their learning critical inquiry online. Participants shared their educational background, definition of critical inquiry, thoughts on the nursing program’s expectations for critical thought, and its importance. It is important to clarify that while many participants stated critical inquiry was a focus of the nursing program, only half of the participants said they experienced it in the online course under investigation. All six participants completed the same online course during their first year in the nursing program, though there were four different section instructors. All of the section instructors were represented in the study. To guarantee anonymity, pseudonyms were used in place of the section instructors’ and participants’ actual names.

**Jess.** Jess stated that she graduated with her first Bachelor’s degree in healthcare administration in 2010. All of her courses in healthcare administration were in-person; there was no online coursework. Jess did not remember critical inquiry being an important component of this program. “I think it was a lot more cut and dry, you needed to just learn the material. So it was more memorization.” After graduating, she began working at a well-known hospital as a program administrator. She worked there for about six years and then decided to go back to school and specialize in nursing.

Jess said she was required to complete a couple of prerequisite courses prior to entering the nursing program. She had a mixed experience in these. She began the first online course, microbiology, right after she graduated in 2010 but had to drop the course. Although she
believed she was a “really good student,” the course was foreign to her and she found its layout confusing. She stated, “It was terrible; it didn’t mesh well with me.” Jess believed that it was “a little too much, too soon.” She attributed her poor performance to having just completed her first Bachelor's degree and working full time in “a real grown up job.”

It took Jess a few years to feel comfortable trying online coursework again. In the Fall of 2015 she successfully completed an online psychology course. Reflecting on her first successful online experience, Jess believed that the flexible deadlines in the psychology course made a difference in her finding the right balance. She remembered that this course included casework that required some critical inquiry, but neither the design of the course nor the instructor explicitly mentioned critical inquiry as a component of the course.

Jess stated that she understood what it meant to critically think based on guidance from her clinical instructors and her personal experiences. She based critical decisions on what previously worked or did not work:

Critical thinking means that ability to reason through different, approaches, and then figuring out which one based on previous experience, or based on kind of what you think might be best, [and] figuring out the best approach… So, the ability to think, stop and actually contemplate different options or different approaches, and you analyze those different options or different approaches before you actually do something.

Jess stated that the nursing program never explicitly described or discussed what it meant to critically think. The program focused on procedural tasks, such as how to be a nurse and how to care for the whole patient. The program provided foundational knowledge, but Jess stated that experience in the field and in hospitals was where development of critical inquiry happened. Jess questioned if critical inquiry could actually be taught or if it needed to develop with experience.
She believed experience was a vital part of one’s ability to critically think. She described what that looked like:

We have to research our patients the night before, in the beginning of the semester…and you'd have to come up with your tentative nursing diagnosis and then you actually see the patient, and figure out what you thought they were going to look like is totally different from how they actually are. And how that might guide your care throughout the day.

Jess believed that she experienced critical inquiry in the online course and stressed that it was imperative to the nursing profession. Beyond nursing, she felt that critical inquiry was something of a life skill that applied to everyone. The ability to interact with others, to reflect, to make decisions, to make something better were important skills for anyone, not just nurses.

**Amanda.** Amanda received a Bachelor of Science in health policy and management in 2010. This degree was healthcare-related but non-clinical. The academic program used online support tools and Amanda was required to occasionally post assignments. The school’s use of this system was limited, however, because there were so many technical challenges.

After graduating, Amanda first worked for a large healthcare network, implementing system-wide best practices to improve quality. After two years, she moved to a well-known hospital, where she was part of a process improvement team. Her team looked for opportunities to decrease waste and improve efficiency. This was similar to her previous experience but brought her closer to the patient:

I just kept getting a little bit closer and closer to the patient and kind of always had patient care in the back of my mind and was able to work, especially at [a large, well-known hospital] with a lot of nurses first hand. Both leadership and staff and that just kind of continued to pique my interest.
This eventually inspired her to return to school and become a nurse.

Before beginning the nursing program, Amanda had to complete several prerequisite courses. All these courses, including nutrition, psychology, and microbiology, were taken online. She was hesitant about taking courses online, especially science courses. She worried about her own self-discipline to properly prepare for the course. She wondered how difficult topics would be addressed and how her questions would be answered:

I think I sometimes underestimate my self-discipline… And then we had exams online that we had by certain dates but I was a little bit nervous of kind of just, not having that forced classroom, teacher right in front of you. Will be able to tell how much work you've done, how prepared you are. And also then as questions come up, so for the more sort of science-y courses, I was thinking, sometimes I just … Hearing someone else explain the topic, you just get it a lot better than if you read it… But I think I just hadn't done a full course online, so I was just wondering would all my questions get answered and then would I get my own work done on time and be as prepared as I needed to be.

Fortunately, she had a better experience than she originally anticipated. She found recorded lectures helpful and she was able to get her questions answered after emailing her instructor or posting questions to the discussion board.

Critical inquiry was not an educational focus until she began the nursing program. There, professors would talk about how important critical inquiry skills were and provided her with the tools to critically think. Amanda was expected to come to class with enough knowledge from her assignments that she could then apply it in action. The expectation was she would comprehend the information beyond just memorizing facts and that she would be able to work with the information. Her work experience, however, enhanced her understanding and gave her the
opportunity to actually implement it. She stated, “I feel I'm just more aware of what I'm processing and learning.” Critical inquiry was experienced in clinics, and less so during classwork.

Amanda believed she experienced critical inquiry in this online course. She described critical inquiry as the distinguishing factor between a good nurse and someone who can just perform rote tasks. Amanda stated that the ability to critically think was essential to being a good nurse.

**Mary.** Mary attended a small liberal arts high school where the curriculum was heavily focused on science application, and designing and creating projects. Mary continued her education by attending a small liberal arts college and graduated in 2008 with a degree in studio art and a minor in art history. She painted and created sculpture. None of Mary’s courses were taught online because the online portal did not support much of the content and was difficult to use. She described it as “clunky.”

Mary described critical inquiry as “taking in ... multi-sensorial, multi-sourced information, synthesizing it and applying it to solve a problem.” She questioned whether “critical thinking” was different from “thinking critically.” She reasoned that her art courses were heavily focused on this skill and that they prompted her to think deeply, though it was not explicitly labeled “critical inquiry or thinking.” In these art courses, she was asked to think about what she was seeing, consider what it meant, and describe how she would put something together, and communicate this information to other people:

So, given that is my working definition then I think studio art is all about critical thinking, because I'm taking what I am observing, I'm taking subjective and objective observations, taking what I know of art history, and I'm solving a visual problem, and
that visual problem could be, how do I make this? That visual problem can also be, how do I communicate the message I want to create, so it's very much like education in trying to convey a concept or elicit a feeling from an audience not-known or unknown, so it's-it gets complex.

She described her then advisor as “really great,” who had a deep focus on critical inquiry. While she never took a course specifically on critical inquiry, she felt that it was threaded throughout her education where “audience counted.” She credited “good guides and leaders through conversations and other people along the way” with helping her to understand how to critically think. She said her own explorations and experiences enhanced her understanding of critical inquiry.

While she held an art degree, Mary was not sure exactly what she wanted to do. Eventually she found work as a coordinator of obstetrics at a medical center. Having worked in a medical center for several years, she decided nursing might be a possible career prospect. She wanted to take some of the required prerequisite courses to see if the area of study would be a good fit. One of the prerequisite courses was taught fully online and two others had online components where she was required to submit assignments. The positive experience confirmed her attraction to the nursing practice.

Mary stated the success of someone experiencing critical inquiry in the nursing program depended on the instructor and course. She did not feel she experienced critical inquiry in this particular online course. Mary felt, however, that you could not be a good nurse without critical inquiry skills. She then repeated her description of critical inquiry in her art program, connecting it to nursing:
Because when we're in the field, we'll be getting information from a variety of different senses we'll need to synthesize it and then either ask somebody for something or educate something. Either way we're going to have to communicate something to someone who's not us. And then solve problems, either for design, perform, plan an intervention, or ask for help.

Mary believed that someone who could not critically think would be considered a technician. This person could perform the tasks, but would be unable to provide the best patient care possible. The expectation was that nurses “are able to see things and apply background knowledge.” She stated, “Nursing is critical thinking” and the skill is “so important” because of the nature of the work.

**Laura.** Laura double-majored and received a Bachelor of Science in Psychology and a Bachelor of Arts in Anthropology in 2014. She described her undergraduate work as including a lot of critical inquiry because she participated in research and completed several graduate seminars. As a research assistant for two years Laura reviewed abstracts, coded and analyzed data, screened participants, and considered and discussed current research. The graduate seminars she attended specifically highlighted critical inquiry in the syllabus.

She described this critical inquiry experience as “connecting the dots… you're given some information and then having to get more from it - delve into it and then apply it.” Laura talked about critical inquiry as a process of dialogue and applying it:

And then just the process was talking about a lot. Really, you would read something and then talk about it, and we each had to develop questions and delve into why the researcher thought that, and how they got through that process, and how it applied to what we were doing.
After graduating, Laura found work at an in-patient psychiatric unit. She worked with patients assisting in their care and performing basic medical tasks. Laura worked there for about a year and a half before enrolling in the nursing program. Before Laura could begin the nursing program she had to complete some prerequisite courses at a community college. Laura had very limited online experience prior to beginning the nursing program. Only one of her previous educational experiences, a prerequisite nutrition course, was completely online.

According to Laura, the nursing program focused heavily on critical inquiry and it was stressed a lot in discussions and writings. Critical inquiry in the online course under investigation however, was not a primary focus. The program did not necessarily teach it to the students. Laura felt that the program assumed students would know what it was and how to implement it. She believed this was why some students had problems with it. While they did not explicitly state “This is critical thinking, watch me critically think,” Laura acknowledged instructors in class and the clinic would walk through the process, but there was never an explicit explanation or demonstration of the steps. She described critical inquiry in her nursing program as:

Being able to make certain decisions based on what your patients, and in school, they ask certain really open-ended questions and then, with whatever you're given, you need to be able to answer it however they want you to. I'm just trying to assemble the information into a way to understand it better.

She stated this was something that could not be done quickly. She needed time to think about the information presented to her so she could “read between the lines in that process.” Even though the online course under investigation stated critical thinking as a course goal, Laura’s experience was limited, and she stated it did not happen until towards the end.
She recounted critical inquiry as different, depending on the context. It was physically visible to her in the clinical setting. It was accomplished “in a physiological sort of way, with what we're being tested on and really understanding the process of things, like anatomically.” In didactic classes, it was not as transparent. She stated critical inquiry was focused on theory and applying it to how a nurse should be working.

Elizabeth. Elizabeth received a Bachelor's degree in Psychology with a minor in Public Health in 2013. Immediately following school, Elizabeth went right into healthcare as an aid at an inpatient psychiatry unit. For three years she worked with at-risk children (to themselves or others) for a pediatric population ages three to 19 years old. Critical inquiry was a big part of Elizabeth’s job. She described her thinking as logical (“what worked for others, what worked before”) and creative (“out of the box”):

Using the combination of logic and creativity, and, thinking what does the evidence show? And then what, how can you think outside of the box of that and combining them both to come to a problem solution. …using both skills, thinking what has worked before? What do we know is tried and true? When we're coming to a problem … What, what do we know about the situation? What has worked before? What background, what evidence, what can we bring to this, but then also not just sticking by the book and going okay, let's step outside of this, how can we think more outside the box?

Elizabeth’s work experience framed her views on critical inquiry. She knew what would potentially work based on experience, recalling that in her first year she had “no idea” what she was doing and called it “absolutely a joke.” For Elizabeth, the ideal critical inquiry occurred when many individuals’ “set of experiences” were shared. It “involves teamwork, and
unpacking, talking with people, and bouncing ideas back and forth. I don't think you can be a critical thinker without being an active listener or wanting to listen to other people.”

Before beginning the nursing program Elizabeth had to complete three prerequisite courses. She chose not to take the online course offerings. She had no experience with fully online courses and it was easier for her to “stick with what she knew.” While the nursing program she enrolled in had online courses, they were in a hybrid format where she could still physically interact with her peers and the instructor. The majority of the courses in the program, however, were taught in-person.

In the winter of 2016, Elizabeth entered the accelerated Bachelor of Science nursing program. Elizabeth believed the program was good at “fostering an environment for nursing students to start to think critically.” She appreciated the program’s goal to develop critical thinkers and would have questioned if it were not present because nursing was more than just performing skills:

You're not just taking doctor's orders, you're not just here to check vitals, make sure they're stable. You're here critically thinking, thinking okay, how can I make sure that my patient is getting the best treatment that they can? Am I advocating for them? Are there, am I critically thinking in a way that I'm consistently assessing them? I'm looking at them, I'm seeing the full picture, whether it's lab data, vitals, whatever, signs and symptoms I'm looking at them, and I'm thinking, am I missing something here?

Elizabeth stated that the ability to critically think was very important for nursing. She even said that good nurses must be critical thinkers because so much of the nursing process is critical inquiry. Elizabeth said, “You cannot provide the best treatment that is available to a patient if you're not [critical] thinking.” In her perfect critical inquiry world, she would be
mentally working through the nursing process, thinking logically and creatively, and brainstorming with other nurses. Based on her definition, Elizabeth did not feel she experienced critical inquiry in the online course under consideration.

**Katherine.** Katherine graduated in 2013 with a Bachelor of Science and pre-med studies. The courses did not provide hands-on experiences, nor did they include working with patients. Katherine did not consider critical inquiry as a component in this experience. She described it as implied and expected of her in future graduate studies, but it was never actually taught or experienced. After completing her Bachelor's degree, she was undecided what to do next. She worked for two and half years as a certified nurse’s assistant and as an emergency room technician. This experience helped her narrow her focus to nursing.

Before beginning the nursing program, Katherine completed two prerequisite courses. Both courses, completed at different schools, were fully online. Neither course included critical inquiry. “The two courses I'd taken online before had no sort of critical thinking involved. It was just you learn the information. You take tests. You have little discussions, and that's about it.” Katherine deemed critical inquiry “much more complex.” Katherine believed that critical inquiry was defined differently depending on the context. She stated that critical inquiry by nurses happened at the bedside while assessing the patient:

I had no idea beforehand how it [online critical inquiry] would work. Not from a nursing standpoint, I don't think. I think in other disciplines, you don't necessarily have to be with the patient to be critically thinking. I think for what we learn in nursing school, you should be at a bedside constantly assessing a patient to really be able to figure out what's going on and how to proceed.
Katherine felt that the nursing program had a deeper focus on critical inquiry because there were opportunities for hands-on work. “You actually get to practice it and experience it and ... I guess with all the clinicals that we've done in different settings, it's all kind of a requirement no matter where type of nursing (medical-surgery, psychiatry rotations, pediatrics, maternity, etc.).” She understood what it meant to critically think and, based on her first semester experiences in the nursing program, described it in a patient care setting as “being able to gather information, interpret that information, and kind of evaluate how to proceed in terms of patient care.”

Katherine believed critical inquiry was important, but that it also required personal experience. She stated that the non-clinical courses taught her what critical inquiry was, not how to implement it. Katherine read about other people’s critical inquiry experiences, but she was never “actually taught to do it.” She added:

Well, it's not as straightforward. It's not just information that you learn and then get tested on. It's, you have to read. We did a lot of readings, whether it was online or in the book, and then we discussed exactly what critical thinking is, and how it's used, and then other nursing experiences with critical thinking. I don't think anybody really ... We never really talked about our own experiences that I can remember.

In the non-clinical online course for this study, Katherine’s perception was that while she read about what critical inquiry was and the value of it; she did not experience it. “As you become, as you go from being a novice to an expert is how you develop that critical thinking ability.” With more knowledge and patient involvement, she would learn how to do it.

Summary. While all six participants completed the same course during the same semester, there were clear differences in how they experienced online critical inquiry. Amanda
had Professor Bond and stated she experienced online critical inquiry because she was demonstrating complex tasks beyond rote memory. Elizabeth, who had Professor Williams, stated she did not experience online critical inquiry because the coursework did not include specific tasks, including working through the nursing process or brainstorming with other nurses. There were even different perceptions within the same course sections. Jess and Katherine both had Professor Smith. While Jess believed she experienced online critical inquiry, Katherine stated she did not because she was a novice in a non-clinical course just learning how to develop her skills. Mary and Laura both had Professor Jones and also had different experiences. Mary did not feel she experienced online critical inquiry based on her definition. Laura, however, believed online critical inquiry was context dependent. She believed she experienced it in the online course, but it was accomplished in different ways from her clinical experiences.

The content of the courses was identical and the participants completed them during the same semester. Given my professional experience working with the nursing program and the instructors, I was not completely surprised that all six participants had different online critical inquiry experiences. Course evaluations, documenting student feedback varied so it was likely that their experiences related to online critical inquiry was also different. Clearly other factors were at work. Analyzing the results of the interviews revealed several possibilities.

**Master Themes and Subthemes**

The theoretical framework used for this study was the Community of Inquiry (CoI), which illustrates Akyol and Garrison’s (2014) argument that cognitive presence, social presence, and teaching presence are all significant to the development of critical inquiry. All three elements of the framework (cognitive presence, social presence, and teaching presence) were used to help explore the participants’ experiences in an online course with critical inquiry. This
comprehensive approach to exploring the participants’ experiences allowed a deeper understanding of the online critical inquiry phenomenon to emerge.

The master themes and subthemes were identified through a two-stage interpretation process (double hermeneutic). Through interviews (stage 1), the participants tried to make sense of their experience. The coding and analysis stage that followed (stage 2), uncovered the essential meanings of the participants trying to make sense of their experiences. As a result, the following master themes and subthemes emerged from the participants:

1. Context shapes my understanding
   a. My definition may be different than yours
   b. Critical inquiry is more apparent in some settings than others

2. My skills develop gradually with authentic experience
   a. I need more time
   b. I equate critical inquiry in nursing with patient care

3. Good instructor relationships motivate me
   a. The instructor personally knows and engages with me
   b. I see the instructor participate and provide support

4. I share more when I know my peers
   a. Being known and accepted by peers
   b. Knowing others makes critical inquiry easier

5. I need to have organic conversations too
   a. Prioritizing real conversations is difficult
   b. I need to feel safe to open discuss
   c. The quality of my critical discussions should be rewarded
The following sections present narrative accounts of each master theme and subtheme. Each is described in detail and supported by quotations from the participants.

**Master Theme 1: Context Shapes My Understanding**

This theme, identified by all six participants, related to differences in how critical inquiry is defined. There were two subthemes: *My definition may be different than yours* and *Critical inquiry is more apparent in some settings than others*. This section discusses each subtheme.

**Subtheme 1a: My definition may be different than yours.** While half of the participants (three of the six) stated they did not feel they experienced online critical inquiry during this course, all six were still able to articulate what critical inquiry meant to them. The participants’ descriptions of critical inquiry varied, however all described it as a complex activity that included cognitively processing information.

Katherine felt that reflection and discussion were characteristics of critical inquiry. She stated critical inquiry required more than rote memorization, it also required experience working with others:

> It was some sort of reflective project. I can't remember if it was working with the nurse or if it was just the patient experience. Which I guess does incorporate a bit of critical thinking, the reflection aspect. … And the two courses I'd taken online before had no sort of critical thinking involved. It was just you learn the information. You take tests. You have little discussions, and that's about it.

Mary also affirmed that working with others was an element of critical inquiry. She said she believed that discourse, specifically, was needed in order for online critical inquiry to occur:

> I mean, it's discourse. Critical thinking, if it's just you, it's synthesizing, so you're having a discussion with yourself, trying to ask questions and answer questions, so then if you're
new at it, having someone else to get you outside, and I learn better from the Socratic kind of method anyway, so that discourse is really key for me - to say something, be saying it out loud.

Mary had experienced critical inquiry, as she understood it, in another online class at the same time she was enrolled in the course under investigation. There was some frustration because her expectations of critical inquiry did not align with this online course.

Elizabeth related that critical inquiry to problem solving as she reflected on what the concept meant to her. She believed a challenging situation or issue needed to be part of the critical inquiry process:

I kind of go back and forth in that because, to be honest, a lot of the time when I think of critical thinking, I think of problem solving, I think of we have an issue, how are we going to get through this problem?

Here Elizabeth described her uncertainty with what critical inquiry meant. She went “back and forth” possibly looking for the ‘right' approach or meaning used for this course. She continued:

How are we, and then critical thinking is that process that leads us to any answer, multiple answers, kind of a brainstorming way. I don't think that [this online course] does that. There's not as clear a problem, there's not a clear issue. What we're doing there is we're discussing theory, why it's essential to you and your nursing practice, and how to make you a better nurse.

Elizabeth said that there was an element of creativity and urgency associated with critical inquiry. Using personal experiences also was included in her definition:

You're a lot of them are based on evidence that's provided, which I defined as critical thinking, and pulling from my own experience, which I really think is part of that critical
thinking as well...That, or even for me, when I do critical thinking I feel a lot of it comes into some sort of, and maybe this is just because of my experience, but some sort of pressure there. There's some sort of stakes... [This course] is theory but I think it is a different type of thinking. I don't think it's the creative type of thinking, which I really do believe is so essential to critical thinking.

Elizabeth connected her personal experiences to evidence needed for critical inquiry. She implied that this was an important piece of information missing in her online course experience, making critical inquiry difficult. Similar to Elizabeth’s association with problem solving, Laura used detective work as an analogy to describe critical inquiry. She observed that “critical thinking is kind of like detective work, you're really looking at something and trying to figure it out and it's hard to do if you're not, if you're just given a chapter to read.” It seemed there was an ongoing disconnect between how the participants described critical inquiry and how it was designed in the online course.

Critical inquiry also was described as a process that included various actions, such as assessing, prioritizing, implementing, and applying. Katherine stated, “We're taught the nursing process which kind of goes in a little bit to critical thinking 'cause it is that process of assessing, and gathering information, and interpreting it.” Katherine seemed confused. Her definition was based on a process taught by the program but it was not evident in this online course. She used the program’s definition and applied it to the course, but had limited results. Elizabeth walked through a similar process definition that included assessing, prioritizing, managing the situation, and making a decision by describing a scenario:

The first step is assessing, and that you can't just look and observe, you have to think, okay, what, I'm going to look at a sick person or a patient in a situation. I have to
prioritize what am I looking at? Thinking what's important here? There's so many
different steps there that you can't just know. You have to think about what is important
when, especially as a nurse there's, there's so many things going on at once, whether it's
you have two or three patients or four patients, or whatever the unit is.

Amanda had a similar view to Elizabeth’s. She stated that being presented with a situation, and
highlighted analysis and prioritization as required skills. She also questioned if her definition was
correct, prefacing that this was her own definition:

The way I think of critical thinking, don't know if this is right or not, but you're in a
situation ... So, I guess I'm kind of thinking of a nursing situation. You're presented with a
variety of information. So, say it's a patient in front of you. You have certain data on the
patient. You have certain individual personality characteristics, family, and you sort of
need to analyze all of that in order to act appropriately. So, I feel with nursing, a big thing
that we're learning is prioritizing care. And so being able to look at multiple data sets, I
guess you could say. Understand what the data mean and then how they influence my
behavior. What I, how I treat the patient, what questions I need to ask of other clinicians
or the family. So, kind of on the spot thinking and then directing my actions based on
that.

Amanda’s confusion was likely linked to discrepancy in what she was learning in the nursing
program and what was happening in the online course. She could not reconcile these
experiences.

Jess viewed critical inquiry as a process. She indicated previous experiences or
knowledge might influence how decisions are made during this process. She stated, “Critical
thinking means that ability to reason through different, approaches, and then figuring out which
one based on previous experience or based on kind of what you think might be best, figuring out the best approach.” Again, a participant was expecting learning in the online course to include their previous experiences to support critical inquiry. Laura explained that the process was like connecting the dots, diving deep into the information, and then applying it to the situation. She stressed the idea of really needing to understand the information in order to apply it:

I think it's trying to connect the dots. So, you're given some information and then having to get more from it... and delve into it and then apply it. ... You really have to know something to understand it, and then apply it.

Overall, the participants’ descriptions of critical inquiry ranged from individual reflective work, discourse, working with others, to problem solving. While there was some slight overlap in how participants described critical inquiry, it was mostly defined by personal experiences, with little consistency in its meaning or how it was experienced. Personal experiences seemed most meaningful, suggesting that these occurrences influenced how participants perceived and defined online critical inquiry.

**Subtheme 1b: Critical inquiry is more apparent in some settings than others.** Five of the six participants suggested that critical inquiry was experienced differently, depending on the context or discipline in which it was happening. Some equated the nursing discipline as critical inquiry, while other participants experienced critical inquiry differently depending on the setting, even within nursing.

Elizabeth, Katherine, and Mary all believed that critical inquiry was foundational to the nursing discipline. Katherine said, “No matter what type of nursing you are in, whether it's med surg [medical surgery nursing is commonly referred to by nursing students as “med surg”] or if
it's ... We've done psychology rotations, pediatrics, or maternity - critical thinking is always required.” Elizabeth stated that one cannot be a good nurse without the ability to critically think:

There's a crisis on the unit, you can't just dive in straight through without some sort of critical thinking, okay this is our plan, this is what's going to happen, this is our action because there are codes and crisis even on the inpatient psych unit…You can't go into this program not thinking, not having a critical, a sense of critical thinking. You're not going to be a good nurse that way.

Elizabeth suggested that just because she had not experienced critical inquiry, did not necessarily mean she did not know what it was. There were underlying factors that made critical inquiry challenging. Mary’s comments were similar to Elizabeth’s. She stated that nursing required more skill than that required of a technician, and there was an expectation to being able to critically think:

Nursing is critical thinking ... they've told us it is, and I'm starting to get that it is and see the ways in which it is. Very much so. You can-you can be a technician, you can go do stuff, but-you won't be doing your patient the best-I don't know that you can be a nurse without it, I just feel the expectation is that you're able to see things ... and apply background knowledge to something that's not…I don’t know. I think it's necessary.

Mary and Elizabeth both suggested there was an expectation that nursing students can define and participate in critical inquiry. While they acknowledged this skill was important, the participants also shared that context was just as important.

Some participants viewed differences not only across disciplines, but across contexts. Laura felt that critical inquiry was experienced differently in the classroom versus a clinical setting:
I think it's definitely more visible in the clinical setting. It's kind of difficult in class sometimes. I mean, our main classes you can critically think in a physiological sort of way, with what we're being tested on and really, understanding the process of things, like anatomically. Then in the kind of other classes we're taking, like ethics and [this online course], it's really looking at theory and thinking about how it applies to what we're doing or should be doing.

Laura was saying that the critical inquiry that occurred in the course under investigation was hidden and needed to be more obvious. She stated that other classes – the main classes – made critical inquiry “more visible” helping her understand the process of things. She continued:

So, it's different throughout everything we're doing…I think it happens across the board, just in different ways. I mean, it's going to be different in the clinical setting than it is in a class where we're reading a lot and then another class about real medical stuff.

Amanda attributed different places (an office workplace and a patient’s room) to various critical inquiry experiences. She also recognized the skills of working under pressure and the need for swift responses as related to critical inquiry:

And I think I'm probably a little bit more aware of it having worked, too, and kind of understanding, being on the spot and using information I've learned in the past, and skills, and so then coming back to a program, I feel I'm just more aware of what I'm processing and learning… I think it's clearer when I think of it in terms of walking into a patient's room and just having so much information right in front of you, and the patient where you don't have time to go into a back room, make sense of it all. Take two hours and okay now I have a plan.
Amanda connected working under pressure, like in a patient setting, with the critical inquiry process. When sense of urgency was absent in a class situation, it did not feel like critical inquiry:

I feel now I think of critical thinking much more on your feet…Which I did have a lot of my job in process improvement was working with people, and being in a room where there might be people who are disagreeing, and so I was thinking on my feet of, okay, how can I lead this conversation in a different way?

To review, participants experienced critical inquiry in various ways. Several viewed critical inquiry as the foundation of the nursing discipline. Descriptions of critical inquiry differed, depending on the context. One participant stated it was different in classroom settings than in the clinic. Classroom experiences were more theoretical where one would think about how to use critical inquiry skills. Clinical situations were more functional and process-oriented. Several described critical inquiry in the context of a critical patient situation where time was not a luxury. Urgency was a differentiating characteristic in these two contexts.

**Summary.** All six participants provided definitions of critical inquiry that were based upon their own perceptions through their personal experiences in education, work, and other settings. The online course offered reflection and discourse activities, highlighted as critical inquiry by two participants, while other participants focused more on problem solving and being in a high stakes environment, something the online course did not offer. Different experiences led to different interpretations in how they defined critical inquiry and understanding this may help guide how to teach critical inquiry skills in online courses.
Master Theme 2: My Skills Develop Gradually with Authentic Experience

This theme, identified by four of the six participants, related to how critical inquiry skills improve over time with patient-centered experiences. There were two subthemes: I need more time and I equate critical inquiry in nursing with patient care. This section discusses each subtheme.

Subtheme 2a: I need more time. Katherine, Amanda, and Elizabeth described how developing expertise in the discipline coincided with improved critical inquiry skills. The participants described foundational knowledge as a way to construct better critical inquiry through real world applications. More information, practice, and experience provided for better critical inquiry.

When Katherine was asked about the nursing program’s expectation that students be able to critically inquire, she stated, “I think it's pretty important, and it's a concept that's important to grasp, but I think it also comes with experience.” Katherine was then asked what was it about experience that improved critical inquiry skills:

Trying to think of the best way to put it. The book we had for this course was the whole, the novice, was it novice to expert? And, that's the only point where we really covered any sort of critical thinking. It's as you become, as you go from being a novice to an expert is how you develop that critical thinking ability.

In other words, Katherine believed that the program’s expectation was that her critical inquiry ability would progress as she moved through her courses. The course under investigation was in the first semester so logically, in Katherine’s mind, critical inquiry could not be successfully achieved so early. Katherine felt that being able to participate in critical inquiry during the first
semester was “a little unreasonable.” Understanding nursing principles versus applying them were two different things:

It's hard to really think of how you can incorporate it into that type of course. I think the expectation to actually BE critically thinking, I think might be a little unreasonable. I think understanding the concept of critical thinking is reasonable. We never ... We didn't do anything to practice it. [I am] trying to think of how we could have, because you're not with patients. But I guess if you're reflecting upon patient situations. Maybe more reflection because we only read about so many cases. It wasn't a focus.

Katherine tried to imagine where critical inquiry could have been integrated into her coursework. She was challenged by this thought because first semester students have limited exposure to patients and foundational knowledge. While Katherine said that it was too early to expect students to apply critical inquiry, she did feel the course had its value as a foundation to build towards it. Students first need to understand the role of nursing and then over time, they can begin to apply that knowledge to their practice:

I think it's a good course to have during the first semester, because it's a good foundation for you to build on. Once you understand what exactly the role of nursing is and what the profession is and what it has been through the ages, how it's evolved. I think it affects your own practice, and it kind of helps you build on that with the courses that come in second semester and third semester.

Like Katherine, Amanda also referred to the concept of novice to expert. When asked about her experience with online critical inquiry, she talked about discussion posts and described an assignment interviewing a nurse. The assignment focused on different levels of nursing expertise. Amanda described how students were “pre-novice,” and over time become experts:
Yes, there were discussions posts, and then I remember we had to interview a nurse and interview a patient to kind of understand for the nurse how they got to where they are today. And a lot of it had to do with understanding the different levels of experience of a nurse. One of the books was novice to expert and we could understand that we're not even novice, we're pre-novice. But, how you build to become more of an expert in the field.

Amanda essentially stated her critical inquiry competency was “pre-novice”. She needed time to grow as a professional to successfully participate in critical inquiry. Higher expectations did not align with what she was reading.

Elizabeth also attributed time and experience to critical inquiry. She stated critical inquiry was informed not only by her own experience and knowledge, but also from other people who have many years of practice in the nursing field. Elizabeth believed that an increase in exposure to nursing situations over time enabled her to better critically inquire. She described her thinking in a situation where she applied critical inquiry:

De-escalation tactics work, they work. We know how to keep ourselves safe, we know how to talk to kids one-on-one, we know how to get them, we know what works. But, at the same time, what works for one kid might not work for another, and I have to try to think creatively, can I make a joke in this instance? Are they going to start to laugh? Is that going to piss them off more? And so, you're thinking more of can I distract them? Can I do I have to start thinking about backup plans? Do I need to start calling security? Do I need to call code? So, you're kind of going, toggling back and forth between what do we know works? How do we get the best situation, the best scenario for this kid?
When Elizabeth was asked how she knows what works, she underscored experience as an essential element of critical inquiry. “Experience, experience. It's experience. I mean my first year there or working there was absolutely a joke. I was like what are we doing? I have no idea.”

Elizabeth compared her first year on the job with her first semester in the course under study. She seemed annoyed by the course expectations because she was not experienced enough. She had the ability to learn critical inquiry but needed more time to practice and build experience.

Elizabeth further clarified it was experience across people that improved critical inquiry:

> Part of it I think is [my] experience and then I do respect people who are new to the situation, who don't have the same experience as me, they bring a new set of experiences. So, for me to have sit there and be okay, so I'm thinking about a situation this way. I think critical thinking absolutely involves teamwork, and it involves unpacking, talking with people, bouncing ideas back and forth on one another so. What is experience in something that I know, someone can have a totally different experience and bring that in and then I have to think about, okay but is that going to work in this situation? Do we try it? Do we trouble shoot it?

Elizabeth recognized that everyone came to the course with different experiences. She needed time however to synthesize what was being shared by others to compare with her own understanding. As a novice or pre-novice, this was a new skill.

All three participants attributed critical inquiry skills to years of knowledge and experience. New nursing students were considered pre-novice with little to no experience or knowledge; Katherine even stated that a new nursing student in this online course should be expected to only understand the concept of critical inquiry, not to participate in it. Participants said that as students built knowledge and experience over time, they moved into a novice level,
not only with their nursing skills but with their critical inquiry ability as well. Time to develop knowledge and experience was needed for critical inquiry, and that was difficult to do in a first-year online course.

**Subtheme 2b: I equate critical inquiry in nursing with patient care.** Katherine, Elizabeth, and Jess all described patient work as a necessary context for critical inquiry. According to their understanding of critical inquiry, it was difficult to achieve if it was not connected with some type of patient work.

Katherine prefaced her description of critical inquiry by first situating it within a patient context. Her definition was related to how she worked with a patient. Katherine said, “When I think of critical thinking, I guess what comes to mind is in the patient care setting -- being able to gather information, interpret that information, and kind of evaluate how to proceed in terms of patient care.” She said that critical inquiry in nursing included patients. When asked what she expected online critical inquiry to look like she stated:

I had no idea beforehand how it would work. Not from a nursing standpoint, I don't think. I think in other disciplines, you don't necessarily have to be with the patient to be critically thinking. I think for what we learn in nursing school, you should be at a bedside constantly assessing a patient to really be able to figure out what's going on and how to proceed...I guess I was uncertain about how critical thinking would be incorporated into the course and how it would be executed, but I mean, it's a topic that's touched upon, but it wasn't the focus.

Katherine seemed confused that the course of study had a goal of critical inquiry. She had earlier stated that critical inquiry was “unreasonable” so early in the program. By stating it was not “the
focus”, she was suggesting that the design of the course was insufficient or incorrect; not students’ lack of proficiency to meet the goal. She continued:

I don't think we actually actively critically thought until our second med[ical] surg[ery] class. We definitely talked about it and discussed it, but I don't think I would say I learned how to critically think from the course. I think I only had a better understanding of what critical thinking was and the expectation of what critical thinking was in nursing. By comparing this course to her second med surg course, Katherine had circled back to the idea that expectations for critical inquiry were too soon for this first semester course. She also felt that she only experienced critical inquiry when she was actually doing something with patients. When asked to further elaborate on what she meant she stated:

I don't really feel like I was doing it. As understanding it better, but I wasn't doing it I would say… I don't know, I guess it's because it's not an application sort of course. I guess, I thought of [this course] as a course for you to fully understand what the nursing profession is, through the ages and what it means, and the value of it and the expectations of you as a nurse.

Katherine was clearly confused by the stated course goal and her definition of critical inquiry. There were clear discrepancies between her understanding and what she experienced in the course. She tried to delineate between them:

We learned the ins and outs of what it means to be a nurse, but I don't think you're really taught how to be a nurse or how to critically think in that course. It was more in the med[ical] surg[ery] courses. So, for [this course], you read about these other nurses' experiences and how they've used critical thinking and what their experiences were.
Whereas in med surg, you're given all the skills to critically think and then in clinical you’re expected to actually do it.

Elizabeth also experienced critical inquiry when she was with patients. She stated, “I'm thinking, my critical thinking process, my assessing when it is usually sometimes with an actual patient, and an actual scenario that is happening.” She explained this online course was focused more on historical information rather than real application of critical inquiry skills:

Part of it was because your focus, once again your focus isn't on the first semester in general. It's not on [this online course]. You care less about the founding mothers, [what] they're saying in theory and the different theories. I guess in my own head I already had a liberal arts degree. I have already spent time looking at psychologists, psychologist theory, which probably helped me in this course and in [college] in general, but I have spent more classes doing, discussing [theory].

Elizabeth was disappointed in this course because the format was too familiar. She expected something new and exciting related to patient care. She wanted to actively engage in critical inquiry but her definition and the course’s approach did not seem to match. She continued to explain:

Your focus is getting, I want kind of the nitty-gritty, how do I get to be a nurse? I feel that, you're [asking] how do I get these skills? What do I, what knowledge do I need to know? Your focus isn't on the theory that helps you get there.

Jess better understood critical inquiry through her work with clinical nurses as opposed to class time with her academic instructors. She stated, “I would credit my actual nurse instructors the most with driving home what critical thinking is.” Jess intentionally distinguished between
her nurse instructors and her classroom instructors. When Jess was asked if the nursing program talked about or reviewed what critical inquiry meant she answered:

Not that, not that I can think of, really. I think the majority of our courses are just how to be a nurse, and how to take care of a patient. Procedural stuff ... I mean we're definitely being trained to address the whole patient, that the basis of nursing is taking care of the whole patient. I don't know. I think that may be something that we know we have to develop, but I don't know if it's something you can always teach, really.

Jess explained that working with practicing nurses helped her with critical inquiry. She believed that more time spent with patients, as opposed to just talking about critical inquiry in class, meant better critical inquiry. Experienced nurses had more practice working with patients than she did:

Experience. I think we're laying the groundwork now. We're in the hospitals, we're realizing that things aren't always cut and dry, that we need to reflect on previous experience but ... I mean my previous experience is, what, maybe a dozen patients?

Jess recognized the importance of reflection and previous experience however did not feel confident in her critical inquiry skills because she lacked exposure to patients. She continued:

And, the nurse with 25 years of experience is, I can’t even imagine? 365 patients, times 25 years? I don’t know, maybe it’s just because with nursing you get better with experience. So, there’s this huge push to get all nurses to have their BSN, so you can have a nurse with who’s an RN who has 25 years of experience, but for some reason they would hire a new grad BSN over her. And to me, that’s a terrible idea.
Jess highlighted that a degree did not signify expertise. She worried what that would mean for the nursing practice and for herself professionally as a novice nurse in the field trying to learn from other more experienced nurses:

I think that the nurse with 25 years of experience has way more knowledge than I do, and I think that is because of the ability to critically think.

Jess suggested the coursework did not really build her critical inquiry skills. She explained that it is not really happening until it is applied or put into action with a patient:

I think because with critical thinking you’re- it's really internal. So, I learn and I read about the body systems and how to address someone who's in respiratory distress but it's not going to actually, in the setting and actually having to think … I can't go look at my textbook or go look something up.

Jess suggested that inauthentic experiences did not support critical inquiry skill development. She seemed to suggest that the design of the course under investigation did not have enough authentic opportunities to support critical inquiry. She continued:

So, I think it's- that's why it's probably lowest is because you don't actually put that [critical] thought into action until you're at the bedside or in an actual situation.

To conclude, Katherine, Elizabeth, and Jess all attributed critical inquiry skills to patient work. Katherine struggled to understand how critical inquiry would work online because she believed that patients needed to be a part of the process. Elizabeth stated that while the information in the online course helped move her towards critical inquiry, it did not focus on the “nitty gritty” of being a nurse. Jess’ beliefs were formed based on previous experiences where when she better understood critical inquiry while working with her nursing instructor in the field.
Based on their experiences, the online course did little to support patient work and, therefore, did little to support critical inquiry.

**Summary.** Four of the six participants described critical inquiry skills as developing over time with foundational knowledge and authentic experiences. Amanda, Katherine, and Elizabeth explained that nursing students develop better critical inquiry skills as they acquire more information and experience in the field. Katherine, Jess, and Elizabeth believed that working with patients improved their ability to critically inquire. Katherine stated she was engaged in critical inquiry only if she were working within the context of patients. If it was not patient work, she could understand it and talk about it, but she could not apply it. Over time, experience within a patient context, combined with their foundational knowledge, would help them to develop critical inquiry skills. This implies that online critical inquiry may be too challenging, or even unachievable, if it is incorporated into a course or program without ensuring students understand how it connects to the course material and their foundational knowledge.

**Master Theme 3: Good Instructor Relationships Motivate Me**

To the extent it was happening in the course under investigation, all six participants described how their instructors’ actions influenced their participation in online critical inquiry. There were two subthemes: *The instructor personally knows and engages with me* and *I see the instructor participate and provide support*. This section discusses each subtheme.

**Subtheme 3a: The instructor personally knows and engages with me.** Elizabeth, Katherine, and Laura said that it was important for instructors to personalize interactions with students and establish a rapport. Participants stated these interactions increased their motivation and engagement, supporting critical inquiry efforts.
Elizabeth explained that while she knew her instructor was reading her posts and providing feedback, she did not experience critical inquiry. When asked what she thought may have affected her experience, she stated lack of rapport with her instructor:

[In other] hybrid courses where we have some part online and some part in person, I was more apt to, I feel I had more rapport with someone. I was more willing to participate, I was more willing to be more candid with my responses, more frank and more like off the cuff with them…

Elizabeth and the instructor did not have a personal connection. Elizabeth felt she had to be cautious with her responses; she did not want her posts to be misinterpreted. She continued:

I don't know if it's trust per se, but like you know when you open up, when you develop a rapport, you start to get to know each other, which is I think what [the professor] wanted us to be like, you are my colleagues, you are my peers, you're not just my students, and that's really hard to do when you meet someone four times. Because even if, in her head, she's getting [to know me], [it was] one sided. Because I was like –do you know who I am? She knew our names but to me it was not the same as being in a small group and being in person.

Knowing Elizabeth’s name was not enough. She also wanted to be known as an individual with experiences, likes, and dislikes.

Katherine stated one way her instructor engaged with her was through the discussions boards. She also attributed her instructor-student relationship to in-person meetings:

I think she got to know all of us pretty well because she participated in all the online discussion and the in-class discussions… I guess it's from more being in class, and she knows everybody's names. And she knows a little bit about everybody.
Katherine felt a connection with her instructor. She appreciated her instructor’s engagement. Not only did the instructor participate in the coursework but she also took the time to learn about the individual students. Katherine continued:

We worked with her a lot during our final projects because it was an art project. So, we had to kind of work with her to figure out what would work, what's not going to work. So, I think that kind of forced us just to discuss more about ourselves with her, and because it's an expressive project. So, I mean that's how I got to know her pretty well I think.

Katherine’s instructor also used email fairly consistently to engage with students. The instructor would email weekly updates and sometimes included additional articles or information to share. The instructor communications were some of the best experiences for Katherine:

I think with a lot of online courses, it's easy to forget about them [instructors] and feel really disconnected to them. But she emailed us almost, probably weekly to update us and made sure we knew what was due, and what was going on. And even interesting articles she's found. Stuff like that. She kept in touch with us throughout the whole semester, so it didn't really feel so detached like most online courses…

Katherine recognized that past online instructors were not always engaged. She respected her instructor for her communication efforts and valued the extra steps to share information.

I guess it made you more mindful of that expectation that, in nursing, you should keep up with what's going on and news and things like that. I think that was a big aspect of the course that she kind of incorporated in…I think, her emails also help you kind of keep up with the course, because you forget. I guess she ... I don't know. I just liked having the emails. That was probably one of the better parts of the course.
Katherine suggested that her best experience in the course was attributed to her instructor’s engagement. She said that being “connected,” or having a relationship with the instructor, was important for her learning. She also was more motivated to listen because of this:

I think that's important as far as your relationship with your instructor, how comfortable you feel with asking questions and I guess, getting advice and things like that with the professor. I think having a closer relationship in general with your professor makes it a little easier to learn. I think it makes you a little more willing to listen.

Katherine stated that being comfortable with her instructor and peers increased her motivation to participate. When she participated she was able to learn more about her peers and instructors. This indirectly supported critical inquiry, where more participation led to more sharing and knowledge building. She stated, “I mean, I can't remember all the discussions. For minimum requirements, one post is all that's required of you.” Katherine highlighted the discussion requirement. This was important to note because many participants only felt compelled to meet the posting requirement. She continued:

But if I was interested in a topic or it stemmed into a discussion that was interesting because I felt comfortable with my classmates and my professor, then I would [write] multiple posts.

Katherine needed something intrinsic to motivate her online participation. She posted beyond the requirement if two conditions were personalized for her. She needed first, the topic to peak her interest and second, to feel at ease with her peers and instructor. She continued:

Because it would stem into a conversation. It happened a few times. I'd say it happened more so than most online courses…In this specific course, you learn a lot about what each person thinks is important to nursing because we focused so much on what is
nursing and what is your role. And I think everybody kind of has a little bit of a different view on that. I guess you kind of learn each other's values.

Katherine felt that hearing everyone’s values and ideas were important for getting to know each other. The instructor recognized this by sharing her own views:

She [the instructor] kind of shares her points of views and her values. And you realize what you agree with and what you disagree with, because in the end, she's a nurse too, so she has her own views.

Laura believed that when her instructor set up discussions where students could share personal information it helped with critical inquiry. The instructor would tell them what kinds of information to share to support their discussions:

I think it basically was just not really group work, but just telling us the kind of the things she wanted us to include. Then we just went from there. And I think we also talked about it in class too, but at that point I could say, "Oh, I didn't know you worked at that hospital," because you told me online. I thought that was kind of a cool way of meeting people. It was a nice class to do that in.

Laura also liked how her instructor would communicate to her on a more personal level. She would address her by name and recognize her work contributions. She stated, “So, then everyone was responding to those [online discussions] so it was lots of threads and it was kind of confusing.” Laura highlighted how the discussion threads by themselves were confusing. She then began talking about her instructor’s engagement with their coursework. This implied that online discussions alone did not support critical inquiry. Instructor guidance and engagement was also needed:
I think she [the instructor] might have responded to some of them, if she wanted a little more information but she definitely read them. She viewed our Google Docs as we were working on it. We had to give her the link to it so she would look and say, "Laura, you've typed the whole thing. Where is the rest of your group?" which was pretty nice because I did type the whole thing and she recognized that I was working hard… it was kind of nice to know that ... It's as if you're in a classroom and the teacher comes and looks over your shoulder to see what you're doing. Because you need to pull your weight and that includes the whole critical thinking component of it.

Elizabeth, Katherine, and Laura said that instructor engagement improved critical inquiry experiences in various ways. Elizabeth stated that building an instructor-student relationship was important for her openness and engagement. Katherine said establishing a relationship improved her learning and increased her participation. Laura believed being able to share personal information and having her instructor recognize her on a personal level contributed to the success of critical inquiry.

**Subtheme 3b: I see the instructor participate and provide support.** Amanda, Jess, Mary all stated it was important for an instructor participate in and encourage student discussion for critical inquiry. According to their experiences, critical inquiry was easier if the instructor created a welcoming environment shared her or his own expertise and experiences, and prompted students to elaborate on their comments.

Amanda stated that it was helpful to hear about her instructors’ personal experiences. It also was important for instructors to establish a flexible, welcoming environment for sharing. Establishing what the environment would be like was important:
She set the stage really well. The first day [she] said I know you guys are stressed. I know
you have really heavy clinical classes. The point of this course is not to overwhelm you
and have you freak out. It's for you to think about different topics that you're going to
encounter and prepare you…I think she kind of calmed everyone there and was just very
nice.

Amanda viewed her instructor as kind and nurturing. She was excited about the course content
because she liked her instructor. The environment created by her instructor was flexible and
“relaxing and open:”

I think I probably put more effort into it and more reflection and research into my posts
because I really liked her and I thought she wanted us to do this for the meaning behind
it, she's not out to nitpick our posts. She's not correcting our grammar or ... She would say
if you reference an article, cite it. She's said practice APA [American Psychological
Association] but I'm going to give you half credit if something's wrong.

Amanda liked her instructor, which motivated her to do more work. She was happy to focus on
the deeper meaning of content and not worry about grammar. She appreciated being respected
and fairly treated. She continued:

So, I think she made it a pretty easy environment which made me want to, for my one or
two posts every week, make them meaningful and get something out of it.

Amanda felt relaxed and free to explore. She highlighted the importance of feeling like the
experience was personalized for her. Amanda elaborated:

Where if she had come in and said this is the most important course of the semester and
here's all the rules and you can't step outside of any of that, I might have been less excited
to do that.
Having an instructor that shared personal experiences also was important for deeper learning according to Amanda. An instructor’s perspective could help expand upon topics and deepen learning related to nursing:

I think so. I think from all the professors, it’s great just to hear their actual experience. Especially with, I mean it's good to hear their clinical experience, but with tough topics.

So [for example] cultural incompetence. I had talked about the first transgender patient I ever worked with, and what went well and she was awesome and explained a lot to me, but Professor Bond was able to add how it is to work with a different culture, different needs of a patient.

Amanda felt special when her instructor listened to her talk about her experience with a transgender patient. When the instructor offered additional information, it validated that her work, even as a novice, was relevant and important. She continued:

Then one of the other topics that we talked about was professional issues, the nurses’ role and quality improvement. She was able to add what she as a staff nurse does identifying a problem, coming up with a solution, things like that.

Amanda added that creating a safe space where students were comfortable sharing their own personal experiences also was important for critical inquiry:

I don't remember specifics, but I remember a lot of people talking about instances where their own family member was sick and they were in the role of family member so it ... I remember it got pretty personal. I mean I think a lot of it in-person was probably sort of the environment that she created. But it was really like you can say anything.

Amanda felt comfortable and safe to share personal, intimate information about her experience with patient care. It seemed her peers felt the same way:
And I remember one guy's specific story was again, you won't realize this until you're put in the shoes of a family member whose dad is dying but this is how I felt. And it was helping us. If you've never been in that position, I want to share.

Amanda stated that students being able and willing to share information helped with her future work as a nurse. Learning from others’ experiences was important:

And I think most of the classes try to do that. And then also our clinical groups, when it's a smaller group of us having a clinical group and an instructor who's like okay, what went well today? And you feel okay to be like I can't believe I did this really dumb thing. But you share it so that your classmate doesn't do the dumb thing…

Amanda was not nervous or frightened to make or share mistakes. She felt accepted and part of a learning community:

We're all going to make mistakes. We're all new at this. And please share to help each other. I think that makes a huge difference. …And I think learning from your instructor who has tons of experience and also learning from your classmates who are same level as you but maybe have more experience with a certain situation or patients or something.

Jess had an instructor whom she very much admired and respected and felt lucky to have her. She believed her instructor was accepting of everyone and their new ideas. This motivated Jess to engage more deeply in the course:

Well our instructor, she's really amazing. She's so smart. She really accepted any ideas that you had. She never made you feel ... She made the class very interesting. I don't know if she knew we thought this was going to be a fluff class, but she definitely made it interesting…I mean it [a discussion board post requirement] was maybe 250 words so you'd try to make it sound great because you want your instructor to like it.
Jess’ instructor was very active in the course, providing relevant feedback on papers and posting in the discussion boards. Knowing her instructor was participating made Jess “try harder:”

When she gave feedback on papers, she actually read your paper. She actually encouraged me to submit one of my papers to be published in a student nursing journal. And that was really, really nice of her, and thoughtful...

Jess felt unique. She believed her instructor really cared for her as a student. She explained:

I don't know, I think some people could just read through and kind of say B+ or whatever. It could have just been my interaction with her that made me really try harder in the class. She was just incredible ... I think some of it could be credited to her. I know she's actually reading what I'm talking about and understanding where I'm coming from, and wants me to do well.

Jess felt valued as a student and understood as a person. She believed strongly that her instructor played an important role in her positive experience:

She was really great. She actually gave very relevant feedback. It wasn't just like “good job”. She actually just gives insightful feedback and I think that helped and was very motivating. In the discussions, she would always chime in. Or she'd say things like I wish you kind of developed this more. Or, oh Jess, you talked about this, but what are your thoughts on this? So, she would kind of reciprocate with other questions that were outside of the actual post requirements. So, it's your instructor so you always want to respond to your instructor. She just made sure that we were engaged.

When asked how development of critical inquiry skills was connected to a good relationship with an instructor, Jess replied:
I don't know if it was just the instructor. I don't know if everyone had the same experiences I did. I think her encouragement; her passion for nursing was really a good push to try to get the most out of the course. Engaging and she was invested in [me] as a learner. In a couple other courses, the instructor doesn't even know your name and it's all 90-something of us together in one room.

Jess’ instructor made sure all students were participating in critical inquiry. She would connect students to other students’ posts and ask questions to keep the online discussions going:

She would connect ... And it was always relevant. It wasn't oh go read this person's post. It was always connected somehow. But she definitely tried to encourage that as frequently as possible. She'd definitely leave trailers. Whoa, well tell me more about this.

Jess was motivated and encouraged to keep participating. Even though she was one of many students, she felt like she was getting individual attention:

And I think some people would not have responded to those or some people did but I really appreciated that she did that. Because sometimes online can feel like, is anybody really reading this? Where is this going? Stuff like that.

Jess did not feel alone. She felt supported. Her instructor was by her side as she was pushing through the coursework and learning:

So, I think knowing she was involved and reading the posts and pushing us and encouraging us to respond to other people's posts helped. It was an encouragement to participate.

Unfortunately, Mary did not feel her instructor participated much and, therefore, she did not feel engaged in the course. “I don't think she commented on stuff, I don't think she commented much. I don't remember her. I don't have any appreciation or memories of any
comments that she made.” Mary was disappointed, and at the same time relieved, by the experience. She seemed to like her instructor on a personal level but the course experience was not challenging enough. She recognized that students needed to be encouraged to have deep, online critical conversations:

How can you get an online forum-how do you get required online response and participation away from rote participation? We are all very good at skimming someone's thing, finding one point that we feel a little bit of resonance with, finding one or two additional sources, making up an opinion for the sake of it, putting in our three to five sentences and then making it APA and hitting submit. Do I actually get anything from that? No.

The lack of instructor engagement permitted Mary to do the bare minimum. At the time this was a relief, as she focused on her more challenging courses. In hindsight however, Mary was disheartened:

Do I really know what I wrote? No. Does it sound pretty good? Fine. Is anyone grading it hard enough to know the difference? I don’t know. I'm still ... somehow not engaged with it. How do you get people to be engaged with those responses without it do this or I'm going fail you.

When Mary was asked what would have helped increase critical inquiry in the course, she stated it needed more instructor involvement and more student accountability:

More frequent graded performances, virtually and physically, but then also [being] seemingly more involved. I felt [my other instructor] our ethics teacher was actually reading what we wrote and then responding to specific points. So, they were putting in more what appeared, seemingly more work.
Mary was discouraged when she compared her two online instructors. No matter how much work the instructor was actually doing, it was important that she at least have a sense her instructor was doing something. Mary expected her instructor would comment on her work and interact with the class. She explained:

I mean, I can't speak to what Professor Jones's background operations were but I didn't feel she was doing a lot of work on the things that we were doing… For me personally, without thinking about the course, just my Mary student hat, I think talking about it more. Being accountable for having an in class discussion with graded performances where everyone had to be aware enough of the topic in order to participate, and then having very pointed, very well-facilitated discussion.

Mary also shared that there was little oversight during group work. “Kind of what was going on still, but no guidance necessarily. Not from that class. Kind of hands-off laissez-faire.” Mary did not experience critical inquiry. She said that introducing new information and having longer, facilitated conversations about topics would have helped support deeper discussions:

The in-person class time was used - we basically would only read verbatim what our paper was that was due, or we would just show the thing that we made for the last class. So, there was no new introduction or any really hashing out of concepts in the class time. And that is what I think another part of other classes I've had, even my politics class, a lot of it was online, but when we got into class we got into some good figure stuff out conversations. There's no continuation of conversation. Online conversation didn't turn into continued conversation in class.
Mary was dissatisfied with the online discussions, especially when she compared them to her other online experiences. Online conversations were left unfinished or unresolved. She described what they were like:

Conversations were finite, limited to one or two minimal postings, and then maybe class reiterated it, or [we] just did some other assignment - sort of share what you did. And then maybe we would ask any responses to Mary's work?

To recap, while Amanda, Jess, and Mary had different instructors, all three believed that critical inquiry was better supported with an instructor who actively participated in the online course. An instructor who was engaged with students, provided encouragement, showed excitement for the content, was open to students’ ideas, shared personal/professional experiences, and established a safe, welcoming environment created opportunities for critical inquiry.

**Summary.** Establishing positive, consistent instructor-student relationships were important for critical inquiry. Participants stated that when instructors consistently engaged with them and exhibited enthusiasm for the topic, their participation and interest in the course increased. Personal recognition of their contributions was motivating. At the same time, instructors needed to create a safe environment for sharing, and participate by sharing their own experiences. Participants felt being motivated and willing to openly share, through strong instructor relationships, improved participation and online critical inquiry. This suggests that managing the mechanics of an online course is not enough to support critical inquiry. Instructors need to engage with each student on a more personal level, and students must feel they know their instructor more intimately, as well.
Master Theme 4: I Share More When I Know My Peers

This theme, identified by five of the six participants, related to how establishing peer relationships can improve online critical inquiry. There were two subthemes: *Being known and accepted by my peers* and *Knowing others makes critical inquiry easier*. This section discusses each subtheme.

**Subtheme 4a: Being known and accepted by my peers.** Amanda, Jess, and Mary stated that having peer acceptance was important for online critical inquiry. Based on their experiences, the closer they identified with their peers and felt accepted, the more comfortable they were sharing personal information and engaging in more meaningful discussions.

Amanda talked about how sharing personal information helped improve critical inquiry. In order to share personal information, she needed to be in an environment where she felt comfortable with her peers. She described peers trying to help each other:

So, what that feels like when you're caring for a patient in a similar situation. I think ... I mean I never thought about it before, but I think everyone sharing really was trying to help other people who had just never encountered.

Amanda experienced peer support similar to patient care. She needed to feel nurtured and cared for. Amanda stated that knowing her peers helped her with the online discussion posts. The comments were “more meaningful” and the relationships held her accountable to a higher quality of work. Amanda felt peer relationships were important for the critical inquiry:

I think it is important. I think especially having sort of a similar hybrid course third semester where I knew people better or at least even if I didn't- if I met them that semester, sort of knew of them, knowing what we're all going through and knowing different personalities I think that helps with posts. And I think it just allows for more
meaningful posts. Even if you're not friends, you know me. If I write a bad response it's almost like really Amanda? Whereas, if you don't know each other, you just kind of dismiss it. I feel when you do get to know people, you almost feel you owe them more work or a better discussion.

Jess struggled with feeling accepted by peers. She was excited to be back in school after working for six years, but she did not want to appear over-zealous to her peers. When asked if she wanted to comment more often for critical inquiry she responded:

Yeah, absolutely! Absolutely! And also no one else was doing it. It sounds silly, but group think mentality exists. It was our first semester, you're trying to make friends, you don't want to come across as the one person who's over achieving, and, even though it's online, they still see your name. They know who you are. So, you don't want to be that person that says here's my six articles and my deep thoughts on every single one. I think it's silly, but that's part of it.

Jess was very animated talking about school. Her excitement however was overshadowed by her concern to fit in with her peers:

I would just be restricted by the fact that I don't want to be overbearing over achieving person…It [the online discussion board] was a good way to kind of - if you've interacted online, then maybe you're more likely to interact in-person too. In this school there is some groupthink, I think. A little bit. So, it was a good way to interact with people that you might not normally interact with.

Jess found the requirements for discussion posts challenging. She found herself comparing her posts to her peers and worried how she would be perceived:
I think that was a challenge in a way, because you’re just, okay I need to come up with two things. I've got to come up with them, and you'd read other people’s posts and say that was a really good idea. And maybe wouldn't ... Maybe I didn't allow myself to really come up with my own unique ideas, especially ... You'd see someone else's post and think that was so great, why didn't I think of that?

Jess would second-guess her posts after reviewing her peers’ comments. A lack of peer connectedness made Jess feel insecure about her work. She continued:

And then, you kind of force an idea or something. …Sometimes if you were the first person to respond, and I would do this too, you'd see what someone responded with and they wrote five paragraphs. I'm like oh my gosh, I wasn't going to do that much.

During in-person classes, Jess was not concerned about being perceived as overbearing. When asked if she worried what her peers thought if she raised her hand a lot during class, Jess said:

No, no. I wouldn't, it is funny, I wouldn't worry about that because I think a lot of us are that way. Where a lot of us are [from] different careers. We like school because we are doing a second Bachelor degree. So, I think when you're in class, you're more than likely to have that improvisation of raising your hands and communicating as opposed to writing your post and you check to see if someone responded to you and no one does.

It is worth noting again Jess’ insecurity about her work. She felt dejected when her peers and the instructor did not respond to her post. She wondered if her ideas were as good as she thought:

And you're okay, I guess no one thought my thought was that great, or, no one liked my idea or even if the instructor doesn't respond, which she had so many to respond to. Oh, I thought that was a really good idea and she didn't even see it, so.
When asked if it was important to know her peers for critical inquiry, Jess said, “Yes,” but she also stated, “Peers I think can be motivating or demotivating.” She shared that it was difficult to get to know her peers and that there were cliques:

I think it's tough because I think this program in particular; there are so many students who are right out of college. And I've been out of school for seven years now. And they definitely form a little clique. And that can be hard to kind of overcome.

Jess really seemed to struggle with peer relationships. She felt like an outsider. She continued:

And I think that being connected to peers in an online course is important because it kind of- ... In one way, I said I loved the in-person but at the same time it was kind of nice that you didn't have to worry if that person didn't - thought you were silly for raising your hand. I think that having an online option is a good outlet for some people who don't feel they can speak their mind or anything in the classroom.

Mary stated that peer engagement affected her own participation. She could not engage in critical conversations if her peers where not actively participating. When talking about what made critical inquiry challenging in the discussion boards, Mary said:

I think it was just full picture style, I think knowing that the other students are just kind of [not engaged], it felt they were just kind of making stuff up. I can only speak to me - trying to write something heartfelt. But still not feeling very attached to it as an answer.

Mary felt disconnected from the content because she was disengaged. She said it was difficult getting to know her peers in the online course. What she lacked in peer relationships, she believed she compensated for by having a strong instructor relationship. When asked about the importance of establishing peer relationships in an online course, Mary laughed:
I was so nervous. I studied art in undergrad. I mean I'm 30. I think I just turned 30. I'm not saying I'm old but I have classmates that graduated a year and a half ago right before I started the program. I was already feeling insecure, it put me right back into being 12 to be totally honest.

Mary was nervous and insecure. She felt like an awkward teenager who did not fit in. She wished the relationships had been easier but they were not:

I was nervous and then having people not be interested and... you want to be interesting, I'm a little bit of a nerd, [but] it's cool. That's just a kind of fifth grader sort of mentality but, I'm a human, it's there. It happens. It would have been nice, but people were really disinterested in that class. It was going be hard and I suspect if I looked back at my interactions in high school, or even in undergrad, what was lacking in terms of peer-to-peer relationship, I think I compensated by having very strong relationships with my professors... I feel more strongly about a lot of those relationships than I do about friendships that I had going through school. So, to kind of have neither... (laughs)...

Mary felt confused and alone. She was not able to make strong peer or instructor connections. Mary was older than most students and did not know anyone because it was the first semester. She found getting to know them difficult because she felt different from them:

I just kind of showed up. I have people who are pleasant to talk to, and I definitely have good friends in the program, but in that class, in that setting. We're still trying to figure out...I was trying to figure out who I was as a student in the program ... do I have a voice? And I was still a little embarrassed that I was an art student until people said no don't be. It was confusing at times. I mean certainly in our group project, it was oh looks like I'm organizing this. Getting people, I don't know, to do something for a project that
even though if our teacher's an easy grader I still want us to do our best. But feeling a little frustrated with that I think at times. And just trying to figure out what their work styles enough to figure out how much effort I had to (laughs) compensate with. So, we divvied up the work and kind of muddled through it.

Mary felt a range of feelings: alone, confused, apathetic, and then frustrated. She decided to concentrate on completing coursework instead of developing relationships. Lack of peer relationships resulted in “semi-painful” group meetings. There was a shortage of interest to engage deeply in the group tasks and assignments. Mary described how the group divided work:

Two semi-painful meetings (laughs). (Referring to the team assigning roles for a project) I don't care what you want to do just as long as you do it. Cool 200 years (of history to cover for our project?) – good, awesome. You want to do that? How are you going to structure this? I don’t know. Evenly, or not if you don't want to do a lot of work? Let's give you the least amount of work because you're going do that anyway so, let's work to your strengths.

Mary resided to the fact that she and her peers were not going to form a kinship. Getting the work done and passing the course was the primary focus.

Summarizing this subtheme, participants experienced improved critical inquiry if they felt comfortable and accepted by their peers. When peers were at ease, they were able to help one another by sharing personal experiences. If peer relations were weak, motivation was low and the environment was unpleasant.

**Subtheme 4b: Knowing others makes critical inquiry easier.** Katherine and Laura stated it was important to know their peers. Online learning can feel solitary. Knowing your peers can be motivational and provide a safe space for critical conversations.
Katherine stated knowing her peers helped create an environment that felt safe for sharing during discussions. When asked how important it was to know her peers, Katherine said, “I mean, I think it's important in any course. Online especially because it's so easy to feel disconnected because you learn a lot from your peers. I think those discussions kind of help you learn from one another.”

Katherine said this online course was more complex than some of the others she took. When asked what was different about this course, she replied:

We did a lot of readings, whether it was online or in the book, and then we discussed exactly what critical thinking is, and how it's used, and then other nursing experiences with critical thinking. I don't think anybody really ... We never really talked about our own experiences that I can remember.

Katherine believed that when she established relationships with her peers, it motivated her to work harder. When asked what was different when online peers felt a connection to each other, Katherine said:

I think you go a little bit beyond the expectations or the minimum requirements. It just feels comfortable. I think when you feel comfortable it is easier. It's easier to participate more, to be a part of discussions more. I think when you're more comfortable you're a bit more open about what you're thinking or you're not afraid to participate based on what other's reactions will be and things like that.

When asked to describe the relationships in the course, Laura stated she “did not really know anyone. I got to know one of the girls well because the other girl didn't do anything, so her and I were communicating a lot.” At first, Laura and her peers were just posting answers in the
discussion board. As the semester progressed, they began to respond to one another’s posts and engage in more critical conversations:

They started off pretty basic, but I think towards the end [of the semester], they [the discussion board posts] got a little more interesting and, in deeper. The conversations I think were finally [deeper]. Something clicked and we were, "Oh, we should actually be really talking about this, not just posting."

Laura became animated when she shared her discovery. She was excited and proud that her group had been able to have deep conversations towards the end of the semester. She continued:

I think if ... it helps if you respond because sometimes you just, all three people have to post to the end, and then some classes, three people post and then you need to respond to those three people, and I think that's showing me how other people think. And then I can work from there and be like, "Oh, well, I thought of it as a totally different way," or, "Why did you say that?" versus just reading what someone posted and then that's the end.

When asked if she would have had more critical conversations earlier if she knew her peers better, Laura responded:

It's hard to know if it's what we're learning in our education versus knowing people, but throughout the year, they've [the discussions] definitely gotten deeper and definitely more critical thinking. Because I know everyone now. I know that I can really talk about things and I think that's important.

Laura said knowing peers was important for feeling safe and comfortable. She knew she could depend on certain individuals to complete assignments:

I also think with the group work, it kind of ends up getting split because some people, don't work as well and the other people, kind of carry the weight, and I obviously end up
bonding with those people a lot more. Knowing I can depend on them [makes me feel] 
safe and comfortable in trusting them that if they say they're going to finish something by  
Saturday night, they will. I've had the same person in five different groups and I can 
depend on her. I know she's going to do her work whereas other people, you don't really 
know.

Laura seemed relieved to have known someone so well. It gave her a sense of security. Laura 
also stated that by knowing her peers she was more comfortable having disagreements in the 
online discussion boards:

> And I know that she'll respond appropriately, not trying to retaliate. Sometimes the 
> conversations get a little heated because people disagree on things. I know that she 
> understands where I'm coming from or she just won't think I'm trying to be mean and that 
> kind of stuff.

Laura felt safe and protected when a peer knew her well. She was uninhibited to say what she 
really felt in the conversation:

> We talked about what we've done in the past and how we want to bring this to nursing, 
> and what kind of stuff we wanted to do in our future, and what we wanted to get out of 
> the school, and I think that's pretty personal information. I wouldn't want to post it if I felt 
> uncomfortable.

Before peer relationships were established, Laura was not as open in her online 
discussions. She had a difficult time personalizing conversations:

> [I am] definitely more vague about things. I still want to do as much as I can, but I feel 
> when I know the other people in my group, I can kind of target things more towards them
in a way that will grab their attention because I know what they like or what will start a debate.

To conclude, Katherine and Laura stated that knowing their peers improved critical inquiry. Katherine and Laura both described being more motivated or able to participate and have meaningful discussions. Without peer relationships, sharing information and having thoughtful discussions was more difficult.

Summary. Creating strong peer relationships was important in supporting critical inquiry for five out of the six participants. Mutual acceptance of one another produced an environment where participants were comfortable openly sharing personal experiences and at ease debating important topics. This has implications for course design, suggesting the need for targeted activities where peers can learn about one other before they are expected to apply critical inquiry skills.

Master Theme 5: I Need to Have Organic Conversations Too

This theme, identified by all six participants, related to how critical inquiry requires a comfortable learning atmosphere that prioritizes organic conversations. There were three subthemes: Prioritizing real conversations is difficult, I need to feel safe to openly discuss, and The quality of my critical discussions should be rewarded. This section describes each subtheme.

Subtheme 5a: Prioritizing real conversations is difficult. Amanda, Elizabeth, Jess, Katherine, Laura, and Mary explained that online discussions needed to be longer in order for critical inquiry to occur. When only one or two postings were required, everyone would complete the requirement, sometimes at the last minute, and move to the next task. Critical inquiry was difficult to achieve when meaningful discussions were not prioritized.
Amanda said timing and procrastination made critical inquiry challenging. She and her peers did not prioritize posting in the online discussions. Lack of timely contributions made critical inquiry challenging:

That was one of the hard things too is, timing with the posts. So usually it would be we needed to post by Tuesday, respond by Saturday. And I think sometimes, and I would-I'm guilty of this too - If you had a busy weekend or end of the week, once someone posted, I was great - I'm responding to that by Wednesday and I'm done. And you needed to technically read everyone's posts and they can tell that in the system, but there were definitely weeks where I feel no one probably really read my posts. They just scrolled through it and then other times that you could tell people did and really reacted.

Amanda was disappointed when peers did not read her posts. She also understood however that everyone was challenged by busy schedules:

You could usually tell by the time stamp that it was someone who maybe forgot. Or last minute was like I got to get my posts in by this time. So, it depends on who's in your group and it depends on kind of how it's structured a little bit. I found myself probably spending more time on my own post and doing some of this back research, just because I would be interested in it. So, then I would do that for two other people, or one other person, whatever the requirement was. And then I'd just tend to read ... you almost lost steam if you had a group of five or six people.

Amanda found online discussion were difficult to sustain. Building conversation, the back and forth, was more difficult online than in-person:

I think when we were those few Saturdays in-person you were able to have better discussion with people. I think because it's not live and everyone puts in a different level
of effort, you didn't really have as much back and forth as they probably want you to have [online].

Amanda was dissatisfied with her online conversations. She felt that something was missing online compared to what she typically experienced in-person. When asked why discussions were more difficult to sustain online, Amanda said because continuous dialogue was not a requirement, therefore, it was not a priority. Amanda felt unmotivated to read and post beyond the assignment requirements:

I think because we're students and you have to make something required, but if it wasn't required that someone posted tomorrow, that's great. I might read it and think to myself, oh that's great. Thanks for sharing. But I didn't have to respond. So, I might write thanks for sharing, but not build on that if I already did some of my other posts. So, I mean some of it was just, you did your requirements and move on. Or, if it was something that didn't interest me, I was oh, good to know. But don't really feel the need to look into further.

And if I've already met my requirements – I might not.

Amanda tried to find a balance between quality and quantity, but it was contingent upon peer activity. Unfortunately, the majority of the students were not seeking dialogue. They simply wanted to post their comments to fulfill the requirements:

So, I think, again, there is a balance for [this course], I think we had to respond to one or two people and that you were reading five people's responses, but you could put more into two posts. Whereas, when you had to respond four times, the whole timing thing ... I would try and wait and really respond to someone. But if no one was posting and we had a day left, people would literally post their own four posts in a row and then not interact with anyone else.
Amanda felt constrained by the timing of the posts. She had no sense of control over her online conversations because her responses depended on a peer’s initial post. It was a struggle:

So, it's kind of a real timing of how many posts and then what your other classmates are doing because it depends on them. People would basically not respond to anyone and just post their own four thoughts and that counted. Which felt not meaningful.

The experience for Amanda was discouraging. Similar to Amanda, Elizabeth also said the timing of the discussion posts made critical inquiry challenging. She stated that the timing of assignment precluded worthwhile discussions:

It was always on a Friday, and then your responses to other people's posts were due by Sunday, so there's this time lapse and I can respond to someone, but then no one's going to respond back to me if I'm doing it Sunday night. There's no point and that's it.

Elizabeth felt beaten. The timing of the posts made back and forth conversations nearly impossible. The posting requirements however were a motivating factor in Elizabeth’s course. She said that having the requirement to respond to others’ posts did help prompt her to participate more:

The minimum requirement I think they did better in this [online course] than the other courses that we took, because you can only get an A minus if only respond. You can get a better grade if you respond multiple times to different people, and it was motivating. I was definitely way more motivated because in this course you're in survival mode.

Elizabeth was exhausted but determined to do well her first semester. She was very focused on doing whatever she needed to do to get a good grade. She continued:

You're [asking] do I have time to provide, to block out everything else that's going on or whatever course it is. Block that all out and go let me truly focus on how I think.
Even though the requirement was motivating, Elizabeth found it difficult to make the online discussions a priority. The more there was to read and respond to, the more overwhelmed she felt:

There are these page responses, or pages, and sometimes I'd be guys, stop it. It's frustrating for me to read it and I'm not going to read this whole thing. I'm not. It catches up to you, which is awful because you're trying to use your thinking skills to get a good answer. Do I have time to sit here and write a half page, and read, no.

Elizabeth was tired. She was frustrated by additional work that did not tie directly to a better grade. If it was not required, she did not want to do it. Jess stated that the requirements, including deadlines and limits, made critical inquiry challenging. Everyone would do only enough work to meet the minimum requirement. When asked to describe the back and forth online conversations, Jess replied:

Not a ton. I think that was the hope, is that there would be. But, I think it's hard when you set a deadline, or you set a limit, and say you need to respond to two posts. I think we hit our two posts and then we're done just because there's a lot of things to do, and, we have other courses and this is a three-credit course and we've got six credit courses too, so I think that might have something to do with it.

Jess was torn between her identity as an overachiever and managing her workload. She really wanted to have meaningful conversations but also recognized it would take time away from her required work. She explained:

And we weren't graded necessarily very difficultly, so if we did our two posts, then we usually got full credit so it wasn't that motivating to [say] I'm going go back and I'm going research five more articles.
Procrastination also made critical inquiry challenging. Jess said many of her peers would wait until the due date to post and, at that point, it was too late to have a deep discussion:

Inevitably, everyone would wait until two days before it was due. That was so annoying. If everyone's waiting to do their original post three days before it's due, before everything's due, then you've got to get all your responses in and that even detours trying to give it 100 percent. Because I've just got to get these three posts done and when you're waiting on your peers, I think having those deadlines can make people want to wait until the very last minute. It's just the same thing in [another] course that you'd have to post original responses and response posts all by one deadline. And everyone would just wait until the last minute.

Again, Jess was frustrated having to rely on others before she could make her contribution. She felt rushed and possibly worried how this would affect her quality of work. The experience felt like a wasted effort because no one would read or respond to the posts:

So, I might get my post in soon and then no one responds. No one sees it. No one's done the original post. And then you have to get your response post in and you're scrambling to just do something…We've had two weeks to do it and no one's done it… I think anytime there's a deadline where you have to get X many responses in, people are just going to wait until the last minute… I think critical thinking is kind of - it was a little difficult to do on the online setting…Mainly having deadlines can kind of interfere with that. I think because a lot of students would just wait until the last minute and that would deter any further conversation. Because you're okay, deadline's up. I'm not going to go revisit that now.
Katherine stated that she posted in the discussion board based on the requirements. While discussion boards usually have minimum requirements, Katherine called these “limitations” and felt they may have hindered conversation:

Since you're writing it, it's kind of you just meet the requirements. You answer the questions. Whereas the requirement in class is if you participate you get credit, right so nobody limits themselves. So, there are less limitations about what the discussion is. While the online course did have some requirements, Katherine appreciated that it did not have extremely strict ones:

I like how it was a relaxed course. It wasn't like there were really high expectations, because all of our other courses had such strict high expectations that it was kind of a free-flowing course. It was relaxed, but still productive. Which I appreciated during that first semester when all the other courses had more strict requirements and a lot more work and things like that.

While Katherine felt limited by the discussion requirements, she enjoyed the course environment. The relaxed atmosphere, compared to all the other pressures she was feeling, was liberating.

Laura stated critical inquiry was challenging because she had to rely on the contribution of others in her group. When they did not prioritize the online discussions, critical inquiry was difficult:

I spent a lot of time focused on the group work and trying to move a group along so that took a lot of the energy I could put into critical thinking and to making sure that other people did their parts and that's much more difficult in an online environment versus if we were all together and given some sort of problem to figure out. We could bounce
ideas off each other more, but when it's online, it's "Did you do your part?" … Everyone basically waited 'til the last minute.

Laura was exasperated and weary. She felt compelled to take charge and try to get her group to collaborate but knew the effort was at the expense of deeper learning.

Laura had a hard time personally trying to prioritize the online discussions because this course, in comparison to other courses, was not her priority. It was difficult to stay engaged:

[I had other courses] Which took way more time, so [this online course] kind of got thrown by the wayside a lot. That's, yeah, it's the general consensus [that this was a lower priority]. It's the blow-off course. The stuff is really interesting. It's just when your only homework is respond [online] to this book that you read, it doesn't get sorted as much as really understanding things…And I think, just the combination of everything made it ...

At first it was a bore. But it really worked with the other classes that we're taking. Laura initially felt indifferent. While the light coursework made her other courses easier, in hindsight she regretted not engaging more with some of the “interesting” content. When Laura tried to participate, she felt she would “over-respond.” Unfortunately, critical inquiry was difficult when others did not reciprocate:

I tend to over-respond to make sure that I get whatever the professor wants but not everyone does that, so when I have a two-paragraph response and someone writes two sentences, then that conversation doesn't really end up happening. And that's I'm sure Type A personality, versus someone else that ... this is all they think they have to do, which is understandable because that's what the prompt is.
Mary’s experience was similar to the other participants. Even though she felt there was an opportunity for critical inquiry, everyone just posted in the discussion board to meet the minimum requirement:

Virtual space existed for discourse. But students trying to meet deadlines were only trying to do, I don't want to say the bare minimum, but the bare minimum. We're in a time economy. And an energy economy. And in four classes, with this one I think having the fewest credits and being the least about direct nursing practices as far as we could tell as new students, it seemed the lowest priority.

When Mary spoke of her experience, she was very pragmatic. She wanted to have a good critical inquiry experience but did not have the time or energy to invest in something that seemed arbitrary. She continued:

And unfortunately for Professor Jones, the way her course is structured she also was considered to be a very generous teacher where it would make it even easier to sort of deprioritize the classwork and any extra involvement. I'd love to go back and read that theory book but at that time? Not my priority. My priority was passing med[ical] surg[ery].

Mary further explained that no one really was compelled to do more than necessary in the discussion boards. The course was the lowest priority for most, and this did not support critical inquiry:

[The interactions were] limited by the requirement and by the communally felt priorities. Everyone was let's pass med[ical] surg[ery]. Just being oh, (sigh) why am I doing this? If your teacher's not- doesn't seem to be a hard grader, your group's meh and it's your low
priority class, then…There wasn't enough communal interest to really geek out on it with other people, people just didn't want to.

Reflecting on her experience, Mary was dejected. The environment as a whole was depressing and lonely.

Mary also stated there was not enough homework to build knowledge and have deep discussions. There were no course requirements to engage in deeper conversations, therefore, critical inquiry was not a priority:

I also just don't feel we had a lot of homework for that class. I think I had to post, oh I read this thing and this is how I felt about it, maybe we had some citations but there was nothing—there was not enough work that I think we actually got into a flow of anything. And there wasn't enough required sort of back and forth that you could get into any sort of—there was no required discussion ... respond I really agree with Sally Smith, ... see what you did there, here's another source that cites what you said. Oh look, I've met my word requirement and I did my citation and I think I added to the conversation and it ends, the conversation doesn't go any further.

Mary’s experience with discussions was mundane. She felt disentranced with the process and unattached from the conversations. She described what could have been done differently:

I hate to be the student that [says] I think we could have used more homework. I think we could have used more homework to get us kind of prompted. An invitation to explore, if you will.

Summarizing this subtheme, participants stated that critical inquiry requires a collective commitment from all participants to sustain meaningful conversations. Timing was critical when late responses resulted in conversations being cut short. Finding a balance between the quality of
each post versus the quantity of responses also was a challenge. This subtheme points to course design considerations for online posting requirements including participation and timing.

**Subtheme 5b: I need to feel safe to openly discuss.** Amanda, Elizabeth, Jess, Katherine, and Laura stated that having guidance from an instructor helped promote critical inquiry. Prioritizing elements of writing, such as citations, limited critical conversations, while insufficient structure and direction resulted in students just answering questions instead engaging in critical inquiry.

Amanda said having her instructor set up opportunities to meet with peers before having online discussions was important for critical inquiry. Establishing those relationships made the conversations easier:

> And we got together, talked about what do we want to cover. I think we met twice and I think we did a lot over email. But that at least got us to meet each other outside of class and build a little bit of a relationship. Where you could at least picture the person responding to you. Because that early on in the semester there were names that I definitely recognized but didn't know who the person was. I think that was a good way to at least get you to know the people that you would then be posting with all semester…I definitely think knowing the people, at least a little bit, it makes it easier to post back and forth.

Amanda stated she was lucky. Her professor created an open, relaxing online environment and created a space for meaningful conversations:

> I think she set a really good kind of environment for the course. I know there were other professors that had different approaches and we all felt lucky to have her as our professor (laughs).
Amanda was relieved that her online course felt comfortable and safe. She knew other students had a very different experience. She spoke about the other course sections, but was cautious:

> Without saying too much and I don't know those other professors, but I think a lot of other people felt this is not a good use of my time and didn't get as good as conversation out of it [but my professor] she made it very sort of open and relaxing. And the same thing when we were in class. More people shared then I would have necessarily expected from meeting four times every Saturday.

Amanda’s professor showed interest in students and asked them to share personal experiences. Because the instructor built an open, relaxed environment people felt willing to share. When asked how this type of environment improved critical inquiry, Amanda stated it was about hearing others’ stories:

> She was interested in our previous background, our personal experience. So, when people shared, it was often something they had encountered previously not just I agree. Or raise your hand if this has happened. People were actually sharing stories, which I think was nice.

Amanda felt secure in sharing her personal experiences. She enjoyed the open exchange and was engaged and interested in what others had to say.

Elizabeth’s course was not as open or relaxed as Amanda’s. While Elizabeth thought her instructor was very qualified, the high standards caused anxiety:

> Well it's interesting, so Professor Williams's very great. She's consistently one of the top instructors here. She holds you to a high standard. Which you can take it for what it is. You can look at it and be oh, she's super strict or, no she just holds you to a standard that she thinks you can meet. It's intimidating as hell at first. What did I get myself into?
Elizabeth’s experience was bittersweet. On the one hand, she had a well-respected instructor. On the other hand, her instructor had high standards that felt overwhelming. Professor Williams had a very high standard for citations in the online discussion posts. Elizabeth worried more about APA than the actual discussions:

I felt less worried about the content of my responses and more about [APA] because I knew she was reading them, she grades them. She's giving you feedback [saying], I think your content of this was of this discussion was really good, but your APA format wasn't the best.

Even though one of the course goals was critical inquiry, Elizabeth felt the real focus in the discussion boards was on APA citations. She felt pressured to spend her time crafting APA citations rather than engaging in critical conversations.

Elizabeth stated critical discussions were limited because people were stressed and just wanted to quickly pass the class. When asked if more back and forth online conversations were needed for critical inquiry, Elizabeth said yes, but that everyone was in “survival mode:”

Right. It's unfortunate but it's so true, it's so true. You need that [but] everybody in the school is in survival mode. They're just what can I do to get through, what can I do? And not everybody has this big belief in like discussion for the sake of discussion.

Elizabeth was feeling burdened. The combination of high standards and other coursework was a heavy load to bear. Elizabeth further elaborated on feeling stress and how much more pressure there was in her course compared to some of the other sections. She stated that it affected her ability to participate in online critical inquiry:

It's definitely pressure, there's definitely a pressure. Does it fuel you or does it interfere?

It's stress in any situation. You can let it fuel you or you can let it really get to you, and I,
I think what was - not unfair - what's hard about being in [my professor]'s class versus the other classes is that the other sections are not held as to as high standard when it comes their responses and their APA format and things like that.

Elizabeth was troubled with the uneven distribution of student responsibility across the course sections. She struggled to balance her own reality and the easier path her peers seemingly had:

So how can I (a.) Do really well in this course? and (b.) make sure that my posts were on point? And then I would have a friend be like yeah, I haven't posted in three weeks, I'm what? How the hell is that even possible? So, it starts to get, you start to have this sense of unfairness, everything's unfair even though it's really not because every instructor has their right to their own class, and their own rules, and their own format, but it feels unfair because you're in the same program.

Elizabeth was angry and anxious. There was a real sense of injustice. While peers in other sections were able to complete the required minimum amount of work with little stress, Elizabeth belabored over APA format. Unfortunately, this also meant she was not focused on reflecting and having critical conversations with her peers:

How did I get this class, how is that possible? In the moment, I am just so mad that I can't blow off this course like my peers… I'm not here to get docked on indents and punctuation. It's all fine and dandy but my focus shouldn't be on that. My focus should be on my thoughts.

Jess, on the other hand, felt supported in her course section. Critical inquiry improved when her instructor provided guidance through resources. Jess used the information to enhance her papers and discussions:
Being able to access the library online articles at home: that was so great because you could cite anything. You could find anything you needed and be able to cite it. [My instructor] always listed out what chapters we had to reference in the book. She always posted things that she thought we might find interesting and if there was anything we talked about in lecture, she would always have another folder online that she would open up after the lecture with everything we did during the class. So, any websites we'd visited or any movies we'd watched. So, I think being able to reference stuff that she found useful was really helpful. And reflecting in writing those papers.

Katherine stated her course was relaxed and free-flowing. When asked how a stricter environment would have impacted her motivation to participate in critical inquiry, she said:

Maybe, yeah. I think it made you more willing to participate in the class knowing that it was a relaxed free-flowing class. If it was more strict expectations, I don't know if I would have really enjoyed it as much. I probably still would have gotten as much knowledge out of it, but I don't know if I would've enjoyed it as much. [But motivation] that probably could have changed. Yeah, because I wouldn't have been able to give it as much attention.

Although Katherine’s course was relaxed, her instructor did provide guidance. When asked to describe her instructor interactions related to critical inquiry, Katherine stated:

So, if it was an online discussion where there are questions and we answer them. She would usually reply, and she would reply to our post. And then maybe if she wanted us to elaborate on something, she would say so. And then we would reply and elaborate. Kind of how it went. She kind of guided it a little bit…
Katherine felt comfortable in the class but appeared indifferent about her overall experience. The instructor seemed appropriately involved in the course discussions but the need for critical conversation was not explicit:

In the questions that we answer on the online discussions, I feel if we were told to critically think about a situation or something like that, maybe. But I don't really remember.

Laura said that her course could have used more guidance on the expectations related to critical inquiry:

I think they kind of assume we're supposed to have some sort of idea of it. It's not very explicit, which is why I think some people have problems with it but I think it's probably said in other terms what we should be looking for and what we should be trying to figure out. But I don't know if they're ever said, "This is what critical thinking is. Do it." They don't necessarily say, "This is [critical thinking] ... Watch me critical think, and this is how we're going to go through it." I feel it wasn't explicitly stated and then this was our first semester, so I really had no idea what to expect at all.

Laura said that while questions were answered in the online discussion board, the responses rarely were deep enough to be considered critical inquiry. When asked what would have helped, Laura stated prompting would have facilitated deeper discussions:

So, we had certain reading assignments and then there'd be one or, one to three, I think, questions about it and we'd have to answer, and I think a lot of them were trying to get towards the critically thinking but I don't think the answers always got there. I don't want to say a longer question, but some sort of prompt before versus just the question “get it out of this chapter”, something about context [would have helped critical inquiry]. I can
go back and look and find where that question is, but I think the professor's showing more what kind of stuff she wants to hear in it because the work was basically answer the question and doesn't [go further], so it's hard to get it from there. And I feel some questions that are supposed to be critical thinking questions aren't really written like that, so you don't necessarily know that you're supposed to be thinking about a certain component of it.

While Laura suggested she could have used some additional guidance for critical inquiry, she felt fortunate to be in a course that supported creativity and did not have a “hostile environment.”

She talked about some of her peers’ experiences:

I know some people didn't have the greatest experience in [other sections] because it seemed to be a more hostile kind of grading system. They've got APA down and they had good answers, but I think they were kind of scared. I think that makes it difficult to really express what you want to say, because you do put a lot of personal experience into things and you don't want to ...

In comparison to other course sections, Laura was grateful for her experience. She felt safe to share her thoughts knowing her instructor would not harshly judge her:

If you're so worried about just checking off points, you don't necessarily put in all the information that's important. Right, and that's why I felt it was very fortunate... you could really write about whatever you want as long as at some point, you kind of went along with those questions.

To conclude, five participants stated that critical inquiry needed to be guided by the instructor. Prompting students to share and have deeper discussions enabled better critical inquiry. Additionally, the environment needed to be a safe space for honest, open discussions to
occur. Having standards and requirements may be necessary, but they should not be to the detriment of online conversations.

**Subtheme 5c: The quality of my critical discussions should be rewarded.** Elizabeth, Jess, and Katherine stated that the ability to have organic, spontaneous discussions improved critical inquiry. This type of dialogue should be rewarded, rather than just the quantity of posts.

Elizabeth stated that discussions needed to be more “organic.” The discussion posts with APA citations were more like mini-papers than critical conversations:

So, you're looking at what they're saying and their perspective, and sometimes they're not as deep of answers as you'd like so you're like cool, what do I, how do I respond? What do I do with this? It’s hard because - it's the process isn't as organic as I would like it to be. You're looking at a post that someone wrote with the information that provided them, they read this information and it's important and you're thinking about it, and you answer a question and you post it, and then you wait for a response.

Elizabeth was exhausted. After reading, reflecting, posting, and checking her APA citations she had little energy. The process felt disjointed, and waiting patiently for peers to respond was tiresome. She continued:

And maybe, and this is where I think other online courses like kind of improved on this, because they want it like in our ethics course—they want back and forth. We want discussion - you cannot just have one post and that's it. In this course [sharing] is very minimized because it's not as organic. You're looking at these half page responses. It's almost like papers, these responses, these papers or half page response of someone whoa, and then you're reading it and you're like oh God, look at this font and then you're reading it, and you're trying to pull out information there.
Elizabeth felt overwhelmed by the volume of text. Peers were not necessarily sharing personal information but rather writing mini research papers. The information was innately unimportant. She struggled to engage in critical inquiry using this information:

And then you're also I guess in the sense like critical thinking, you're thinking how do I respond to this? How do I pull out information from different sources so you're not just regurgitating the same information that they just did because that's (a.) not allowed but (b.) you want to provide something new to the group. You can't just be like oh wow Sally, that was a really great post, thanks. No, that's not helping you or Sally. There is that sense of integrating new information. Kind of going back and forth with other people, but it's not as organic and it's not as ... it's not fluid at all. That's kind of what it felt like to be honest. Like mini papers I was reading. You're so careful with your responses, making sure you're your citations are on point, which is good because you need evidence, but it's curated.

Elizabeth was exasperated. She knew conversations could lead to critical inquiry but the type of information posted in the discussion boards and the timing of the posts did not support it.

Elizabeth said that when the online discussions were too curated they became inauthentic and the conversations felt “fake:”

Here these are responses from peers that I would talk to in-person, and I know how you talk, I know the way your voice sounds. For me, I think one of my worst aspects is I type just the way I talk. I have a very hard time curating it, but you can just see these responses and be like I know you didn't [think that], I think there's not your own thought, but how long did it take you to write that sentence? It's not conversational. It seems so fake, it seems so fake.
Jess felt that discussions needed to be more “spontaneous” because posts based on quantity limited free-flowing conversations:

Yeah, it's ... Again, kind of having those - not restrictions, but saying you need to do two posts… I don't know if online was the best learning environment for me specifically, I like being in class and in the more spontaneous, you just kind of raise your hand and you say what's on your mind, and then someone responds with what's on their mind rather than kind of trying to draft this eloquent response to get a good grade.

Jess preferred in-person discussions more than online ones. She stated that she worried less about what people thought in-person because she could improvise:

So, it was good to have to respond and have to interact online but I don't know if it was as, it's not like conversation is flowing. I've never been a fan of discussion boards online unless it - especially the ones that require a certain number of responses. I like in-person, I like the free-flowing thought much more than the mandatory posts.

Jess felt restrained by the online discussion board. Her in-person experiences seemed to better support open communication:

I think when you're in class, you're more than likely to have that improvisation of raising your hands and communicating as opposed to writing your post and you check to see if someone responded to you and no one does.

Katherine stated critical inquiry was easier with in-person discussions. She felt that it was easier to have open, free-flowing conversations in-person as opposed to online. When structure in a discussion increased, back and forth conversation decreased:

It is different. It's different in the sense that it's not as free-flowing on a discussion board. In-person it's like an open discussion where it's more free-flowing. Everybody says what
they think about the topic, and then it kind of flows into other topics. I guess, the perimeters aren't as strict. Whereas, on an online discussion board, you answer the question. Somebody comments on it. I guess it's like good and bad, because you stay on topic online. And you kind of stray from the topic in-person, but that's also kind of half the fun because it's all like professional talk. It is all relevant.

In closing, participants experienced better critical inquiry when they were able to have organic, spontaneous conversations. Online discussions that had a great deal of requirements and structure did not feel authentic, limiting the conversation.

**Summary.** Promoting an environment that prioritizes organic conversations improves critical inquiry. Participants stated that instructors who focused on guiding and rewarding free-flowing conversations rather than the quantity of posts improved open dialogue and online critical inquiry. This has implications for how online discussion boards should be set up and should be structured and supported.

**Conclusion**

This chapter presented a summary of the participants and the subsequent master themes with their associated subthemes. Rich, thick quotations from the participants provided evidence supporting the findings. The five master themes (with eleven total sub-themes) resulted from the data analysis of a qualitative interpretative phenomenological analysis study on first year nursing students’ experiences with online critical inquiry.

The National League for Nursing, an accrediting body for nursing programs, recognizes the importance of critical inquiry skills. They have incorporated these into the core competencies for all nursing graduates (Massachusetts Department of Higher Education Nursing Initiative, 2010; National League for Nursing, 2015). Due to accreditation requirements, the ABSN nursing
program in this study must provide evidence that critical inquiry skills are being taught and assessed across the curriculum. While the non-experiential online course in this study included critical inquiry as a course goal, half of the participants did not experience it. While many of the participants equated critical inquiry with patient work, it does not have to be taught in an experiential course; at least the literature did not support that conclusion.

I believe this online course did not provide a significant critical inquiry experience because it was non-experimental, and this was how the participants perceived critical inquiry should be experienced. They could not link the coursework to patient care. If the online course had been designed differently (e.g., having students think about the historical content and connecting it patient care through cases and scenarios, etc.) perhaps there may have been more critical inquiry. Setting expectations by providing a clear definition of how critical thinking is defined in a course and how it would be experienced through the coursework may lead to different outcomes. The first master theme supports this. Four additional themes also help explain the participants’ online critical inquiry experiences in this course.

This online course was one of the first courses taken in the ABSN program. Many participants described critical inquiry as developing over time in the context of patient care. This second theme suggests it may be too ambitious to assume nursing students, either in their first semester or early in a course, are able to participate in online critical inquiry without explicit definitions or direction for how it should be accomplished. In fact, only half of the participants said they experienced critical inquiry. This varied across the course sections and also with the same course instructor. This suggests that online critical inquiry is based on individuals’ previous knowledge and/or experience. This also may be related to the third and fourth themes where participants stated personalized interactions with the instructor and knowing their peers was
important for critical inquiry. In the first semester of the program, the participants were unfamiliar with one another. Participants acknowledged the importance of establishing relationships with their peers and instructor before openly sharing and debating. Students may need this before they are able to successfully participate in critical inquiry however, how quickly they establish relationships with one another will vary. Last, the fifth theme provides evidence that organic conversations, which also support instructor and peer relationship building, were found to improve critical inquiry. While organic, informal conversations may not always directly connect with the course topic, the personal nature of the information shared during these dialogues was important for building peer relationships and foundational to critical discussions. Consideration may need to be given for finding a balance between academic and personal online discussions.

The next chapter concludes the study by addressing how these themes are related to the research questions. It links the themes to the literature reviewed and the theoretical framework. Study limitations and consider implications for practice and for future research are described. Lastly, I reflect on my journey as a scholar-practitioner and share what I intend to do with the study.
Chapter Five: Discussion of Themes

This chapter begins with a review of the problem and methodology. The master themes outlined in Chapter Four are first presented in relation to the research question(s) and how the participants’ experiences in each theme answer these questions. Next, the five master themes are explored in relation to what was learned from the theoretical framework. Finally, they are examined in relation to the literature. This section considers how the master themes inform, support, or challenge the research related to how critical inquiry is learned and taught, and how online environments influence teaching and learning. Implications for practice and limitations of this study are discussed and areas for future research are suggested. The chapter concludes with a personal reflection.

Review of Problem of Practice

Critical inquiry is difficult for students to achieve (Borglin & Fagerström, 2012; Del Bueno, 2005; Killam & Heerschap, 2013). Discourse and reflection are processes that enable students to engage in critical inquiry; however, there is little consensus among researchers on the best method to teach it to others (Tsui, 2002). Online education can complicate teaching and learning critical inquiry as rich interactions and relationships are needed to facilitate online learning. Successfully developing and sustaining critical inquiry among students adds another layer to what needs attention (Darabi, Arrastia, Nelson, Cornille, & Liang, 2011). The purpose of this study was to explore and understand how undergraduate nursing students experience online critical inquiry, which may help faculty and course designers select teaching and learning strategies that allow students to practice and apply the necessary skills for improved patient care and safety.
Nursing students, in particular, must demonstrate proficiency in critical inquiry, because this competency directly relates to patient quality of care, safety, and outcomes (Chabeli, 2007; Fero, Witsberger, Wesmiller, Zullo, & Hoffman, 2009; Fesler-Birch, 2005; Hicks, 2001; Martyn, Terwijn, Kek, & Huijser, 2014; Profetto-McGrath, 2005; Reavis, Sandidge, & Bauer, 1998). A greater understanding of the challenges and successes nursing students experienced during online critical inquiry was needed in order to help instructors better design and teach online courses.

**Review of Methodology**

Interpretative phenomenological analysis (IPA) was chosen as the research methodology for this study so that the students’ experiences with online critical inquiry, including their internal thought processes, could be explored. A two-stage interpretation process (double hermeneutic) using interviews (stage 1) and coding and analysis (stage 2) facilitated in revealing the essential meanings of the participants’ experiences. Interviews, capturing students’ rich narratives, were conducted with six accelerated Bachelor of Science Nursing (ABSN) students who completed the same online hybrid course during the first semester of their nursing program. Coding and analysis, following the six steps outlined in Smith et al.’s (2009) framework, resulted in five master themes and 11 total subthemes. These themes answered the central research question for this study: How do undergraduate nursing students describe their first year experience with critical inquiry in an online course on nursing history and theory? Secondary research questions included:

1. What experiences do they describe as helpful in learning critical inquiry in this online course?
2. What experiences do they describe as a hindrance in learning critical inquiry in this online course?
Discussion of Master Themes in Relation to the Research Questions

Analysis of the data collected during this study revealed five master themes, with 11 supporting subthemes, as outlined in Chapter Four. The master themes included: Context shapes my understanding, My skills develop gradually with authentic experience, Good instructor relationships motivate me, I share more when I know my peers, and I need to have organic conversations, too. Each theme is discussed as it relates to the participants’ experiences, and then also with regard to how it helped or hindered their online critical inquiry.

Context shapes my understanding. The first major theme describes how all six participants defined online critical inquiry differently. The participants’ descriptions seemed to be shaped by two factors: previous experiences and the setting where critical inquiry occurred. The participants in this study had a wide range of professional and academic backgrounds. The context of those experiences seemed to influence their understanding of critical inquiry. For example, Elizabeth stated a sense of urgency was associated with critical inquiry. She believed this because of a prior experience, “That, or even for me, when I do critical thinking I feel a lot of it comes into some sort of, and maybe this is just because of my experience, but some sort of pressure there.” Previous experiences may contribute to why participants defined critical inquiry differently. Setting also seemed to be a defining factor. Several participants reported that critical inquiry was operationally different when it was outside of the clinical setting. Amanda, for instance, experienced critical inquiry in an office setting but stated it was, “clearer when I think of it in terms of walking into a patient's room …” Based on the analysis of the students’ responses, one may conclude that critical inquiry will be experienced differently by nursing students, based on their previous experiences and in different locations (classroom, clinical, office workplaces).
While the participants had individual differences, there were some points of agreement regarding what helped and hindered their online critical inquiry. Both Mary and Katherine felt working with others and having activities that supported discourse and reflection was beneficial. Conversely, individual activities, and those that only required rote memorization, were not helpful. All six participants stated that using previous experience and knowledge, and assessing and prioritizing information, improved their experience. In contrast, lack of information hindered their ability to participate in critical conversations. Solving problems or challenges related to patient and clinical work was also important. Participants found critical inquiry, without these settings in the context of nursing, difficult.

**My skills develop gradually with authentic experience.** The second major theme highlights participants’ need for more time and exposure to realistic situations. Four of the six participants specifically mentioned that their critical inquiry skills developed over time through patient-centered experiences. Time allowed for increased practice and knowledge as participants noted a clear distinction between nursing students’ and experienced nurses’ knowledge and abilities. Novice students and nurses early in their career were still developing their critical inquiry skills, while expert nurses who spent a significant amount of time in patient situations, were more competent in applying those skills. As an illustration, Katherine explained, “It's as you become, as you go from being a novice to an expert is how you develop that critical thinking ability.” Authentic experience was another defining factor in developing and improving critical inquiry. Elizabeth stated, “Experience, experience. It’s experience,” emphasizing its importance. The more experience someone had working with patients, the greater the knowledge and critical inquiry proficiency.
Participants in this study relied on their personal experiences as novice nurses, as well as exposure to expert nurses, to identify what helped and hindered their online critical inquiry. Amanda, Elizabeth, and Katherine stated that being novice-nursing students hindered their critical inquiry ability. It was difficult because they lacked sufficient foundational knowledge and relevant experiences to support higher order cognitive tasks like critical inquiry. Consequently, Katherine believed that it was “a little unreasonable” to expect students to participate in critical inquiry during the first semester of the nursing program. Participants agreed that more time to gain additional knowledge and experience would help their online critical inquiry. In the nursing context, this specifically included learning how to care for patients and “being bedside.” Reading about critical inquiry was not helpful to understanding how to apply the necessary skills while conversely, working with experts in the field and reflecting on those experiences helped improve their skills. Incidentally, there appears to be a connection in the data between experience and context. Both concepts were related to patient work, something that was limited in the online course under investigation and during the first semester of the nursing program.

**Good instructor relationships motivate me.** The third major theme focuses on how supportive, respectful relationships between instructors and students improve motivation. All six participants stated positive, consistent instructor-student relationships motivated them to engage in online critical inquiry. Jess shared, “It could have just been my interaction with her that made me really try harder in the class. She was just incredible ... I think some of it could be credited to her.” Participants indicated that online critical inquiry improved when their instructor consistently engaged with them and established a safe environment for sharing.
Participants agreed that activities where students could directly engage one-on-one with their instructor were important. Frequent communication was helpful for online critical inquiry, particularly when they included personal information such as a student’s name or place of employment. Instruction that included complimenting students’ work, introducing students to one another, or encouraging deeper thought was also helpful. Instructors who appeared unengaged (not reading or commenting in the posts) or provided little oversight during the course negatively affected students’ motivation to participate and therefore, their ability to contribute to critical conversations.

I share more when I know my peers. The fourth major theme focuses on how strong peer relationships, including being known and accepted, increased students’ willingness to exchange information. Peer relationships were essential to sharing information, deep thoughts, and ideas. Five of the six participants in this study acknowledged the importance of establishing relationships with their peers so they could share information and support online critical inquiry.

Participants stated that not knowing their peers, or not feeling known by their peers in the first semester, made online critical inquiry challenging. For instance, Amanda and Laura both reported that feeling comfortable with their peers and understanding each other’s similarities and differences was helpful. Accountability for quality of work and participation was closely tied to how well everyone knew each other. Peers who did not know one another would easily disengage, which limited critical conversations. Lack of shared, personal experiences ultimately meant meaningful, substantive conversations could not happen.

I need to have organic conversations too. The final major theme presents information related to supporting and prioritizing online conversations that occur organically. All six participants stated that informal discussions needed to be given priority and support. They also
needed a safe environment so that they could openly share during these conversations, enabling more meaningful discussions. For example, Amanda stated, “She [my professor] made it very sort of open and relaxing. And the same thing when we were in class. More people shared than I would have necessarily expected from meeting four times every Saturday.” Competing priorities hindered their ability and motivation to participate in rich, meaningful conversations. It is interesting to note that this particular theme was the one most consistently found in the data across all six participants.

Establishing an open, relaxed environment supportive of creative conversations was helpful to online critical inquiry. Sharing personal experiences and having instructor guidance and the resources to support informal conversations was valuable. The personal content of informal conversations led to deeper connections among the students once they felt more comfortable sharing information. While an increase in information exchange led to deeper, more robust discussions, posts that were too long and complex were a hindrance. Responses posted near or on the last day of a course week/unit were considered to not be helpful. Meaningful discussions did not occur in threads where peers habitually procrastinated. Deeper, quality discussions also were missed if the course requirement was focused on the number of posts. Encouraging fluid, authentic, back-and-forth conversations improved critical discourse, whereas a focus on the quantity of posts distracted their attention from the cognitive level of the exchange.

**Discussion of Master Themes in Relation to the Theoretical Framework**

Community of inquiry (CoI) served as the framework for this study. As detailed in previous chapters, CoI focuses on three elements (social presence, teaching presence, and
cognitive presence) supporting online critical inquiry and the student experience. Each of these elements in the CoI framework is discussed in relation to the five themes.

**Social presence.** Social presence is the act of building online interactions to create a community where students feel they belong. Exchanging information and collaboration, defined by Kaye (1992) as working together towards a shared goal, are key characteristics. Social presence is supported by a risk-free learning climate where an instructor’s role is to cultivate relationships and communicate with students (Garrison, 2011).

Similar to collaboration, the theme *Context shapes my understanding* points to the importance of students’ shared understanding of how online critical inquiry was defined and experienced. A risk-free environment supports the participants’ needs to freely express their ideas and reflect on previous knowledge and experiences, as highlighted in the theme *My skills develop gradually with authentic experience.* Good instructor relationships motivate me described the need for actively engaged instructors and a safe environment for sharing. The theme, *I share more when I know my peers,* disputes Annand’s (2011) argument documented in Chapter Two where he states that students do not value group work. Several participants in this study stated that peer interactions were highly valued and group work was supportive of participants’ critical inquiry efforts. In addition, this study supported key social presence characteristics such as open to accepting others’ ideas, giving compliments, and sharing. The final theme, *I need to have organic conversations too,* is supported by several social presence tenets including freedom of individual expression, creating a personal identify, sharing expressive emotion, and self-disclosure. Participants also highlighted the importance of free-flowing conversation, and likewise, social presence is described to include persistent discussion and questioning.
**Teaching presence.** Teaching presence is management and instruction of the course, concentrating on the design and facilitation of relationships with learners and content. Instruction that supports teaching presence includes providing content direction and feedback, summarizing discussions and correcting misconceptions, and sharing resources. Design and organization, including setting the curriculum and establishing parameters, also are elements of teaching presence.

These concepts align with themes, *Context shapes my understanding* and *My skills develop gradually with authentic experience*, which highlight the importance of providing the participants opportunities to reflect on previous knowledge and experiences, and work within the context of a patient setting. Defining critical inquiry for common understanding, facilitated through direct instruction, provides guidance, resources, and corrects any misconceptions around the topic. Facilitating discourse where an instructor’s role is shaping peer discussions, establishing a safe and engaging environment, and acknowledging contributions were important for student motivation and sharing, and ultimately online critical inquiry. This was notable in the themes *Good instructor relationships motivate me* and *I share more when I know my peers*. The tenets of teaching presence also aligned with *I need to have organic conversations too* where an instructor’s influential role in how discussions can be designed, supported, and prioritized to support critical inquiry.

**Cognitive presence.** Cognitive presence, for the purposes of this study, is synonymous with critical inquiry. It is defined as students’ ability to make sense of new information and develop for better understanding through reflection and discourse. It is described as reflection on practice and building knowledge through sustained interaction with other learners. A multi-
phased process illustrated in the practical inquiry model enables learners to achieve cognitive presence.

These descriptions, and the multi-phased process, were evident in the themes *Context shapes my understanding* and *My skills develop gradually with authentic experience*. They support the participants’ need for time to reflect on previous experiences and work through authentic patient-centered activities to develop expertise and improve critical inquiry. The process includes a triggering event where learners need to first explore ideas and alternatives, a necessity according to the participants. The role of the instructor, including those previously mentioned, is to support cognitive presence by facilitating the interaction of learners to collaborate and build knowledge. *Good instructor relationships motivate me* reflects the importance of this relationship. In *I share more when I know my peers and I need to have organic conversations too* participants revealed that strong peer relationships were important in sharing information, deep thoughts and ideas; organic conversations allowed for the exploration of those ideas to reach resolution and take action.

Garrison et al. (2000) argued that all three elements (social presence, teaching presence, and cognitive presence) were significant for a student’s rich learning experience. Upon careful review and analysis of all of the participants’ responses, it can be confirmed that social and teaching presence were vital to improving online critical inquiry (cognitive presence). In fact, all six participants stated instructor and/or peer relationships were important for successful critical inquiry in their online course. Even though some students with the same instructor reported different experiences, all agreed instructor and student relationships were important for their critical inquiry. As was detailed in Chapter Two, several studies (Bangert, 2008; Garrison, Cleveland-Innes, & Fung, 2010; Archibald, 2010; Kozan & Richardson, 2014; Lee, 2014)
including this one support the argument that, jointly, these elements are important for online critical inquiry.

These themes, and the recommendations that follow in this chapter, are significant to faculty and instructional designers, providing guidance for designing and developing online courses for critical inquiry (or critical thinking). This is particularly important for nursing education where, more and more, students are being expected to demonstrate critical inquiry proficiency in online environments.

**Discussion of Master Themes in Relation to the Literature Review**

As detailed in Chapter Two, three major threads emerged from the literature review in this study: how critical inquiry is learned, how it is taught, and how online environments influence teaching and learning. The themes are discussed as they relate to the literature threads.

**How critical inquiry is learned.** Where critical inquiry was situated and how much it was previously experienced played a key role in how the six participants understood critical inquiry. Three of the participants described patient care as a necessary context for critical inquiry. Katherine, for example, stated, “I think for what we learn in nursing school, you should be at a bedside constantly assessing a patient.” *Context shapes my understanding* supports Garrison et al.’s (2001) suggestion that context may influence how discourse shapes critical inquiry and their hypothesis that content level (introductory, expert, etc.) may affect how well critical inquiry is supported. In similar fashion, some participants noted that the way they learned critical inquiry varied depending on the experiential or theoretical nature of the course. Participants noted that a different course they were enrolled in, taken simultaneously with the course of study, was more experiential. They were learning critical inquiry through a more practical, hands-on approach affording a more clinic-like experience. The course of study
however was theory-based, where participants felt learning situations were hypothetical and abstract.

Garrison and Archer (2000) argued that teaching critical inquiry within the context of a discipline would improve learners’ understanding of the construct. This contention is only partially addressed by the results of this study. Teaching critical inquiry within particular contexts, without also clarifying the skills associated with critical inquiry, may have possibly narrowed the participants’ understanding. McKendree et al. (2002) asserted that critical inquiry be taught both within the context of the discipline and as a stand-alone topic. This approach may better provide the necessary information for a more successful, consistent, online critical inquiry experience.

How critical inquiry was defined also played a key role in participants’ experience. Laura shared, “I think they [instructors] kind of assume we're supposed to have some sort of idea of it. It's not very explicit, which is why I think some people have problems with it.” de Pastoor (2005) found that students struggled with discourse without the required time to find shared understanding around terminology. Similarly, in this study, participants’ definitions of critical inquiry were associated with previous experience, which were all different. Different experiences and amount of practice with critical inquiry led to inconsistent definitions and meanings. A common, shared understanding could improve critical inquiry.

Participants also needed time to build knowledge. Participants stated that moving from novice to expert and developing critical inquiry skills, including reflection and discourse, happened in parallel, but took time. According to Halpern (1999) and Profetto-McGrath (2003), critical inquiry is a skill or set of skills that are learned over time. Discourse, reflection, and information processing are needed for building expertise (and critical inquiry skills) but require
additional time and guidance due to learners’ inexperience (Colomer et al., 2013; Fernández-Peña et al., 2016; Webb et al., 2008). Critical discourse is particularly important because it can be a way for learners to validate their knowledge during the critical inquiry process (Garrison, 1992). Mroz (2015) found that discourse also addressed students’ knowledge gaps.

In addition to discourse, time to cognitively process information is also important. This literature supports the major premise of the My skills develop gradually with authentic experience theme. It could be argued that the time participants had to build expertise and knowledge (novice vs. expert) contributed to the success of their critical inquiry. Good pedagogical practice would suggest learners with less time and experience need more structure and guidance for successful critical inquiry.

Instructor engagement and guidance was key in the theme Good instructor relationships motivate me. Amanda stated it was helpful when her instructor provided examples of her experience. “She was able to add what she as a staff nurse does identifying a problem, coming up with a solution, things like that.” Others found instructor feedback to be very motivating. Jess, for example, shared, “She actually gave very relevant feedback. It wasn't just like ‘good job.’ She actually just gives insightful feedback and I think that helped and was very motivating.” This supports Chirema’s (2007) finding that instructor guidance improved students’ reflective learning. In his study, students reported the importance of instructors providing feedback and sharing examples.

In addition to guidance, instructor engagement and participation was also important. Jess shared that when her instructor asked her questions it was helpful, “Jess, you talked about this, but what are your thoughts on this? So, she would kind of reciprocate with other questions that were outside of the actual post requirements.” Both O’Donnell (2004) and Garrison et al. (2001)
found that the kinds of questions students were asked influenced their depth of learning. It might be argued that while instructor guidance and engagement are important, how students are guided and engaged (e.g., kinds of questions asked) influences the development of their critical inquiry.

Peer relationships, as highlighted in I share more when I know my peers, were particularly important for feeling safe in sharing information and having respectful disagreements. In explaining the importance of knowing her peers, Katherine said, “Sometimes the conversations get a little heated because people disagree on things. I know that she understands where I'm coming from or she just won't think I'm trying to be mean.” This aligned with Chiu’s (2008) study that found critical discourse could not occur without comfortably sharing information and politely disagreeing, when necessary. This, according to Chiu (2008), leads to the ability to debate new ideas, important in the critical inquiry process.

In I need to have organic conversations too sharing information was found to be easier when organic conversations occurred. While the literature supporting the premise that organic conversations improves critical inquiry was limited, Soter et al’s (2008) research supported these types of discussions. They found that making space for online, informal conversations was important because students who were engaged in more detailed explanations and exploratory talk achieved higher levels of critical thinking and reasoning.

**How critical inquiry is taught.** For this study, critical inquiry was defined as an integrated, iterative process where people engaged in both personal reflection and collaborative discourse through deep reasoning and knowledge creation before drawing conclusions (Garrison, 1992, 2003, 2011; Kanuka & Garrison, 2004). Analogous to Garrison’s (1992) view that critical inquiry was more than ordinary thinking, participants understood critical inquiry to mean something more than rote learning. This was illustrated when Mary asked, “How can you get an
online forum, how do you get required online responses and participation away from rote participation?” While participants could define critical inquiry, their definitions had little consistency. Additionally, many were unsure whether there was a standard, accepted definition. When asked to describe critical inquiry, Amanda hesitated. She said, “So I … The way I think of critical thinking, don’t know if this is right or not, but you’re in a situation. I’m kind of thinking like nursing situation.” As stated in Chapter Two, there are no consistent definitions of critical inquiry across the literature. Context shapes my understanding reinforces this, and suggests that the inconsistency across students was based on different experiences. Gul et al. (2014) points out that one cannot assume educators know what critical inquiry is or how it can be promoted through their teaching (Gul et al., 2014). The same argument could be held that one cannot assume students understand critical inquiry in the same way. Defining critical inquiry, explaining how it relates to practice, and how it will connect to the course materials has been found to improve students’ critical inquiry abilities (Swart, 2017).

In My skills develop gradually with authentic experience most participants correlated critical inquiry with patient situations and experience occurring over time. This correlates to Castledine’s (2010) argument that experience and professional knowledge are the foundation of critical thinking. The theme, however, only partially supports McPeck’s (1990) argument that critical inquiry should be taught within the context of the discipline because students need foundational knowledge before they can apply it. Participants believed experience, built over time, was an essential element to constructing their knowledge to support critical inquiry. While participants agreed foundational knowledge was needed for critical inquiry, they did not specify it had to happen within the context of the discipline. More specifically, they stated that these experiences needed to be authentic; they needed to include working with patients or experts in
the field. This mirrors Martyn et al’s (2014) finding that real-world problems help guide students’ synthesis of information and critical thinking.

The study also found that participants believed good instructor relationships were motivating and supportive of their critical inquiry. This aligned with Bullen’s (1998) research, where he found students needed more instructor facilitation to support critical discussions and peer interaction. Participants in this study also found that personalized guidance and recognition was helpful. Laura stated, “She would look and say, ‘Laura, you've typed the whole thing. Where is the rest of your group?’ which was pretty nice because I did type the whole thing and she recognized that I was working hard.” This reinforces Vonderwell’s (2003) recommendation that online faculty establish one-on-one communications and respond promptly to students.

Participants found strong peer relationships in I share more when I know my peers just as important as instructor connections. The course under study was completed during the first semester of the nursing program, when most participants were unfamiliar with one other. This hindered their ability to share information for critical inquiry. Laura stated, “[I am] definitely more vague about things… when I know the other people in my group, I can kind of target things more towards them in a way that will grab their attention…” Huang et al. (2016) and King (1994) found that activities like peer questioning provided an avenue for students to become familiar with one another, reflect on their current understandings, and build on others’ thoughts. Strong peer relationships were built through questioning where students could get to know one another through sharing and improve critical inquiry.

There was insufficient literature showing a direct correlation between organic conversations and an increase in critical inquiry. I need to have organic conversations too, however, is supported indirectly by the literature related to the use of questions; specifically, how
discussion and follow up questions are asked and structured. They are important considerations for supporting and sustaining the critical thinking process, as illustrated in the practical inquiry model in Chapter Two. Ke and Xie (2009), for instance, found that a combination of both open and closed-ended questions promoted deep learning interactions. Likewise, Huang et al. (2016) stated that the use of probing and peer questioning extended students’ thinking. Structuring discussions with prompts, probing questions, argumentation, and role-play allowed students to achieve higher-level learning (Darabi et al., 2011). Aspects from this type of structure clearly support the need for informal, creative thinking which participants stated was linked to critical inquiry. Elizabeth, for instance, stated, “I don't think it's the creative type of thinking, which I really do believe is so essential to critical thinking.” I need to have organic conversations too reinforces the work of Garrison (1991), Dewey (1933), and Brookfield (1987) recognizing the importance of creative thinking and problem solving for critical thinking.

How online environments influence teaching and learning. The literature shows that there are special considerations for teaching and learning critical inquiry in an online environment. In Context shapes my understanding some participants believed experiential courses included better critical inquiry opportunities than theory-based classes. As stated before, the literature does not necessarily equate experiential coursework to critical inquiry. Based on the themes in this study, there are several factors that may jointly contribute to a better student online experience. One such factor may be realism, defined by Smith and Dillon (1999) as a concrete illustration of abstract concepts. They described how realism supports cognitive processing by helping learners identify and label concepts, enhance transfer of learning, establish learning context, activate prior learning, and participate in experiential learning (p. 14). What this means for this study is that while experiential coursework may not directly correlate to
critical inquiry, attributes like realism are linked to experiential learning and seem to help improve critical inquiry. This appears to correlate with the participants’ views of practical, hands-on coursework versus abstract, theory-based content. Realism also may have played a part in the theme *My skills develop gradually with authentic experience*. For example, when first asked about critical inquiry in the online course of study, Katherine stated it would be difficult to incorporate. She then said however, “We didn't do anything to practice it. [I am] trying to think of how we could have, because you're not with patients. But I guess if you're reflecting upon patient situations.” As mentioned earlier, role-play and modeling are teaching approaches shown to improve critical inquiry. These approaches can easily be facilitated online and Freeman and Capper (1999) found them to be just as effective online as in-person.

In *Good instructor relationships motivate me* participants stated that instructors’ actions had some influence on their participation in critical inquiry. According to Smith and Dillon (1999), instructors often overlook how a particular technology is used or why it was chosen. A better awareness of this may improve how instructor-student relationships are formed. Laura’s instructor, for instance, chose to use a supplementary online tool, Google Docs. “She viewed our Google Docs as we were working on it. We had to give her the link to it so she would look and say, ‘Laura, you've typed the whole thing. Where is the rest of your group?’” Laura appreciated the personal attention and the instructor feedback and engagement. These actions were enhanced by the technology the instructor chose. Additionally, Swan et al. (2000) argued structure, transparency, and communication were of particular importance in an online environment. Jung et al. (2002) found that social interactions from instructors were important for improving student engagement and overall learning outcomes. Supporting these contentions, Laura shared how her
instructor used a more personal communication style and addressed students by name and recognized their work.

In addition to instructor relationships, participants also recognized the importance of peers in *I share more when I know my peers*. Existing research states that students do not always feel connected emotionally or communally during their online experience (Gunawardena & Zittle, 1997; Rovai, 2002; Swan, 2004). While Jess agreed online peer relationships were important she also stated, “Peers I think can be motivating or demotivating.” She explained how cliques within her peer group formed, creating a barrier for building relationships. Amanda, however, focused specifically on how her peer relationship experiences helped facilitate discussion, “Knowing what we're all going through and knowing different personalities I think that helps with posts. And I think it just allows for more meaningful posts.” Different personalities and interpretations led to inconsistent experiences. On the other hand, interacting to build peer relationships and share information for critical inquiry supports Picciano’s (2002) findings that online interactions allowed for multiple perspectives, idea exploration, and deeper reflection.

*I need to have organic conversations too* documents how participants agree that online critical inquiry requires a safe, comfortable learning environment where organic conversations are encouraged. Generally, the timing of posts and student procrastination in the course of study limited critical conversations. For instance, Amanda said, “… timing of how many posts, then what your other classmates are doing because it depends on them. People would basically not respond to anyone and just post their own four thoughts and that counted. Which felt not meaningful.” While Hewitt (2003) surmised from his research that navigation was the primary issue related to unread/no response discussion posts, this study found that competing priorities
and lack of guidance and support were the principal debilitating factors. Additionally, participants perceived better online critical inquiry experiences when they were able to participate in organic, real-time conversations. Jess, for example, stated, “I've never been a fan of discussion boards online unless it - especially the ones that require a certain number of responses. I like in-person, I like the free-flowing thought much more than the mandatory posts.” This assertion is supported by Tu and McIsaac’s (2002) research, in which online communication elements like real-time conversations and online language reflecting tone were important.

**Implications for Practice**

Themes from this study, supported by the theoretical framework and literature, indicate that there are several challenges associated with participating successfully in online critical inquiry. In addition to hindrances, participants were able to share several methods that would improve experience. The following section provides suggestions for students, educators/designers, and programs in relation to the five themes.

For students, there is no single best approach to learn critical inquiry. Based on this study, however, prior experiences frame how critical inquiry is understood. It is important students share their critical inquiry perceptions and experiences. Learners, particularly those at the beginning of a course and program, also need to actively engage in activities that simulate or describe authentic patient situations. These activities can help ground new knowledge. Students’ responsibilities include being active participants in this process as opposed to passively listening to lectures (Wangensteen et al., 2010). Metacognitive exercises, where students reflect about their own thinking, can also improve critical inquiry skills and can easily be completed through individual initiative (Maclellan & Soden, 2012; Pelton, 2014). Students can map out their own
thinking process to better understand how theory and processes connect to patient care (Partosa, 2012). In addition, students should actively engage in opportunities where they can get to know one another and work together. Not knowing peers or not being known by peers in the first semester can make online critical inquiry difficult. Peer relationships are essential to feeling comfortable sharing information, deep thoughts, and ideas. Working towards a trusting, respectful relationship will enable sharing to support online critical inquiry.

In addition to encouraging students to participate in the activities just mentioned, there also are several actions faculty and course designers can take to help improve online critical inquiry. Like learning critical inquiry, the literature suggests there is no single best approach on how to teach it. Based on this study, however, it would seem that critical inquiry should be designed and taught with students’ previous experiences in mind. Critical inquiry may not be consistently experienced if people hold different beliefs about how it is defined or what it looks like. Early in a course, educators should establish a shared definition of online critical inquiry with their learners. Clear expectations for what it looks like and how it can be achieved should be communicated.

These themes also suggest that authentic experiences should be considered. Scenario-based or simulated activities can mimic life-like experiences. Good pedagogical practice would suggest that providing novices with sufficiently structured support and guidance would improve the experience. The literature indicated that modeling, defined as accurately demonstrating something in a public and explicit manner, may be a helpful instructional method for illustrating online critical inquiry (Biggs, 1990; Huang, Lindell, Jaffe, & Sullivan, 2016). Brookfield (2012) provided examples such as instructors who shared personal examples from their own experiences, or explicitly explained their decision-making processes. Encouraging or formally
structuring metacognitive exercises also would improve critical inquiry skills (Maclellan & Soden, 2012; Pelton, 2014). Whichever activities are chosen, educators must offer the necessary time and space learners need to connect information to authentic situations and share with their peers.

In addition to experiences, relationships were vital for online critical inquiry. Instructor-student relationships were found to be important for motivation and peer connections were essential for feeling comfortable sharing information, deep thoughts, and ideas. Opportunities need to be established where students can get to know each other and their instructor. Students may need this before they are able to successfully participate in online critical inquiry. While strong peer and instructor relationships seem to improve online critical inquiry, it is not clear from this study if a single factor alone could support it. While student and instructor relationships were not directly investigated in this study, recent research (documented in Chapter Two) shows that both are needed for improved online critical inquiry. Therefore, the recommendation is to provide an avenue for strengthening both relationships.

Finally, programs should redesign online curriculum to provide sufficient time, space, and accountability for students to engage in deeper conversations that include organic conversations to improve critical inquiry. Consideration may need to be given for finding a balance between academic and personal online discussions to support students’ critical inquiry, recognizing critical inquiry is a process that takes time. If the goal is to have students achieve critical inquiry in online environments, a cultural shift in how online discussions are viewed and utilized is needed. While traditionally, students are rewarded for the quantity of their posts, this study suggests that one of the most important themes to improve online critical inquiry is to move the focus away from quantity of discussion posts and towards depth of the discussion.
Study Limitations

The results of this study are important for online students, educators, and nursing programs. The demographic of students (ABSN students taking an online course with a course goal of critical thinking during their first semester) were important and relevant to this study, however there are limits to how transferable the themes are to other undergraduate disciplines and programs. As previously mentioned, while ABSN students are technically considered undergraduates, they have already earned a Bachelor’s degree. ABSN students are, with all things equal, entering their fifth year of college. They are further along in their educational experience than a traditional college freshman; therefore the themes may not seamlessly transfer to other undergraduate students or programs.

In addition, this study included students taking the same course from the same cohort. It did not include data from students in different cohorts. There is a possibility that students in the same cohort have a groupthink mentality, as one participant suggested during the interviews, tainting views and perceptions about the course or a particular instructor. These results of this study are a single snapshot of a single cohort of students in one program and do not represent views of other students.

Future Research

Most higher education students are now tasked with the goal of becoming competent critical thinkers. This research focused on undergraduate nursing students’ experience with online critical inquiry. There is still a need to better understand which types of learners and which teaching and learning methods best support online critical inquiry.

Future research should look beyond ABSN students and include traditional undergraduate students in various disciplines. It could also examine whether students with more exposure to
online experiences have better online critical inquiry skills than those with less experience. Are experienced online students better online critical thinkers? A different research method could also be chosen. A narrative study could be completed that examines additional data such as online discussion transcripts and notes taken during class. Research that would allow students to share their experiences over time could be conducted to determine how students’ views, based on particular activities, change during the course of a semester.

One could also conduct research that would examine the effects of implementing some of the implications for practice. For example, a study could investigate whether first defining critical inquiry in class helps improve students’ skills over the course of the semester. Does a shared understanding of critical inquiry improve students’ ability to think critically online? Research could also closely examine the role of organic conversations. Do organic conversations improve online critical inquiry? A comparison study could include informal and formal conversations integrated into online discussion and look for differences in critical inquiry.

**Personal Reflection**

This research study has had positive influences on both my professional and personal life. I have been an instructional designer for over 18 years and rarely get to spend time with students. I admit I was a little nervous to meet with them. I was not sure how willing they would be to open up and share what challenged their learning -- not just what appeared on the surface but what they were really feeling and experiencing. They were courageous and deeply honest about their struggles, feelings, and successes. They knew they were taking part in a research study to help me complete my dissertation but they were also very aware that what they had to share would help all the students who followed in their footsteps. They were eager to be a part of it.
While the goal in higher education is to have students think critically, we still have work to do. The online environment further complicates this with a heightened need for “presence” and course management. While there is existing literature on teaching and learning critical inquiry, there is no clear path to a single solution. It is my job, as an instructional designer, to help faculty navigate this winding road. This study illuminates several key changes, including examining students’ prior experiences to create a shared definition of critical inquiry, grounding learning activities in patient situations, and encouraging organic conversations, that I can start integrating into our online course design decision-making process. I will continue this work by exploring different streams of this research, asking more questions, and growing as a scholar practitioner.

Finally, this experience has already had an impact on how I view my own children’s academic experiences. I no longer take a success or challenge at surface level. I dissect what is being shared, looking for underlying meaning. I ask more questions to clarify my understanding. I think about what related literature would support my understanding. The research experience has not only strengthened me as a scholar-practitioner and parent, but I hope to impart some of that understanding on to my children so that they can better recognize what helps and hinders their own learning.
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Dear Faculty Member,

My name is Victoria Wallace and I am one of the instructional designers here at the Institute. I provide teaching and course design support for faculty through workshops, resources, and one-on-one consultations. I am also currently a student in the Doctor of Education program at Northeastern University.

I am currently conducting a study for my doctoral thesis and am seeking research participants. I have identified your online course [course number] as a potential research site for student participants because it outlines critical thinking as a course goal. I am asking for your help in letting students know about this research study. I have attached a letter that I would like you to share with your students.

I have received permission from your Dean and both Spaulding Rehabilitation and Northeastern University’s Institutional Review Boards (IRB) to conduct a qualitative study with six nursing students. I am researching undergraduate-nursing ABSN students’ first year experiences with critical inquiry in an online course. My goal is to raise awareness of critical inquiry in online courses and highlight the challenges and successes students’ experience.

Six students, whose names will remain confidential, will be chosen for the study. Any interviews I conduct will be under strict university protocol, which gives the interviewee the right to withdraw at any time. Interviews will take place in the fall of 2016 and will be conducted at a time and place most convenient to each participant. The interviews will in no way disrupt the education of students. I plan to share the results of the study with the nursing program and the participants.

Thank you in advance for your time and consideration. Besides this email, I can be reached by cell phone: [Redacted].

Sincerely,
Victoria L. Wallace
EdD Candidate
Northeastern University, Boston, MA
Appendix B: Student Recruitment

Dear Student,

My name is Victoria Wallace and I am a student in the Doctor of Education program at Northeastern University. I am currently conducting a study for my doctoral thesis and am seeking research participants.

I am researching undergraduate-nursing students’ first year experiences with online critical inquiry (critical thinking). My goals are to raise awareness of critical inquiry in online courses by highlighting the challenges and successes that students’ experience and improve future course designs. I would like to invite you to participate in this study.

For this study, I am recruiting ABSN students that have completed [course number], [course name] during their first year of study in Spring 2016. Six students will be chosen for the study and will be notified by email as soon as possible. Study participants will be asked to:

- Sign a consent form agreeing to interview and audio recording
- Participate in a 60 - 90 minute interview
- Review text transcripts for accuracy
- Participate in a brief second interview (less than 30 minutes) for follow-up questions, if needed after reviewing the transcript.

In total, these interactions are expected to take no more than two hours of your time. A copy of the interview questions will be emailed so you can review them in advance. Interviews will take place at a time and place most convenient to you. All students who participate will be given a $25 gift card for Amazon.com.

Your confidentiality will be maintained at all times. Any interviews I conduct will be under strict university protocol, which gives you the right to withdraw at any time.

Thank you in advance for your time and consideration.

Sincerely,
Victoria L. Wallace
EdD Candidate, Northeastern University, Boston, MA
cell phone: [redacted]
email: Wallace.v@husky.neu.edu
Appendix C: Participant Consent Form

Northeastern University, College of Professional Studies, Doctor of Education

| Name of Investigator(s): | Dr. Karen Harbeck, Victoria L. Wallace |
| Title of Project: | Exploring Online Critical Inquiry Experiences of First Year Undergraduate Nursing Students in a Northeast American College: An Interpretive Phenomenological Analysis |

Informed Consent to Participate in a Research Study

We are inviting you to take part in a research study. This form will tell you about the study, but the researcher, Victoria L. Wallace, will explain it to you first. You may ask this person any questions. When you are ready to make a decision, you may tell the researcher if you want to participate or not. You do not have to participate if you do not wish to do so. If you decide to participate, the researcher will ask you to sign this statement and she will give you a copy to keep.

Why am I being asked to take part in this research study?

We are asking you to be in this study because you were a first year ABSN student who, in Spring 2016, completed the online course, [course number], which highlighted critical thinking as a course objective.

Why is this research study being done?

The purpose of this research is to explore and identify the challenges and success students’ experience with critical thinking in online environments.

What will I be asked to do?

If you decide to take part in this study, we will ask you to:
- Participate in one semi-structured 60-90 minute interview to talk about your experiences with critical thinking in an online environment.
- The interviews will be scheduled preferably face-to-face. If a face-to-face interview is not possible, interviews will be scheduled using a technology such as Skype™ or Google Hangouts™.
- You retain the right to decline answering any questions at any time.
- With your permission, the interview will be recorded with a digital voice recorder and saved as an MP3 file for later transcription by a confidential third party, Rev.com.
- After your interview has been transcribed, it will be sent to you to check for accuracy and clarification.
- Participate in a brief second interview (less than 30 minutes) for follow-up questions, if needed after reviewing the transcript.

Where will this take place and how much of my time will it take?

- You will be interviewed at a time and place that is convenient for you.
- The interview will take approximately 60-90 minutes.
- A week or two after the interview you will be emailed a copy of your interview transcript to check for accuracy and clarification. This will take approximately 30 minutes.
- A brief second interview (less than 30 minutes) may be scheduled, if needed for follow-up
questions.

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<th>Will there be any risk or discomfort to me?</th>
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<td>There are no foreseeable risks or discomfort. However, there may be an emergence of negative or distressful feelings in completing the interviews by examining influences or negative experiences related to your online education. Any question that induces discomfort for you may be declined.</td>
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<th>Will I benefit by being in this research?</th>
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<td>There will be no direct benefit to you for taking part in the study however, the time spent reflecting on your own learning and the information learned from this study may help with your future online learning experiences.</td>
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<th>Who will see the information about me?</th>
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<tr>
<td>Your part in this study will be confidential. Only the researchers on this study will see the information about you. No reports or publications will use information that can identify you in any way.</td>
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Your interview transcripts will be cleaned of identifying information and a pseudonym will be assigned to you. Data will be stored either on a password-protected, encrypted laptop or in a locked cabinet at my home. The consent forms, as well as the pseudonym database, will be kept in a separate locked location. All data will be kept for a minimum of five years after publication of research, in accordance with the American Psychological Association’s (2010) recommendations.

In rare instances, authorized people may request to see research information about you and other people in this study. This is done only to be sure that the research is done properly. We would only permit people who are authorized by organizations such as the Northeastern University’s and Spaulding Rehabilitation’s Institutional Review Board to see this information.

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<th>What will happen if I suffer any harm from this research?</th>
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<td>No research-related injuries (i.e. physical, psychological, social, financial or otherwise) are likely in this research. No special arrangements will be made for compensation solely because of your participation in this research.</td>
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<th>Can I stop my participation in this study?</th>
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<td>Your participation in this research is completely voluntary. You do not have to participate if you do not want to and you can refuse to answer any question. Even if you begin the study, you may quit at any time. At any point in time, you may withdraw from this study without explanation, penalty or consequences of any kind. Your participation or nonparticipation will not affect your relationship with Northeastern University or any other organization.</td>
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<th>Who can I contact if I have questions or problems?</th>
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<tr>
<td>If you have any questions about this study, please feel free to contact the student researcher, Victoria L. Wallace, Doctor of Education Program, Northeastern University, Telephone:</td>
</tr>
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</table>
Email: wallace.v@husky.neu.edu. She is the person mainly responsible for the research. You can also contact Dr. Karen Harbeck, Faculty Advisor, Doctor of Education Program, Northeastern University, Telephone: 781-572-4628, Email: k.harbeck@neu.edu, the Principal Investigator.

**Who can I contact about my rights as a participant?**
If you have any questions about your rights in this research, you may contact Nan C. Regina, Director, Human Subject Research Protection, 490 Renaissance Park, Northeastern University, Boston, MA 02115. Tel: 617.373.4588, Email: n.regina@neu.edu. You may call anonymously if you wish.

**Will I be paid for my participation?**
You will be given a $25 gift card to Amazon.com at the conclusion of the interview.

**Will it cost me anything to participate?**
There is no cost to participate in this study.

**Is there anything else I need to know?**
You must be at least 18 years old to participate.

**I agree to take part in this research.**

Signature of person agreeing to take part  Date

Printed name of person above

Signature of person who explained the study to the participant above and obtained consent  Date

Printed name of person above

Depending upon the nature of your research, you may also be required to provide information about one or more of the following if it is applicable:
1. A statement that the particular treatment or procedure may involve risks to the subject (or to the embryo or fetus, if the subject is or may become pregnant) which are currently unforeseeable.
2. Anticipated circumstances under which the subject’s participation may be terminated by the investigator without regard to the subject’s consent.
3. Any additional costs to the subject that may result from participation in the research.
4. The consequences of a subject’s decision to withdraw from the research and procedures for orderly termination of participation by the subject.
5. A statement that significant new finding(s) developed during the course of the research which may be related to the subject’s willingness to continue participation will be provided to the subject.
6. The approximate number of subjects involved in the study.
Appendix D: Interview Protocol

Interviewee:                      Interviewee’s Instructor:

Interviewer: Victoria Wallace     Date/Time:

Location of Interview:

******************************
Interview

Part 1: Interview Introduction

Thank you for taking the time to meet with me today. My name is Victoria Wallace and I am enrolled in the Doctor of Education program at Northeastern University. I am interviewing six undergraduate students in the ABSN nursing program who have taken [course number] during their first year of study. I have chosen this particular course because critical thinking is one of the course objectives.

The interview should take no longer than 90 minutes. I will be recording the session because I do not want to miss any of your comments and I want this to feel more like a conversation. The results of this interview will inform the findings and conclusion for my dissertation project.

Because we are being recorded, please be sure to speak clearly so that I don’t miss your comments. I want to assure you that all responses will be kept confidential. Your interview responses will be included in my paper but will be completely anonymous. I will ensure that any information I include in the report does not identify you by name or title.

You do not have to talk about anything you do not wish to and you may end the interview at any time. Are there any questions about what I have just explained?

Verify informed consent:

• Have you read and do you understand the consent document sent to you by email?
• Do you have any questions?
• Do you agree to the terms of participation in this study?

Describe the study:

According to the literature, critical thinking, a required competency for nursing students, can be difficult to achieve in online environments. My goal is to raise awareness of critical thinking and highlight the challenges and successes students experience in online environments.
Review the research questions:

**Primary question.**
How do undergraduate nursing students describe their first year experience with critical inquiry in an online course on nursing history and theory?

**Secondary questions.**
What experiences do they describe as helpful in learning critical inquiry skills in this online course?

What experiences do they describe as a hindrance in learning critical inquiry skills in this online course?

**Part 2: Questioning**

*I'd like to start by asking you some more general questions related to your background and education.*

1. Which course section were you enrolled?
2. Tell me about your previous education. Other degrees? Online experience? Was critical thinking ever talked about in your previous education?

*Now I would like to talk about the term “critical thinking or critical inquiry”.*

3. When you hear the term ‘critical thinking,’ what comes to mind? What does it mean to you? Why?

*If student does not understand the meaning of critical thinking say:*

*There are many ways to articulate the concept of critical thinking. It can be thought of as a process of active engagement. Through discourse and reflection a person can conceptualize, apply, analyze, synthesize, and/or evaluate information to make empirically based decisions or solve a problem. It is a form of complex learning. So, where recalling or memorizing information is at the bottom of a knowledge pyramid (like for instance in Bloom’s Taxonomy), critical thinking is found at the top where higher-order learning occurs.*

4. Tell me about the School of Nursing’s expectation for students to critically think. How do you feel about this? How important is it to be able to critically think? Why?

*Now let’s talk more specifically about your experiences in the course [course number]*

5. This was a required course that included a goal of ‘critical thinking’.
   a. Before starting, how did you expect critical thinking would be taught online?
   b. How did you feel about learning it online? – Why did you think that?
   c. Did you know what your instructor expected of you in the class? How?
6. If you experienced critical inquiry/thinking during the course, describe for me when it happened. If not - Explain to me why you did not experience critical inquiry/thinking.

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<th>If critical inquiry was experienced:</th>
<th>If critical inquiry was NOT experienced:</th>
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| 7. Describe the interactions and relationships in the online course. How did these make your critical thinking an easier task? More challenging?  
  • Tell me about any new ideas you discovered though interaction in this online course. What made it easy? What made it challenging? | 7. Describe the interactions and relationships in the online course. When could these have included opportunities for critical thinking? Explain. |
| 8. Tell me about the course activities and materials related to critical thinking in the online course. What helped promote your critical thinking? Why? What was missing? Why?  
  • Can you tell me about a specific lesson or assignment that you think cultivated high-levels of critical thinking for you? Why do you feel that this assignment/lesson was so effective? | 8. Tell me about the course activities and materials in the online course. Where could there have been opportunities for critical thinking? How would that work? What was missing? Why? |
| 9. Describe how the online course was taught. In what ways did the instructor try to get your class to think critically? What helped promote your critical thinking? Why? What was missing? Why? | 9. Describe how the online course was taught. What would have helped promote critical thinking? Why? What was missing? Why? |

10. How important was it to feel connected with your peers and comfortable during the online course? What kinds of things did you share? What did you learn about each other? What was the instructor’s role in this?

11. What was your impression of the course design and instruction? Why? What kinds of things did/should the instructor do to improve the course design and instruction? What was essential/missing in the course? Would you recommend this course to your friends? Why? How important was the course design and instruction to your motivation and satisfaction of the course? Why?
12. Talk about a time you integrated information using various resources, shared and exchanged ideas, or debated deeply over a topic with your peers in the online course. Walk me through the process. What were your private thoughts during this process? Were you and your peers able to reach a resolution or create a solution? What was essential/missing during this process? What kinds of things did the instructor do to help you? What was missing? Were/are you able to apply this to future work (school and/or practice)? Explain.

13. Is there anything else you would like to add before we conclude?

Part 4: Wrap-Up

Thank you, that concludes the interview.

If I have a need to ask any follow-up questions, would you prefer I contact you via e-mail or telephone?

In a few weeks, I will email you a transcript of your interview. If possible, I would like you to review the information and provide me with any feedback, alterations, or corrections.

Also, if I have any clarifying questions after reviewing the transcript, I will contact you to schedule a brief follow up meeting. Can you please confirm the e-mail address you would like me to use?

Once this study is complete, would you like to receive an electronic copy of the document?

Do you have any questions for me?

Thank you so much for your participation in this study!