# UNDERGRADUATE EDUCATION STUDENTS' EXPERIENCES IN ONLINE COOPERATIVE LEARNING ACTIVITIES: AN EMBEDDED SINGLE-CASE STUDY

by

Jennifer Lynette Ervin

Liberty University

A Dissertation Presented in Partial Fulfillment

Of the Requirements for the Degree

Doctor of Education

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## ABSTRACT

The purpose of this intrinsic case study, which followed a single-case, embedded research design, was to understand undergraduate education students' experiences in online cooperative learning environments. Garrison, Anderson, and Archer's community of inquiry model, rooted in Vygotsky's sociocultural theory of learning and Tinto's student integration theory, were used to guide this study and describe the significance of fostering strong social, cognitive, and teaching presence within online learning environments. To further understand online educational environments the following central research question was posed: How do undergraduate education students describe their experiences with cooperative learning activities within an online education course in terms of social, cognitive, and teaching presence? Subquestions investigated peer interactions, cognitive engagement, and engagement with the instructor and the instructional tools used. The setting for this study was an online teacher education course at a mid-sized postsecondary institution in which cooperative learning activities were embedded in the instructional activities, referred to herein as University of Learning. Participants were identified via purposeful criterion sampling procedures, based on enrollment in EDTE 402. Data were collected and analyzed from course materials, semistructured interviews with 10 participants, and a focus group discussion conducted with volunteer participants. A thick, rich description of the case was gained from fracturing the collected data, member checks, expert reviews, and triangulation. Findings indicated that infusing cooperative activities in online teacher education courses will promote high levels of social, cognitive, and teaching presence within virtual learning settings, leading to increased student learning outcomes.

*Keywords:* case study, community of inquiry, cooperative learning, online learning, postsecondary education, undergraduate education

## Copyright Page

## Dedication

To my best friend and husband, Matt, I could not have completed this journey without your belief in me. From the first time I mentioned my desire to pursue a doctoral program, you were supportive and encouraging. Thank you for always praying with me and helping me to keep my focus on the most important goal: to glorify the Lord, Jesus Christ. With your guidance and backing, I have been able to work to accomplish this goal, so I may continue to serve Him. Thank you, Matt.

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Thank you to my Lord and Savior, Jesus Christ, to whom I owe all. It is only by His grace that I am able to serve Him daily. This degree is His and will be used to glorify Him.

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## List of Abbreviations

Community of Inquiry Model (CoI)

Institutional Review Board (IRB)

National Council for Accreditation of Teacher Education (NCATE)

Theory of Transactional Distance (TD)

Zone of Proximal Development (ZPD)

# CHAPTER ONE: INTRODUCTION

## Overview

Chapter One includes an overview of the research conducted to explore how undergraduate education students describe their experiences with cooperative learning activities within an online education course in terms of social, cognitive, and teaching presence. The chapter is divided into eight sections: (a) Overview, (b), Background (c) Situation to Self, (d) Problem Statement, (e) Purpose Statement, (f) Significance of the Study, (g) Research Questions, (h) Definitions, and (i) Summary.

A general background of online learning programs and platforms is presented to provide an overview of the problem of the study. Particular aspects of the historical, social, and theoretical contexts pertaining to online learning are examined. A brief explanation of my personal motivation for seeking to conduct this study follows is described in the "Situation to Self" section, including specifics pertaining to my personal research paradigm and particular ontological, epistemological, and axiological assumptions.

Following the "Situation to Self," descriptions of the problem statement and the purpose statement are delineated. Specifically, the purpose statement section includes the theoretical framework for this study and how the theories framed, guided, and informed the research. The Purpose statement is followed by the "Significance of the Study," which addresses the practical, empirical, and theoretical significance of this study. The central research question and the subsequent research questions follow the purpose statement. A list of pertinent terms presented in the study are defined in the "Definition of Terms" section, and the chapter closes with a restatement of the problem and purpose of the study in the "Summary" section.

## Background

Online learning programs are available for students of all age and grade levels world-wide (Christensen, Horn, & Johnson, 2011). Virtual learning platforms and programs vary greatly in their structure and composition, which makes comparing online learning programs with respect to their attributes difficult. However, what appears to be common across many postsecondary online learning programs is a lack of student "connectedness" to the learning community (Hart, 2012). A large body of research currently exists pertaining to ways to increase students' perceptions of connectedness with their online learning environment (Capra, 2014; Hart, 2012; Hung, Flom, Manu, & Mahmoud, 2015; Kuo, Walker, Belland, & Schroeder, 2013), but little information is currently available regarding students' perceptions of their own learning and engagement within online educational settings that incorporate cooperative learning activities.

Current educational research suggests students learn best when they are actively engaged in learning experiences (Christensen, Horn, & Johnson, 2011; Hattie, 2009; Kagan, 1994; Kyndt et al., 2013). In the traditional brick-and-mortar educational environment, engagement may include participants in a given learning environment communicating with colearners via in-depth discussions about material presented or stimuli introduced in the learning environment. Students may be observed talking about the information they have been presented, or they may be creating artifacts or deliverables pertaining to the material being investigated (Hawkins, 2015). Engagement in the online learning environment, however, may be more difficult to describe or observe. In this increasingly digital world, it is critical that online learning environments provide students the needed level of engagement to increase learner outcomes and provide the greatest

educational opportunities for those who opt to participate in online learning programs (Dietz-Uhler & Lanter, 2012; Quaye & Harper, 2015).

**Historical Context**

Educational methods and practices have changed dramatically throughout history (Barkley, 2010; Christen, Horn, & Johnson, 2011; Nilson, 2010; Schaeffer, 2005; Vygotsky, 1978). Educators continue to search for the most effective practices for engaging students in the learning process regardless of the context in which the learning takes place (Christensen, Horn, & Johnson, 2011). As technological advances arise, digital resources become more readily available to individuals across the globe. Concurrently, the desire for personalized learning grows, and traditional methods of educating students of all age, grade, and mastery levels become obsolete (Christensen, Horn, & Johnson, 2011). Incorporating traditional methods of teaching and learning within the context of the digital age, though, has proved to be effective in recent studies (Capra, 2014; Ching & Hsu, 2013; Dietz-Uhler & Lanter, 2012; Jong, Chen, Chan, Lin, & Hsia, 2012; Oyarzun & Morrison, 2013). As the number of individuals participating in online learning environments continues to rise, it is critical that information is gained regarding the experiences that individuals have within these digital educational environments. Additionally, since many future educators across the globe participate in online learning courses and programs, it is essential that information is gleaned pertaining to the experiences teacher education students have within these learning settings.

Specifically, it is important to investigate the experiences students have with cooperative learning activities. To date, many research studies document the positive effects of cooperative learning activities on student learning and engagement in traditional brick and mortar educational settings at the elementary, secondary, and tertiary levels (Kagan, 1994; Kyndt et al., 2013).

Information is lacking with respect to student experiences with cooperative learning activities in online educational settings. There is recent research available that details student perspectives of collaborative learning techniques in online educational settings, but more information is needed regarding the context in which the collaborative learning activities take place (Oyarzun & Morrison, 2013; Shadiev, Hwang, & Huang, 2015; Xin, 2012; Xu, Du, & Fan, 2015). Filling this gap in the literature by investigating the experiences of students who participate in online courses that incorporate cooperative learning activities at the postsecondary educational level, specifically with regard to teacher education courses, is critical to ensuring that online educational programs are providing students engaging, enriching, and stimulating learning experiences.

**Social Context**

With the continual increase in online learners world-wide, it is critical that effective instructional methods and learning activities are employed through such learning environments, and that students participating in these online educational programs perceive themselves as actively engaged in their learning programs (Quaye & Harper, 2015). Capra (2014) and Du, Ge, and Zhang (2012) presented data that suggest specific factors should be addressed in online learning programs to increase the potential of student engagement; by addressing these specific factors, student perceptions of engagement and learning within online educational environments may be positively impacted. This information is critical to investigate as the number of online learners and online learning programs continues to rise across the globe. Additionally, with the increase in online educational programs, future educators must be prepared to teach effectively in online learning settings, so they are able to address the increasing desire for online and personalized learning options (Christensen, Horn, & Johnson, 2011). Furthermore, since many

future educators are receiving their training through online teacher education programs, it is essential that these individuals aspiring to be educators be exposed to effective, engaging online learning platforms and settings in their own online experiences so they are best equipped for utilizing effective methods in their future instructional positions (Nilson, 2010).

**Theoretical Context**

Because online learning programs will likely continue to grow, it is important that effective educational methods and practices for online learning be identified in order to develop effective online learning, planning, and delivery methods. Effective instructional delivery methods for online learning can be identified that may foster a sense of community and engagement among the learners in the online course or setting, which will likely increase overall student satisfaction with the learning program (Ku, Tseng, & Akarasriworn, 2013). Through the lens of Garrison, Anderson, and Archer's (1999) community of inquiry model, influenced largely be Tinto's (1975) student integration theory and Vygotsky's (1978) sociocultural theory of learning, the current research study encompassed a detailed, thorough description of the context of the experiences of undergraduate education students within an online educational environment that incorporates cooperative learning activities in an effort to understand these students' experiences, which may inform future planning and delivery of online educational courses and programs.

## Situation to Self

My motivation for conducting this study was to enhance online learning programs by increasing the focus on cooperative learning activities. As a Christian, I believe in the ultimate authority of God's Word as presented in the Holy Scriptures. The words of David in the book of Psalms explain that every individual is uniquely and wonderfully made in the image of the

Father (Psalm 139:14, English Standard Version [ESV]). The words of the Apostle Paul explain that every believer in the Lord Jesus Christ is given specific gifts that are to be used for the glorification of the Father, and through working together with one another we will be as one unified body able to do good works for His glory (I Cor. 12:1-20, ESV). Although this is a fallen world and people are sinful in nature, I believe it is innate within all people to desire to work together and learn from one another just as the Lord has placed within us all a desire to seek Him.

I hold to the constructivist paradigm and have approached this research study from the assumption that individuals learn best in social settings. Although I am not a strict constructivist, I do believe the Lord created us as social learners who gain knowledge first from the Holy Scriptures, but also from one another (Prov. 27:7, ESV). "Learning experiences are social in nature and cannot be separated from the social context where learners develop their sense of identity" (Oyarzun & Morrison, 2013, p. 182). Through the sociocultural theory of learning, Vygotsky (1978) further supported this claim by describing learning as a social process that is dependent upon the social contexts in which individuals exist; specifically, Vygotsky held that social interactions are fundamental to individuals' cognitive development. This theory suggests individuals learn best when they have an opportunity to interact with new information and material while engaging with others (Oyarzun & Morrison, 2013; Vygotsky, 1978).

As an educator and an educational leader in the secondary and postsecondary setting for the past 16 years, I have observed educational practices in the classroom setting that tend to yield higher student engagement and increased student outcomes. I have also observed those instructional activities that tend to yield decreases in student engagement and lower cognitive understanding of the content being investigated. Through cooperative learning activities, I have

observed students become personally engaged in the information being presented as the individuals work with one another in small group learning activities that require all the team members to be interdependent to produce a quality product, meeting specific guidelines and expectations. After engaging in such activities, students have demonstrated deepened understanding of topics, concepts, skills, or ideas, as posited in Vygotsky's (1978) sociocultural theory of learning.

As a learner, I have experienced an increase in motivation and concept mastery when I am tasked with actively discussing an issue and solving a problem with a small peer group. I have personally noted how my understanding of issues and situations are deepened when involved in such learning settings. As an online instructor for courses at the undergraduate and first-year graduate levels, I have observed how a change in discussion-based online learning platforms to independent research with little to no discussion with peers has decreased the level of perceived student engagement and mastery of course material demonstrated by students in such courses.

Although there is a large body of literature available pertaining to the importance and effectiveness of cooperative learning activities on student engagement and student learning at the elementary, secondary, and tertiary levels, there is little research available that addresses students' experiences in online cooperative learning activities. As a participant in online learning programs, I have personally experienced cooperative learning activities in insolation within a specific course. I have experienced benefits from such activities, and I became motivated to understand how education students in the online postsecondary setting perceive these learning activities. Ultimately, I am interested in using the findings from such an investigation to inform curricular planning, instructional delivery methods, and overall online

learning program planning specifically for postsecondary undergraduate teacher education courses. The information gained from this study may also benefit program planning and instructional delivery for other online postsecondary and secondary courses.

## Problem Statement

The problem of this study was to understand undergraduate education students' experiences with cooperative learning activities within online educational environments with respect to social, cognitive, and teaching presence. Currently, a wealth of information exists in the recent literature about the impact of cooperative learning activities on student learning and engagement in traditional brick and mortar educational settings at the elementary, secondary, and tertiary levels (Kagan, 1994; Kyndt et al., 2013). There are also ample research studies regarding the popularity of online learning world-wide (Christensen, Horn, & Johnson, 2011). Recent studies suggest online learning environments provide opportunities for students to engage in personalized learning plans that promote maximized learning potential of individuals in convenient settings (Ching & Hsu, 2013; Christensen, Horn, & Johnson, 2011; Hung et al., 2015). However, there is a gap in the literature when investigating the experiences of students who participate in online courses that incorporate cooperative learning activities at the postsecondary educational level, specifically regarding teacher education courses. Few published research studies provide an in-depth understanding of the context for undergraduate education students' experiences in online cooperative learning activities. A review of literature conducted by Chia-Wen, Pei-Di and Yi-Chun (2013) suggests that although online education continues to grow in popularity, research is needed to determine what constitutes meaningful learning in online settings, and this study seeks to address this gap in the research with respect to postsecondary online education courses.

## Purpose Statement

The purpose of this case study was to understand undergraduate education students' experiences in online cooperative learning environments with respect to social, cognitive, and teaching presence (Creswell, 2017; Yin, 2014). For the context of this research, cooperative learning activities were generally defined as small, heterogeneous groups of learners working together to achieve a common goal (Kagan, 1994). The theory used to guide this study was Garrison et al.'s (1999) community of inquiry model, which is rooted in Vygotsky's (1978) sociocultural theory of learning and Tinto's (1975) student integration theory, as it describes the significance of fostering strong social, cognitive, and teaching presence within online learning environments.

## Significance of the Study

This study drew upon previous empirical research and relevant field studies by examining the personal experiences of undergraduate education students who have participated in online courses that incorporate cooperative learning activities. Previously published studies have investigated how students perceive online learning courses (Capra, 2014; Dietz-Uhler & Lanter, 2012; Gedera, 2014; Kuo et al., 2013; Smidt, Bunk, McGrory, Li, & Gatenby, 2014), and several research studies have been conducted to closely examine the impact of collaborative factors on learning within online settings (Du, Ge, & Xu, 2015; Du et al., 2012; Ku et al., 2013; Madland & Richards, 2016; Xu et al., 2015). This present research study included a synthesis of the information gleaned from the available empirical research to create a description of the context in which undergraduate education students experience cooperative learning activities within an online educational environment.

Recent research suggests postsecondary students who are enrolled in online courses often report feelings of "disconnectedness" from their peers and instructors, which may lead to a reduced interest in the content and course information in general (Capra, 2014; Garrison et al., 1999; Karp, Hughes, & O'Gara, 2011). Moreover, research investigations of fully online programs indicate postsecondary students who participate in such learning environments often report feelings of disconnectedness not only from peers and the instructor of their courses, but also from services and resources available from the institution in which they are enrolled, potentially reducing the students' personal investment in the program and the institution as a whole (Christensen, Horn, Caldera, & Soares, 2011; Hung et al., 2015; Xin, 2012).

**Theoretical Significance**

As digital learning at all educational levels continues to grow world-wide, it is critical for current and future educators to understand the experiences of students who participate online learning environments and to identify the best methods for delivering instruction in such settings (Chia-Wen, et al., 2013; Christensen, Horn, & Johnson, 2011; Christensen, Horn, Caldera, et al., 2011). Specifically, Hart (2012) reported that the level of engagement an individual has with his or her learning environment in the online setting is a critical factor in his or her persistence and overall success in the online learning environment. Thus, educators must understand how to best utilize online learning modules and platforms to maximize student acquisition of content material, individual and group engagement in learning, and overall student achievement while fostering a sense of connectedness among the students within the learning community (Hung et al., 2015).

Because online learning programs will likely continue to grow (Christensen, Horn, & Johnson, 2011), it is important that effective educational methods and practices for online

learning be identified, which may then enhance online learning program planning and delivery methods. By implementing this current study, effective instructional delivery methods for online learning were identified. Implementation of similar effective instructional methods may foster a sense of community and engagement among the learners in the online course or setting, which could positively affect overall student satisfaction with online learning programs (Ku et al., 2013).

**Empirical Significance**

Recent research suggests when online learners are engaged in activities that require them to actively communicate with their peers in the specific course or program, connectedness to the learning environment increases, and the potential for internalizing the material is also enhanced (Ching & Hsu, 2013; Dietz-Uhler & Lanter, 2012; Hung et al., 2015). As the popularity of online learning programs rise, the effectiveness and efficacy of online learning environments has begun to be questioned. The ways students engage with the content and course material as well as how they interact with their peers and instructors have been a focus of scrutiny for online learning settings and programs. Previous studies have noted the many variables that contribute to delivery methods within online learning programs and platforms make drawing conclusions about the effectiveness of such programs difficult (Christensen, Horn, Caldera, et al., 2011; Gedera, 2014). The community of inquiry model (Garrison et al., 1999) provided a framework on which to base the level of social, cognitive, and instructional interactions that have been identified as critical factors in effective online learning environments (Hung et al., 2015).

Previous studies suggest students who participate in small discussion groups within online learning settings receive the highest potential for a positive learning experience (Akcaoglu & Lee, 2016; Crosta et al., 2016). Through targeted interactions with peers about course content,

the potential for the participants to internalize the course material is heightened as the students engage with the material in various ways. Research further suggests when students in online learning programs are engaged in activities that foster positive interdependence, group cohesion and student engagement is promoted, potentially leading to increased student learning outcomes (Akcaoglu & Lee, 2016; Crosta et al., 2016).

It was the intent of this research to better understand undergraduate education students' personal experiences with cooperative learning activities in the online setting with respect to social, cognitive, and teaching presence. Personal perceptions pertaining to how individual students experience interactions with course material within the online learning setting offer unique insights into the efficacy of specific tasks and assignments. Beckman and Weber (2016) and Breivik (2016) specifically noted the importance of maintaining high levels of cognitive presence within online learning settings to maximize student learning and engagement. By investigating individual students' perceptions of their experiences with cooperative activities in online learning environments in the current study, information was gained to evaluate how intentionally implemented cooperative activities are experienced by undergraduate online education students.

Recent research from Capra (2014), Huang et al. (2016), and Hung et al. (2015) indicated teaching presence also has a strong influence on student learning outcomes and should not be overlooked when examining student perceptions and learning within the online educational setting. According to Capra (2014), social and cognitive presence is directly impacted by the way course activities within the online environment are designed. These data may impact the instructional design for online education courses and programs worldwide as well as overall online education program delivery.

**Practical Significance**

As online learning grows in popularity and in practical implementation, future educators must be prepared to teach effectively in online learning environments, preparing them to address the increasing desire for online and personalized learning options (Christensen, Horn, & Johnson, 2011). Furthermore, since many future educators are receiving their training through online teacher education programs, it is essential that these individuals aspiring to be educators be exposed to effective, engaging online learning platforms and settings in their own online experiences so they are best equipped for utilizing effective methods in their future instructional positions (Hawkins, 2015; Nilson, 2010).

This study was conducted to reveal important information for future and current online education students as well as those involved in planning online education course design and implementation of online learning methods. Insights gained from the data sources may enable those serving in online program planning to make explicit adjustments to course structures and implementation methods to best meet the needs of the students served in virtual learning environments. The results of this study may assist educational practitioners in preparing and implementing structured cooperative activities within course tasks that foster positive interdependence, individual accountability, equal participation, and simultaneous interaction (Kagan, 1994).

Data gained from this research study may also offer educational practitioners specific insights into the most effective methods for incorporating cooperative activities within the online learning environment. Previous research indicates it is important to ensure activities are intentionally structured to incorporate aspects of effective groupings so enriched dialogue is fostered (Du et al., 2015; Jolliffe, 2007; Jong et al., 2012). The way online discussions are

planned and executed within the online learning setting is one specific aspect of online instructional planning that may strongly impact overall social, cognitive, and teaching presence. Gaining students' perceptions of their personal experiences with intentionally designed online cooperative discussions and interactions provides key themes and concepts that helps inform continuous improvement planning and best practices in online learning.

From a planning, designing, and integrating perspective, the present study has great practical significance. Any individuals involved in the design of online course activities, schedules, and platforms may benefit from information pertaining to students' experiences with cooperative activities in the online learning setting. Effective instructional planning and delivery methods should be a focus regardless of the age, grade level, or program focus. From the classroom teacher to the online college course designer, every individual involved in the field of education may benefit from the data available from this research.

## Research Questions

The research questions for this study were viewed through the theoretical framework of the community of inquiry (CoI) model (Garrison et al., 1999), which is rooted in the works of Vygotsky's (1978) sociocultural theory of learning and Tinto's (1975) student integration theory, making the participants' perceptions of their experiences extremely important in this research study. The focus of this investigation was to understand undergraduate education students' perceptions of online cooperative learning activities with respect to social, cognitive, and teaching presence.

## Central Research Question

How do undergraduate education students describe their experiences with cooperative learning activities within an online teacher education course in terms of social, cognitive, and teaching presence?

Online learning environments provide freedom and flexibility in the way learners participate in courses and content, but current research indicates that such educational platforms and programs lack in their ability to create a strong sense of community among the learners (Gedera, 2014; Hart, 2012; Hung et al., 2015; Xie & Huang, 2014). Creating engaging online learning environments in which all members of the learning community feel connected to the content and to one another is essential to developing enriching online learning experiences for all parties involved in the learning experience (Smidt et al., 2014).

Building the strong learning community necessary for engaging online learning programs to exist requires intentional planning of engaging and rigorous learning activities that incorporate structured interactions among teachers and learners (Kanuka, 2011; Karp et al., 2011; Smidt et al., 2014; Xin, 2012). More specifically, teacher and learner behaviors and the learning environment directly impact social, cognitive, and teaching presences in online learning settings (Garrison et al., 1999). Furthermore, the level of social, cognitive, and teaching presence within the online learning environment impacts learners' understanding and the degree to which learners collaborate with one another through online instructional activities (Garrison et al., 1999).

## Research Subquestions

**SQ1:** How do undergraduate education students describe their interactions with peers within cooperative learning activities in the online learning environment?

Social presence is critical to developing a sense of community and connectedness among participants within online learning environments (Garrison et al., 1999). More specifically, social presence is the foundation for participants of an online learning environment to overcome barriers to connectedness innate to distance learning programs (Garrison et al., 1999). Oyarzun and Morrison (2013) explained that social presence comprises three specific aspects: "effective communication, open communication, and group cohesion" (p. 185), and suggested that cooperative activities lead to higher levels of social presence among online learning participants.

**SQ2:** How do undergraduate education students describe their cognitive engagement during cooperative learning activities within the online learning environment?

The CoI model suggests that cognitive presence refers to "the extent to which community participants are able to construct meaning through sustained communication" (Oyarzun & Morrison, 2013, p. 186). Thus, through continual communication with students within an online learning environment, the students will gain knowledge and insights pertaining to the material presented (Oyarzun & Morrison, 2013). Furthermore, the learning experiences in which the students engage must be relevant to the course objectives and require detailed exploration of the content (Oyarzun & Morrison, 2013). Capra (2014) supported this claim: "Learning activities, whether they are designed to harness social interaction or assess a student's understanding of the course content, must be constructed in a meaningful manner correlated to learning objectives" (p. 117). Consequently, it is critical that learning experiences within online settings engage participants in activities that require continual communication with others about content central to the learning objectives.

**SQ3:** How do undergraduate education students describe their experiences with their instructor and the instructional tools during cooperative learning activities within the online learning environment?

Teaching presence has a strong impact on the sense of community among online learning participants (Oyarzun & Morrison, 2013). Garrison et al. (1999) explained that teaching presence is critical within online learning environments as it creates the context in which learning activities take place. Specifically, Garrison et al. (1999) identified three aspects that comprise teaching presence, which must be addressed within the planning and implementation of the learning environment: (a) instructional management, (b) building understanding, and (c) direct instruction. It is important to note, though, that these aforementioned factors that comprise teaching presence may be facilitated by learners in the online community and do not need to be directed by the instructor of the course as highlighted by Capra (2014): "Encouraging students to depend on each other to attain mastery of the material may lead students to realize that classmates can support learning, not just the professor" (p. 117).

## Definitions

1. *Cognitive Presence* - For the purpose of this research, cognitive presence is defined as the extent to which participants of the learning community are able to construct meaning from discussions with their colearners (Garrison et al., 1999).
2. *Community of Inquiry (CoI)* - Community of inquiry is defined for this study as a group of individuals who collaboratively engage in communication to construct meaning and mutual understanding pertaining to material under that is under investigation (Garrison et al., 1999).

3. *Cooperative Learning* - In this research, cooperative learning is generally defined as small, heterogeneous groups of learners working together to achieve a common goal (Kagan, 1994).
4. *Integration Theory* - Integration theory holds that students who are socially and academically connected to an institution are more likely to persist to completion of a program or degree (Tinto, 1975).
5. *Online Learning* - For the purpose of this research**,** online learning is generally defined as learning that takes place in a fully online educational setting.
6. *Social Presence* – For this study, social presence is defined as the ability of learners to project themselves as real people within a learning environment (Garrison et al., 1999).
7. *Sociocultural Theory of Learning* - Sociocultural theory of learning holds that learning is a social process dependent upon the contexts in which individuals exist and the interactions they experience, which are fundamental to individuals' cognitive development (Vygotsky, 1978).
8. *Teaching Presence* - For the purpose of this research, teaching presence is generally defined as the overall facilitation of learning within the online setting constructed through the course structure and tools used to implement instruction (Garrison et al., 1999).

## Summary

This chapter included a description of the purpose of the study. Specifically, a brief overview of the background of the problem, details pertaining to the problem statement, the research question, and a description of the significance of this study were provided. Particulars

regarding the historical, social, and theoretical contexts were presented, in addition to a brief explanation of my personal motivation for conducting this study. An overview of research methods was also detailed, and definitions of specific terms pertinent to the study were provided.

Chapter Two includes a description of the theoretical framework for this research, along with a review of existing literature pertaining to cooperative learning in online settings. Specifically, the CoI model (Garrison et al., 1999) is detailed, which is the theory on which this study was grounded. Following a description of this seminal work and the theoretical framework on which this study relied, a synopsis of related literature pertaining to the history and evolution of online learning, collaborative and cooperative learning techniques, and cooperative learning in the online setting is presented.

# CHAPTER TWO: LITERATURE REVIEW

## Overview

Chapter Two includes a theoretical framework for the study and a review of relevant existing literature pertaining to the experiences of students who participate in cooperative learning activities in the traditional brick-and-mortar and online learning educational settings. There is a large body of research to suggest that cooperative learning activities promote student engagement, and high levels of student engagement increases student learning outcomes (Kagan, 1994). However, there is little research available detailing the experiences of students who participate in online learning environments that incorporate cooperative learning activities. Furthermore, few studies exist that provide insights into how postsecondary education students experience cooperative learning activities in terms of social, cognitive, and teaching presence within online learning environments. With the increase in online learning, it is critical that research be conducted to understand the experiences of students who participate in online learning environments that incorporate cooperative learning activities. This research study provided an opportunity to fill this gap in the current literature regarding student experiences with cooperative learning activities in the online educational environment.

This chapter includes a description of the theoretical framework for this research as well as a review of existing literature pertaining to cooperative learning in online settings. Specifically, the CoI model is detailed, which is the theory on which this study was grounded (Garrison et al., 1999). This theory relies heavily on the works of Vygotsky's sociocultural theory of learning (1978) and Tinto's student integration theory (1975). Following a description of these seminal works and the theoretical framework on which this study is founded, a synopsis of related literature pertaining to the history and evolution of online learning, collaborative and

cooperative learning techniques, and cooperative learning in the online setting is presented. The chapter closes with a brief introduction into the contents of Chapter Three.

## Theoretical Framework

The online educational environment is unique in that the format allows students to individualize their own learning experiences (Christensen, Horn, & Johnson, 2011). Freedom to structure class and study periods to individual schedules through asynchronous class meeting times enables learners to attend classes at times that are convenient and best suited to their individual situations (Hart, 2012). Although online learning environments provide freedom and flexibility in the way learners participate in courses and content, recent research indicates that such educational platforms and programs are lacking in their capability to create a strong sense of community among the learners (Gedera, 2014; Hart, 2012; Hung et al., 2015; Xie & Huang, 2014). Creating engaging online learning environments in which all members of the learning community feel connected to the content and to one another is essential to developing enriching online learning experiences for all parties involved in the learning experience (Smidt et al., 2014).

To build engaging and enriching online learning experiences, it is critical that all members of the learning community are connected to one another via multiple mediums. Hung et al. (2015) provided evidence that learners need to feel a sense of connectedness to their learning environment in order to overcome the barriers created by distance learning models and claimed that it is critical for learners to participate in direct communication with one another in order for connectedness to the learning community to be fostered. Specifically, Hung et al. (2015) found that learning is a social construct and "the sense of community, connectedness, and

membership are the key psychological constructs that fulfill the interdependence component in a community" (p. 236).

Building the strong learning community necessary for engaging online learning programs to exist requires intentional planning of engaging and rigorous learning activities that incorporate structured interactions among teachers and learners (Kanuka, 2011; Karp et al., 2011; Smidt et al., 2014; Xin, 2012). Teacher and learner behaviors and the specific aspects of the learning environment impact social, cognitive, and teaching presences in online learning settings (Garrison et al., 1999). Social, cognitive, and teaching presence impact learners' understanding and the degree of learners' collaboration in online educational activities. The level of collaboration that takes place in the online learning environment is impacted by the manner by which meaning is constructed among the online learners. The interrelatedness of the learners' construction of meaning and the learners' online collaboration impacts the implementation of online cooperative learning activities which, in turn, affects student perceptions of engagement and learning.

**Sociocultural Theory of Learning**

Vygotsky's (1978) sociocultural theory of learning describes learning as a social process that is dependent upon the social and cultural contexts in which individuals exist. Specifically, this theory holds that interaction within social constructs plays a fundamental role in an individual's cognitive development. Additionally, the sociocultural theory of learning framework holds that individuals learn first on a social level, and then internalize information on an individual level. Through communicating with others about information and stimuli presented, people process the material on a surface level of understanding, and then make personal connections to the information on a higher cognitive level (Vygotsky, 1978). With this

framework as the foundation, it would follow, then, that effective and meaningful instruction should be presented in a manner that facilitates social communication pertaining to the content being presented.

Central to Vygotsky's (1978) sociocultural theory of learning is the concept of the zone of proximal development (ZPD), the gap between an individual learner's actual knowledge of a concept or stimuli and that learner's potential of mastering the given concept or stimuli when collaborating through problem solving activities with an adult or more capable peers (Vygotsky, 1978). "The zone represents a phase in development where a person is unable to perform a task alone but can eventually accomplish and internalize it with the help and supervision of someone more experienced" (Zeuli, 1986, p. 2). It is this aspect of Vygotsky's (1978) theory that strongly supports the importance of learners working cooperatively in small groups to increase comprehension and mastery of content material. Specifically, with this concept as a critical foundation of the theoretical framework on which this study is founded, it is important that instructional delivery focus on stimuli and material being discussed among participants of the learning groups to deepen individual members' comprehension and understanding. "Instruction should emphasize connections to what the learner already knows in other familiar, everyday contexts" (Zeuli, 1986, p. 7). It is through the social connections and interactions that familiar contexts are established so information being presented may be more easily internalized and comprehended by the members of the learning environment (Vygotsky, 1978; Zeuli, 1986). Furthermore, the continual discussions that take place within the learning groups encourage deeper connections to be made in the social context first, and then internalized by the individual on a higher cognitive level (Vygotsky, 1978).

## Student Integration Theory

Tinto's (1975) student integration theory holds that students enter college with varying levels of academic preparedness and integrate into the institution's academic and social systems at different degrees. Tinto (1975) presented a comprehensive model for student integration into institutions to predict and possibly reduce attrition within college courses and programs; specifically, students' commitment and motivation to persist to degree completion within any given program and institution is maximized when their academic and social integrations within those programs and institutions are positive. Tinto (1975) presented four areas of integration students experience within college settings: (a) goal commitment, (b) institutional commitment, (c) academic integration, and (d) social integration.

Tinto (1975) stated, "Given individual characteristics, prior experiences, and commitments, the model argues that it is the individual's integration into the academic and social systems of the college that most directly relates to his continuance in that college" (p. 96). Tinto's (1975) work provides critical support for the claim that students must feel a sense of connectedness within their learning environment in order to receive the greatest benefit from their educational program and setting. When students feel they are connected to their program and institution through relationships with the peers, instructors, and service providers, they are more likely to be personally invested in these same programs and institutions, which increases the potential for the students to continue through degree completion (Karp et al., 2011; Tinto, 1975).

## The Community of Inquiry (CoI) Model

Borrowing distinctive features from both Vygotsky (1978) and Tinto (1975), Garrison et al. (1999) developed a systematized model that provides a detailed framework for investigating

student experiences in educational settings with respect to social, cognitive, and instructional facets. According to the CoI model, "learning occurs within the Community through the interaction of three core elements" (Garrison et al., 1999, p. 88). These three core elements are (a) cognitive presence, (b) social presence, and (c) teaching presence (Garrison et al., 1999). Rooted in social constructivist educational theories on learning, the CoI model draws upon social learning and development theories to build a basis for framing social learning in an online educational environment.

Harkening back to the works of John Dewey, Garrison et al. (1999) stated, "Education is a collaborative reconstruction of experience" (p. 92). According to Garrison et al., through the CoI model, collaboration among members of the online learning community will likely foster strong interpersonal relationships among the participants of the learning environment, leading to increased engagement with the content and higher potential for student achievement. Specifically, Garrison et al. (1999) claimed that educators today face a unique challenge when attempting to create communities of inquiry within virtual learning environments, and highlight specific methods for increasing social, cognitive, and teaching presence within online settings.

Furthermore, Garrison et al. (1999) suggested, "When social presence is combined with appropriate teaching presence, the result can be a high level of cognitive presence leading to fruitful critical inquiry" (p. 96). Through the establishment of a strong social presence within online learning environments, open communication among the learning community members may be built. These open lines of communication may potentially lead to strong cohesion among group members, thus potentially leading to deeper learning and understanding being fostered within the learning environments (Garrison et al., 1999).

### Marrying the Community of Inquiry Model and Cooperative Learning

Garrison et al. (1999) provided a strong foundation for understanding the importance of creating CoIs within online learning environments. Specifically, though, this research study served to marry the CoI model with the key tenets of cooperative learning. A detailed, thorough description of the context of the marriage of the CoI model and cooperative learning activities in an online postsecondary education course may provide valuable insights into effective teaching and learning practices for online educational environments at the primary, secondary, and postsecondary educational levels. By seeking to understand the experiences of undergraduate education students within an online community of inquiry environment that incorporates cooperative learning activities, significant information may be gained that could help shape online educational courses and programs across the globe, specifically in the area of teacher education.

## Related Literature

The following review of related literature includes current research and literature pertaining to the state of online learning as well as cooperative learning activities in educational settings. Also included are a brief history of online learning, a description of CoIs, a close look into cooperative learning in various educational settings, and the impact of intentional student grouping on educational experiences and learning within online learning environments.

### A Brief History of Online Learning

Online learning programs first emerged in the late 1990s as the expansion of existing distance learning programs began incorporating Internet-based platforms to support student-teacher interaction (Bowen 2015; Kentnor, 2015). With the rapid advances in technology and communication methods occurring in the late 1990s, many educational programs took advantage

of technological advancements to improve teaching and learning practices both in the traditional brick-and-mortar setting as well as the distance learning environment (Christensen, Horn, & Johnson, 2011). With its roots in distance education dating back to the early 18th century (Kentnor, 2015), online learning has evolved from individuals emailing static research reports, receiving summative feedback, and submitting summative assessments, to participants engaging in real-time dialogue with peers and instructors through collaborative text, audio, and video tools (Lack, 2013).

Kentnor (2015) explained that online educational programs were born out of corporations offering professional development to their employees in the late 1980s, paving the way for the expansion of online learning programs to the postsecondary educational level in the late 1990s, and later to primary and secondary school levels. Studies show that online learning grew with such popularity since its initial emergence that by the year 2008, more than 4.8 million students were enrolled in online postsecondary educational programs (Kentnor, 2015). According to research conducted by Kentnor (2015), approximately one third of students who are currently enrolled in higher education programs are taking courses in online formats, indicating the success of this particular learning environment.

The draw to online learning programs is likely due to its innate accessibility factor (Bowen, 2015; Christensen, Horn, Caldera, et al., 2011; Nilson, 2010). Online programs are bent to meet individual needs by allowing learners to determine the context in which they learn best within the parameters of the learning setting (Bowen, 2015; Christensen, Horn, & Johnson, 2011; Kentnor, 2015). Moreover, online educational programs break barriers to learning for many individuals who may not be able to physically attend academic courses at a brick-and-mortar

location, or for those who have financial barriers based on the cost of commuting to classes or living on campus (Christensen, Horn, Caldera, et al., 2011).

Although the popularity of online learning programs is clear, the effectiveness of these learning environments is less apparent. It is difficult to draw conclusions regarding the efficacy of online learning programs throughout recent history since there are many variables contributing to differing delivery methods of online learning platforms and programs across the globe (Christensen, Horn, & Johnson, 2011; Gedera, 2014). However, it is possible to examine particular aspects of various online learning programs and the manner by which such educational settings are changing the way educators teach and learners process material presented to them (Christensen, Horn, Caldera, et al., 2011; Nilson, 2010). One specific aspect of online learning programs that dramatically influences the efficacy of the programs is technological limitations. As advances in technology have been made, online learning programs have continued to make improvements to the manner by which learners interact with content. In her research of online learning programs, Gedera (2014) specifically highlighted the benefit of utilizing synchronous learning activities that incorporate real-time video dialogues between learners and instructors paired with asynchronous activities to support the learning experience. The findings from Gedera's (2014) research also suggest that the audio and video features within online learning platforms promote effective feedback between participants in the learning environment, which is critical to student learning and achievement (Barkley, 2010; Nilson, 2010).

**Communities of Inquiry**

Dialogue between participants within the educational environment is critical to engagement and learning in traditional brick-and-mortar and online educational settings (Gedera, 2014; Nilson, 2010). Specifically, within the online educational environment, dialogue among

participants is vital to creating a culture of community and cohesion which promotes student learning (Garrison et al., 1999; Golding, 2015; Karp et al., 2011; Hung et al., 2015; Pilcher, 2016). Fostering community within the learning environment increases the potential for learners to feel connected to one another and "helps bond students to the broader social communities of the college" (Tinto, 1975, p. 613). It is this basic premise on which the idea of social presence within the CoI model is established.

**Social presence.** Social presence refers to the ability of "participants in the community of inquiry to project their personal characteristics into the community, thereby presenting themselves to the other participants as 'real people'" (Garrison et al., 1999, p. 89). It is through social presence that individuals build a culture of community, which fosters a free exchange of ideas and encourages participants to make connections to content presented within the learning environment. Furthermore, "socio-emotional interaction and support are important and sometimes essential in realizing meaningful and worthwhile educational outcomes" (Garrison et al., 1999, p. 95). This assumption holds that learning is a social process, influenced by personal perspectives and emotions shared among participants within the learning group.

By interacting with peers through engaging dialogue, participants in online learning settings not only receive information about the material being presented, but they are encouraged to think critically about the information and interact with their peers to share personal perspectives regarding the content. This process of examining material from multiple perspectives promotes a culture of engagement and fosters deepening of understanding (Hattie, 2009; Nilson, 2010). In a recent study, Akcaoglu and Lee (2016) found that students who participate in small discussion groups of no less than three and no more than five students per group within online learning settings receive the highest potential for a positive learning

experience. Akcaoglu and Lee found this range of students offers the greatest potential for deep discussion and engaging dialogue to take place among all group members, building group cohesion and promoting enriching discourse. Akcaoglu and Lee's (2016) research suggests that when students in online learning programs are engaged in activities that adhere to the positive interdependence tenant of cooperative learning, group cohesion and student engagement in the learning process is promoted. This research supports the need for this study by highlighting the positive interrelation of online learning activities and specific tenants of cooperative learning.

Recent research by Crosta, Manokore, and Gray (2016) also supports Akcaoglu and Lee (2016), suggesting that connectedness is critical to building group cohesion within online cooperative learning groups, and thus positively impacting interdependence and overall learning outcomes. Crosta et al. (2016) further claimed that without a strong social presence, a true CoI is unable to be fostered. Specifically, Crosta et al. found that of the 13 participants comprising six men and seven women, the majority of the participants indicated that they did not believe their modules provided an opportunity to get to know their group members on a level that yielded "support, encouragement, and closeness" (p. 54) with group members, which ultimately led to their perception of decreased connectedness to their learning group.

**Cognitive presence.** Cognitive presence is "the extent to which the participants in any particular configuration of a community of inquiry are able to construct meaning through sustained communication" (Garrison et al., 1999, p. 89). Because cognitive presence refers specifically to the extent to which individuals within a learning community construct meaning from the communication in which they engage, it is likely that cognitive presence is directly influenced by the level of social presence within any given CoI. Recent studies suggest that high levels of cognitive presence may be linked to high levels of student engagement and higher-order

thinking skills (Breivik, 2016; Kuo et al., 2013), which may be the result of the dialogue required to create a strong social presence with a community of inquiry. Specifically, research from Kuo et al. (2013) suggests that cognitive presence may be strongly influenced by activities that require collaboration and problem-solving skills within the online learning environment.

Similarly, Beckman and Weber (2016) used the CoI model to guide an investigation into the significance of cognitive presence in online discussion forums. With the CoI as the theoretical framework for the study, the researchers sought to engage the learners in "collaborative and reflective processes" (p. 53) that required participants to maintain "sustained communication" via online threaded discussion posts (p. 53). To ensure that participants in this study engaged in critical thinking as a part of the online discussion activities, Beckman and Weber (2016) crafted tasks for the cooperative group members that required individuals to assess their own arguments and rationales in addition to dissecting and assessing their group members' reasoning. This approach to interdependent reasoning and metacognition was intended to increase among all group members positive peer discourse, individual accountability, equal participation, and simultaneous interaction in the learning process, which are all tenants of cooperative learning (Kagan, 1994).

However, it is not just the social and cognitive presences that comprise a community of inquiry. To build a strong community of inquiry, teaching presence must also meet an appropriate level to promote effective learning experiences for all members of the specific group of learners (Garrison et al., 1999).

**Teaching presence.** Defined by Garrison et al. (1999) as the combination of the educational experience design and the facilitation of the learning experiences, teaching presence is dependent upon a strong instructional design and implementation plan. As a result of

advances in technology since the creation of the community of inquiry model, teaching presence has evolved in many online learning environments to more effectively support both social and cognitive presence (Hung et al., 2015; Jones, 2011). By designing instructional activities that encourage and promote positive peer interactions and dialogue pertaining to course content, social and cognitive presence will likely increase within a given community of inquiry (Capra, 2014).

Fostering an atmosphere of communication and engagement among learners within an online learning environment may increase the potential for participants to acquire skills and knowledge from the instructional activities. "The importance of creating interaction is often guided by the assumption that social construction of knowledge is essential for learning" (Oyarzun & Morrison, 2013, p. 182). Oyarzun and Morrison's (2013) statement supports the idea that online learning environments must be designed to promote and facilitate engaging discourse among learners in an effort to foster higher order thinking and problem-solving skills with respect to the content material being examined. Furthermore, Oyarzun and Morrison (2013) state, "learning experiences are social in nature" (p. 182), which further suggests that instructional programs within online learning settings should be designed in such a manner that students are participating in activities that encourage them to interact with one another on a level that requires students to connect to each other through meaningful interactions.

The manner by which learners interact with their instructional environment influences how the given participants process information presented in the particular learning setting. In a recent study, Huang, Chandra, DePaolo, and Simmons (2016) found that when interactive communication tools requiring students to participate in structured dialogue within online learning settings were incorporated, participants reported higher perceptions of learning and

satisfaction with the online learning experience. The research conducted by Huang et al. (2016) was rooted in the theory of transactional distance (TD) which holds that dialogue, course structure, and learner autonomy are integral to the learning process (Moore, 1993). According to TD, dialogue, course structure, and learner autonomy interact to impact an individual's overall learning experience in any instructional setting (Moore, 1993). Moore's (1993) work provides additional support for the CoI model's focus on learner engagement and interaction within online learning settings and emphasizes the importance of creating structured learning activities that incorporate authentic, relevant evaluation practices (Huang et al., 2016).

Like Huang et al. (2016), Capra (2014) suggested learning activities should be designed to promote peer interactions that foster investigation and evaluation of the material presented. Moreover, learning activities should encourage "students to depend on each other to attain mastery of the material" (Capra, 2014, p. 117), as this may result in students realizing that they can learn from one another on a deeper level than might be possible if only receiving information from an instructor. This point is further supported by Vygotsky's (1978) sociocultural theory of learning and the ZPD, which highlights the importance of learners gaining knowledge from their peers within social settings (Zeuli, 1986).

To promote the potential for online learning programs to have strong communities of inquiry via social, cognitive, and teaching presence, it is important to consider a particular instructional method which has been observed to promote high levels of student engagement known as cooperative learning. Within traditional brick-and-mortar educational settings, cooperative learning, which includes specific tenants to build positive peer interactions, has been observed to promote positive learning outcomes (Kagan, 1994).

**Cooperative Learning**

Cooperative learning "requires pupils to work together in small groups to support each other to improve their own learning and those of others" (Jolliffe, 2007, p. 39). At the core of cooperative learning is the idea that all members of a small cooperative group are actively participating in the prescribed learning activities in order for maximized student engagement and learning to take place. According to Kagan (1994), four specific elements are integral to cooperative learning activities: (a) positive interdependence, (b) individual accountability, (c) equal participation, and (d) simultaneous interaction. The cooperative learning model holds that it is through the strategic integration of these aforementioned aspects that true engagement in the learning process takes place as students work together to achieve common goals (Kagan, 1994; Oyarzun & Morrison, 2013). For cooperative learning settings to be effective, instructional environments should be student-centered utilizing various modes of communication; the goal should be to build community in the learning environment through a combination of active and social learning via peer interactions (Christensen, Horn, & Johnson, 2011; Davidson & Major, 2014; Slavin, 2011).

Cooperative learning requires the continued commitment of all group members to engage with the texts or material presented. Each team member must actively participate in given activities in order to benefit fully from the learning experiences. Rooted in Vygotsky's (1978) sociocultural theory of learning, cooperative learning activities rely heavily on group participants engaging in dialogue and various types of interaction with their group members in an effort to formulate ideas, concepts, or skills (Davidson & Major, 2014; Kagan, 1994; Nilson, 2010).

Cooperative learning activities emphasize the importance for individuals within a given environment to work together to achieve shared goals. This approach counters individualistic

learning in which learners work to achieve goals in isolation of their peers (Johnson & Johnson, 2014). Although it is important for individuals to be able to meet goals and expectations on their own, the cooperative learning approach promotes attainment of personal learning goals within a supportive environment that encourages all to gain skills and master concepts through engaging interactions with one another. Such a learning environment mimics the workplace, and thus facilitates the building of career readiness skills emphasized in current K-12 and postsecondary education programs, which is an added benefit to the implementation of cooperative learning activities within educational settings (Johnson & Johnson, 2014).

**Tenets of cooperative learning.** Cooperative learning methods are effective only when all tenets of the instructional methods are held as it is the integration of these aspects that create an engaging learning environment (Jolliffe, 2007). Positive interdependence refers to scenarios that require all members of the cooperative group to depend on one another to complete a given task; this type of experience promotes cooperation among group members and facilitates strong team building and problem-solving skills (Davidson & Major, 2014; Kagan, 1994). Individual accountability refers to each member of the cooperative group being held publicly accountable for an aspect of the group assignment (Davidson & Major, 2014; Kagan, 1994). The third tenet of cooperative learning, equal participation, refers to all students participating in the instructional activities at the same rate and frequency via various approaches and questioning techniques. The final tenet, simultaneous interaction, refers to at least half of the individuals in any group of learners is offering ideas at any given time (Davidson & Major, 2014; Kagan, 1994).

**Cooperative learning and student achievement.** Chen and Wang (2013) compared the effects of traditional lecture-based instructional methods with those of cooperative learning methods within a college English course at Hebei University in China and found that “students

instructed by means of cooperative learning performed significantly better" than those instructed only by traditional lecture methods of instruction in speaking and listening competencies (p. 1261). In addition, Chen and Wang also found that students who were instructed via cooperative learning methods reported higher rates of satisfaction with the learning process than the students that were instructed through traditional lecture approaches. Furthermore, Chen and Wang found that "cooperative learning helped improve their social relationships" (p. 1262) as a result of being placed in small, heterogeneous groups in which the group members were observed learning from one another rather than learning only from their instructor. Chen and Wang's study results support the claim that cooperative learning methods increase student engagement and maximize student learning potential, possibly as a result of the focus on cooperative learning's four major tenets as previously noted.

In a study conducted by Madland and Richards (2016), 31 individuals enrolled in an online graduate course participated in a cooperative learning activity referenced as the "study buddy activity," which was geared to increase student-student interaction within the online learning environment. Incorporating the key tenants of cooperative learning, at the close of the study buddy activity, 88% of the individuals who participated in the voluntary cooperative learning experience indicated that they would recommend the activity as a method for supporting personal learning and enhancing online interaction.

Additional research supports the findings of Chen and Wang (2013) and Madland and Richards (2016) through a close investigation of networked learning in higher education. Cronin, Cochrane, and Averill (2016) provided specific insights into the potential impact that cooperative activities implemented through web tools and online learning platforms may have on student engagement and overall learning outcomes within online learning settings in the

postsecondary education environment. Specifically, Cronin et al. suggested that online learning platforms provide a unique venue for learners to engage in the learning process in a manner that promotes student comfort and safety since learners have the opportunity to preview course material and review thoughts and ideas prior to responding in a non-threatening learning space.

Although research has provided evidence that cooperative learning yields positive student learning outcomes (Chen & Wang, 2013; Kyndt et al., 2013; Madland & Richards, 2016), Capra's (2014) cautioned educators and program planners to be certain that learning activities are carefully constructed to address the specific objectives for each crafted learning experience to ensure that learning tasks are directly tied to course objectives, providing learners a clear learning goal. In addition, Capra (2014) highlighted a critical aspect of instructional planning and delivery, which is echoed in the work of Lewis and Wang (2015).

Through a detailed study aimed to create an orientation program to help online adjunct faculty at a postsecondary educational institution build competencies that would assist them in effectively facilitating online courses, Lewis and Wang (2015) found that exposing adjunct faculty to online cooperative learning activities resulted in the adjunct faculty members being better prepared for online course facilitation at the postsecondary level. Specifically, Lewis and Wang reported, "the cooperative instructional model promoted learner-to-learner interactions" (p. 111) and "encouraged accountability and a positive attitude about the online learning environment" (p. 111). The cooperative atmosphere yielded a self-directed learning environment that fostered collaboration among peers to meet learning objectives and increased overall participant connectedness to individuals participating in the orientation course (Lewis & Wang, 2015). Data presented by Lewis and Wang support the idea that cooperative learning activities within online learning environments increases the potential for connectedness among course

participants, and for improving teacher preparation programs through exposure to cooperative activities in online learning platforms within education courses.

Tombak and Altun (2016) further supported the previously stated suggestions that cooperative learning may positively impact student engagement and overall learning outcomes. In a study to examine the effects of cooperative learning on student motivation and achievement at the university level, Tombak and Altun (2016) implemented a mixed-methods design with two hypotheses: (a) cooperative learning increases student motivation at the university level and (b) cooperative learning has a positive effect on student artifacts at the university level.

Pre- and postmotivation questionnaires were given to participants enrolled in a course focused on differentiation taught by a single instructor at a Turkish university; the participants in the study ranged between 18 and 25 years of age. Document analysis of participant artifacts of learning was paired with an evaluation of the pre- and postmotivation questionnaires to determine study findings. Tombak and Altun (2016) found that the implementation of cooperative learning activities at the university level positively impacted student motivation with respect to intrinsic value, learning belief, and self-efficacy. Through document analysis of the participants' artifacts of learning, the researchers also found that the participants integrated cooperative learning activities into their lesson plans, presentations, and other artifacts of learning, which indicated that these participants internalized the cooperative learning activities as important to differentiated instructional practices (Tombak & Altun, 2016).

These data suggest when students are actively engaged with a small group of their colleagues in the exploration of information and stimuli presented before them, the students become the center of the learning process and ultimately create their own journey through learning as a direct result of the interdependency on one another (Tombak & Altun, 2016). This

interdependency among group members may indicate an increased level of perceived social presence within the small cooperative groups since the individuals are immersed in a learning environment that emphasizes learning as a social process, dependent upon the free exchange of ideas and experiences of group members (Garrison et al., 1999).

Cooperative learning activities have resulted in reports of increased student connectedness to the learning environment and reduced stress and anxieties that often accompany speaking or presenting in public settings (Madland & Richards, 2016). Moreover, according to research conducted by Dietz-Uhler and Lanter (2012), "cooperative learning leads to achievement efforts, positive relationships between students, and psychological health" (p. 382). Johnson, Johnson, and Smith (2014) furthered this claim with respect to the impact of cooperative learning activities in university settings and found that such learning experiences have been tied to increased achievement in student knowledge attainment, problem-solving skills, retention of content, and reasoning skills.

It is through the positive peer interactions that participants within the small cooperative learning groups are provided opportunities to learn and grow within a nonthreatening educational setting, maximizing student learning potential (Jolliffe, 2007; Jong et al., 2012; Kyndt et al., 2013). Madland and Richards (2016) stated, "From the Socratic dialogue of the ancient Greeks to the academic debates characterizing the advent and modernization of universities, one of the defining features of quality educational experiences has been interaction" (p. 158). When learners engage in meaningful social interaction through which content material is being examined, they may process and internalize information effectively, which likely leads to higher levels of student achievement and mastery of content (Vygotsky, 1978; Zeuli, 1986).

**The Significance of Intentional Student Grouping**

The manner by which students are grouped is an important aspect of effective cooperative learning planning and implementation (Jolliffe, 2007). At the primary and secondary educational levels, it is common practice to organize cooperative learning groups by ability levels (Jolliffe, 2007). At the postsecondary educational level, though, organizing by ability level is not as commonplace, nor is it as practical since ability levels are likely not as obvious or as accessible to college instructors or professors. Thus, cooperative groups are more often organized at the postsecondary level by randomized grouping or via experts within groups based on educational backgrounds or occupations (Kagan, 1994).

Intentional student grouping affects the overall experiences that participants have when engaging in cooperative learning activities (Du et al., 2015; Kagan, 1994). Data gathered during a study to investigate online cooperative learning activities and the experiences of postsecondary African American female students suggest that participants in online cooperative learning activities may prefer to work in heterogeneous groups as opposed to homogenous cooperative groups (Du et al., 2015).

Information gained from the Du et al. (2015) is limited; only African American female students enrolled in a master's level education course at a southeastern United States public university were included as participants. However, Du et al.'s in-depth interviews with the nine participants provided critical insights into the perceptions of the participants and their experiences with cooperative learning activities in the online environment at the postsecondary educational level. Specifically, Du et al.'s participants' perceptions of the impact of student grouping on their experiences were of particular interest in regard to the present study. Findings from Du et al. (2015) suggest that individuals planning cooperative activities in an online

learning environment should consider the backgrounds of their participants, and whenever possible, create heterogeneous cooperative learning groups to maximize the potential for rich dialogue among the group participants. These findings are in harmony with research indicating the importance of social presence in communities of inquiry, and thus should be considered when developing online learning cooperative learning activities.

Jong et al. (2012) highlighted how intentional student grouping may be implemented at the postsecondary level, though, using a computerized program. In this quantitative study implementing a correlational design, the researchers selected 30 students to be part of an experimental group and 30 students were randomly selected to be part of a control group. The 30 students in the experimental group were selected based on the knowledge complementation grouping strategy (Jong et al., 2012) for cooperative learning, and then divided based on the same grouping strategy into small cooperative groups. The 30 students randomly selected to be in the control group were also randomly assigned into small cooperative groups. At the beginning of the semester, each subject took a pretest to ensure that there were no significant differences between the control group and the experimental group.

The experiment comprised three learning stages, each including four phases: (a) concept learning, (b) concept certification, (c) cooperative learning, and (d) concept re-certification (Jong et al., 2012). The final examination of the course was the posttest to determine whether there were any significant differences between the control group and the experimental group. Results from the study suggest there is a strong positive correlation between overall online performance and learning achievement. Teams that were formed by complementation of knowledge had better online performances, leading to better learning achievements. Subjects in the experimental group also had better interaction within each group. Jong et al. (2012) observed

complementation of knowledge as having made learning more interesting for the students. In contrast, subjects of the control group did not exhibit much group member interaction, which reduced opportunities for peers to learn from one another (Jong et al., 2012). This study is a clear example of the importance of intentional grouping strategies in cooperative learning.

When planning cooperative groups, research indicates it is critical to consider the demographic composition of the group and the total number of students in the group (Chen & Wang, 2013; Kagan, 1994). Chikh and Hank (2016) further illustrated the significance of intentional student grouping on cooperative learning activities and found that "groups that have a wide range of abilities and problem-solving perspectives among members tend to be more successful" than groups formed by homogenous methods (p. 641). The differences among the group members contributes to the rich dialogue and various approaches to addressing situations and stimuli presented while facilitating embedded scaffolding through peer teaching student-led discussions. This is of specific interest when considering how to group members within cooperative activities in the online setting, and even more so when considering grouping of participants to cooperative learning groups within online postsecondary education courses. Individuals enrolled in postsecondary education courses in the online learning environment bring a variety of life experiences including educational, social-emotional, and job-related skills that contribute to the ways the learners in the group interact, reach decisions, and solve problems.

**Cooperative Learning in Online Settings**

Research shows cooperative learning is an effective method for increasing student engagement in the traditional brick and mortar educational setting (Kagan, 1994; Kyndt et al., 2013). Recently, cooperative learning activities in the context of the online learning setting has begun to be examined in isolated situations as well. Specifically, Christensen, Horn, and

Johnson (2011) held that digital classrooms should be student-centered, utilizing various modes of communication, with the goal to build community in the learning environment, which is in line with several aspects of cooperative learning. The position presented by Christensen, Horn, and Johnson (2011) is mirrored in a qualitative case study conducted by Shadiev et al. (2015), through which an authentic learning environment was created for individuals to experience various cultures throughout the world. Shadiev et al. assumed that students from diverse cultures could learn about other cultures by engaging in virtual communication and experiencing folk games with persons from other countries. Data were gathered at the completion of the activity via student reflections to answer the research questions. Students indicated in their interview responses that participating in asynchronous communication activities helped them in reducing stress and anxieties about communicating with others in real-time via video-conferencing tools as they were able to take their time reading about their peers and their peers' backgrounds before participating in any real-time web-based conferencing. The findings suggest that improved learning outcomes resulted from the implementation of the project-based collaborative learning environment (Shadiev et al., 2015).

In a study conducted by Ching and Hsu (2013), 21 students enrolled in an online master's course in instructional design were invited to participate in a study that collected and analyzed qualitative and quantitative data pertaining to students' experiences with peer feedback in an online learning environment. Students participated in five peer feedback discussions throughout the semester. Course posts were examined, qualitative data was collected to gain student perceptions regarding the project-based learning and peer feedback activity, and a content analysis of the peer feedback entries posted in the online forum was conducted (Ching & Hsu, 2013).

At the beginning of the semester, each of the 21 students in the course were assigned to three heterogeneous groups of six to eight students created by the instructor of the course based on students' self-reported strengths, skills, and experiences with instructional design (Ching & Hsu, 2013). The course comprised five benchmark assessments: (a) proposing a needs assessment plan, (b) conducting a task analysis, (c) planning to assess learning outcomes, (d) creating instructional strategies, and (e) developing a plan for various formative assessments. Required assessments at each benchmark were as follows: (a) post artifacts within their group, (b) provide feedback to three peers within their group, and (c) address any questions, suggestions, or comments in the feedback they received. The findings from this study suggest that peer feedback activities are beneficial to online learning students when conducted in the context of cooperative learning activities (Ching & Hsu, 2013).

Ku et al. (2013) also investigated the impact of cooperative learning activities on student attitudes and perceptions of learning in the online educational setting. The participants included 197 graduate students enrolled in and instructional design course at a Midwestern university over 3 consecutive academic years. The participants comprised 138 females and 59 males, the majority of whom were seeking majors in educational technology or school library education (Ku et al., 2013). To reduce variables during the study, all courses included in the research were taught by the same instructor via a web-based course management system, Blackboard. The instructor followed the same course procedures and activities with each of the classes participating in the study.

During the first two weeks of class, participants were required to post a brief biography and a picture of themselves to the class (Ku et al., 2013). The instructor then randomly assigned the participants to groups of three or four students, depending on the number of students enrolled

in the course sections. The groups were assigned tasks to cooperatively create a design document and a self-paced lesson based on a topic agreed upon by all members of the group. Seven specific components were required within the instructional plan, and the students were required to cooperatively meet benchmark deadlines set by the course instructor. At the completion of the 15-week course, the groups submitted a revised version of their group's design document and the self-paced lesson plan (Ku et al., 2013).

At the completion of the course, the participants were given a 20-item student attitude survey to gauge the perceptions and attitudes of the participants regarding their experiences with the cooperative learning activities (Ku et al., 2013). In addition to the student attitude survey, the participants were also asked to complete a teamwork satisfaction survey, which was a 10-item Likert scale self-evaluation questionnaire used to measure satisfaction with team members; three open-ended questions were added to the teamwork satisfaction questionnaire to gather specific information about participants' perceptions toward online cooperative group activities (Ku et al., 2013).

Ku et al.'s (2013) findings from this quantitative study suggest that overall the participants enjoyed working in the cooperative setting, but they faced some challenges resulting from not being able to meet face-to-face with their group members. Of special significance are the "critical elements" (Ku et al., 2013, p. 928) that were identified by participants as essential to successful online collaborative learning: (a) establishing team commitment, (b) maintaining clear and frequent communication with team members, (c) using interactive software, (d) utilizing synchronous meetings with team members, (e) understanding the objectives and goals of the activities, (f) having access to resources in an timely manner, and (g) having access to exemplar work samples. These aforementioned "critical elements" (Ku et al., 2013, p. 928) provide

specific guidance pertaining to how cooperative activities within an online learning environment should be structured to maximize student engagement and learning.

**Discussions as online cooperative learning activities.** Recent research in online learning suggests Socratic discussions may yield positive learning outcomes for participants of such discussions in online settings. Kaleioglu and Gulbahar (2014) found that Socratic discussions in online learning environments promoted heightened levels of cognitive engagement and critical thinking, especially when presented in asynchronous discussion forums. Although the discussions were found effective when conducted via asynchronous formats, synchronous Socratic discussions through web tools such as WebEx, Google Hangout, and Skype provided group participants the opportunity to discuss ideas and concepts in real time while observing voice tone and body language through web conferencing options which are lacking in solely text-based functions often used in threaded discussion posts (Madland & Richards, 2016).

Peterson and Roseth (2016) also provide evidence to suggest that online discussion forums offer a suitable setting for cooperative learning activities to transpire. Specifically, data indicate when members of online discussion forums are required to work cooperatively to compose and post a combined summary of their thoughts and dialogues, participants are more likely to actively engage in the academic discourse and benefit from the learning experiences (Peterson & Roseth, 2016). In their study, Peterson and Roseth examined how cooperative activities through online discussion forums impact students' motivation, achievement, and peer relations. Participants included 617 graduate students enrolled in an online graduate-level nursing course at a private Midwestern university. Peterson and Roseth's results suggest that cooperative learning activities within online discussion forums that include specific roles and sequences of tasks are positively correlated with higher student academic achievement,

supporting the assumption that participation in activities that increase positive interdependence among group members may increase participants' perceptions of social presence within the online learning environment. Recent research suggests Socratic-style discussion in small cooperative learning groups within online settings may serve as an effective venue for increasing social, cognitive, and teaching presence within online educational settings.

**Significance of intentional student grouping in online learning.** According to Vygotsky's (1978) sociocultural theory of learning, individuals learn best when they are able to interact within a social group so they may internalize data and stimuli through peer interactions. Communication between the group members supports rich dialogue and problem-solving approaches that are not intrinsic to traditional, individualistic learning activities (Johnson & Johnson, 2014). When considering grouping of participants into cooperative learning groups within online postsecondary education courses, intentional student grouping methods are of specific interest since individuals enrolled in postsecondary education courses in the online learning environment bring a variety of life experiences including educational, social-emotional, and job-related skills that contribute to the manner by which the learners in the group interact, reach decisions, and solve problems.

Bettinger, Liu, and Loeb (2016) provided detailed information pertaining to the impact student grouping strategies may have on student interaction and learning in online higher educational settings. In addition, Bettinger et al. (2016) found through an examination of student language within online dialogue, critical data may be gained pertaining to the level of interaction among online learning participants. Specifically, it was found that females and non-traditional college-age students tended to engage more in online interactions; additionally, students tended to engage more with classmates of the same gender or with classmates from the same

geographical region (Bettinger et al., 2016). This data is helpful when considering grouping in online cooperative activities at the postsecondary level since cooperative learning activities are structured to require equal participation from all members of the cooperative group. By grouping individuals of differing genders, ages, and residential regions together into an online cooperative learning group when possible, it is likely that a richer learning experience may result from the learning activities due to the heterogeneity of the group composition (Bettinger et al., 2016).

**Promoting 21st century college and career readiness skills.** Cooperative learning activities promote 21st century skills that are necessary for success in a globally competitive, digital society. Additionally, cooperative learning activities promote conflict resolution skills, build critical thinking and growth mindsets, and emphasize interpersonal communication and relationship skill building (Johnson & Johnson, 2014). Specifically, research indicates that participation in online cooperative learning activities may positively impact student interpersonal relationships as a result of online interaction and cooperation (Johnson & Johnson, 2014). Likely a result of focused, purposeful discussions and interactions, online cooperation within learning settings may create atmospheres that yield positive peer interactions. Such atmospheres may result in effective cooperation in which individuals work toward common goals, building skills essential for the 21st century marketplace.

The online learning setting offers a unique platform for addressing these critical career readiness skills through cooperative activities via multiple digital communication mediums. Exposure to such learning experiences and communication methods may equip learners with skills that otherwise may be absent in a traditional brick-and-mortar classroom or a digital learning environment that lacks such cooperative experiences. Embedding cooperative learning

activities within online learning courses and programs may provide a unique venue for arming learners and future members of the workforce with necessary 21st century career readiness skills.

## Summary

Chapter Two included the statement of the problem, discussion of the theoretical framework used for this research study, and a review of relevant existing literature pertaining to student experiences with cooperative learning activities. Specifically, the discussion encompassed the CoI model (Garrison et al., 1999), which is the theory on which this study was grounded. A synopsis of related literature pertaining to the history and evolution of online learning, collaborative and cooperative learning techniques, and cooperative learning in the online setting was also presented. Specific attention was given to the problem of the limited research available to detail the experiences of students who participation in online learning environments that incorporate cooperative learning activities. With the increase in online learning, it is critical that research be conducted to understand the experiences of postsecondary students who participate in online learning environments that incorporate cooperative learning activities. Additional research is also needed to more comprehensively explore how postsecondary education students perceive their experiences with online synchronous and asynchronous Socratic discussions. This research study provided an opportunity to fill the gap in the current literature regarding student experiences with cooperative learning activities in the online educational environment.

# CHAPTER THREE: METHODS

## Overview

The purpose of this embedded, single-case study was to understand how undergraduate students experience cooperative learning activities within an online learning environment with respect to social, cognitive, and teaching presence. This case study was based on the CoI model (Garrison et al., 1999), which is rooted heavily in Vygotsky's (1978) sociocultural theory of learning and Tinto's (1975) student integration theory.

Chapter Three includes an outline of the methods used to present a thick, rich description of the participants' experiences with cooperative activities in an online learning environment. Additionally, the intent of this study and a detailed description of the methods for conducting the research are described. The chapter also details the procedures used to conduct the study. Lastly, the role of the researcher is outlined in this chapter, followed by a description of the procedures used for data collection and analysis, ensuring trustworthiness, and adhering to ethical practices throughout the duration of the study.

## Design

This was a qualitative study using an embedded, single-case study approach to understand undergraduate students' experiences with cooperative learning activities in the context of an 8-week online teacher education course at a regionally accredited postsecondary institution. The qualitative design was appropriate for this study because there was a need to explore how undergraduate education students experience cooperative learning activities in an online learning environment, and quantitative methods would not provide the needed data that personal interviews and discussions with the individuals participating in such an educational setting would provide.

The research was qualitative in nature as it was based on a theoretical framework that informs the central research question and the subquestions addressing the research problem (Creswell, 2017). Additionally, the study encompassed an emerging approach to allow changes to be made to the design as needed based on information gained during the research process. With respect to the setting, the research was conducted in the context of the natural online learning environment, which is critical to understanding the experiences of the participants and is a characteristic of qualitative research (Creswell, 2017; Yin, 2014). Individual interviews and the focus group session were conducted using similar environments to the natural online learning setting. Furthermore, the study employed inductive and deductive data analysis methods to examine collected data, looking for themes and patterns in the information received as called for by qualitative research designs (Brinkmann & Kvale, 2015; Creswell, 2017; Patton, 2015).

The case study approach was used as it provided an opportunity to develop a complete picture of a specific situation. A case study is "an empirical inquiry that investigates a contemporary phenomenon in depth and within its real-life context" (Yin, 2014, p. 18). Such studies provide important insights pertaining to specific phenomena and the contexts in which the phenomena occur (Yin, 2014). The embedded, single-case design was used as it allowed for an "extensive analysis" (Yin, 2014, p. 52) of the participants' experiences with cooperative learning activities in the online learning setting with respect to each of the following subunits: (a) social presence, (b) cognitive presence, and (c) teaching presence. This approach provided a clear method to best describe undergraduate education students' real-life experiences with cooperative learning activities occurring in the bounded system of an online learning environment over a specific duration of time, providing information that may likely be beneficial to the average postsecondary institution offering education courses in an online format

(Creswell, 2017; Yin, 2014). Specifically, special attention was given to understanding the participants' personal perspectives regarding their experiences. Furthermore, the approach allowed for deep investigation of the situations and circumstances experienced by the undergraduate education students as they participated in cooperative learning activities within the specified online course work.

A thick, rich description of the participants' experiences with cooperative activities in terms of social, cognitive, and teaching presence was generated as a result of various data collection procedures implemented throughout this investigation (Creswell, 2017; Yin, 2014). Inductive logic was applied to examine the context of the online learning environment to understand the experiences of participants. The study followed an emerging research design, allowing for changes in the design to adapt to the information gained during the data collection process, although the embedded subunits were required as an area of focus and attention (Creswell, 2017; Maxwell, 2013; Yin, 2014). Specific details were analyzed prior to making generalizations about the information, and a detailed description of the context of cooperative learning activities within online learning environments emerged as a result of the data collection and analysis. Questions supporting the investigation were revised based on experiences gained from the research in the field, and information was documented accordingly (Patton, 2015; Yin, 2014).

## Research Questions

### Central Research Question

How do undergraduate education students describe their experiences with cooperative learning activities within an online teacher education course in terms of social, cognitive, and teaching presence?

**Research Subquestions**

**SQ1:** How do undergraduate education students describe their interactions with peers within cooperative learning activities in the online learning environment?

**SQ2:** How do undergraduate education students describe their cognitive engagement during cooperative learning activities within the online learning environment?

**SQ3:** How do undergraduate education students describe their experiences with their instructor and the instructional tools during cooperative learning activities within the online learning environment?

## Setting

In a case study, the setting is critical in understanding the case since the situation is bound by a particular set of circumstances (Stake, 1995; Yin, 2014). The setting for this study was a fully online teacher education course at a regionally accredited postsecondary institution in which cooperative learning activities were embedded in the instructional tasks. The site, referred to herein as University of Learning, was selected as the location due to its heterogeneity among the student body population within its education courses. University of Learning is known for the diversity in its student and faculty demographic composition and demonstrates a cross-section of the general population of college students at the undergraduate course levels. The institution draws a significant number of out-of-state students in addition to the in-state student population as a result of its strong online presence; the University encompasses one of the largest offerings for online options within postsecondary institutions in the United States. Moreover, the University offers fully online bachelor's degree programs in several fields including education. According to its most recent published data, University of Learning has over 110,000 students currently enrolled in online and residential programs combined. Of the more than 110,000

enrolled students, over 30,000 are active military. Approximately 42% of the total enrollment is male, and approximately 58% of the total enrollment is female. The diverse student population was optimal for this research study as the student body composition is generally reflective of teacher education students across the nation.

The University holds regional accreditation through the Southern Association of Colleges and Schools Commission on Colleges (SACSOC). Organizationally, University of Learning has a well-established structure with deans who oversee individual colleges within the university structure. The institution employs more than 2,500 full- and part-time faculty with the average student to professor ratio being 19:1. Specifically, within the School of Education, the University of Learning has a strong organizational structure in which the deans oversee the operations of the programs within the college through direct supervision of the chairs of each of the programs, program chairs provide direct oversight of the faculty within their assigned programs, and faculty provide direct instruction and academic support to the students enrolled in the courses and programs. The institution's School of Education is accredited under the National Council for Accreditation of Teacher Education (NCATE), and the teacher licensure program is approved by the state's department of education. The 8-week compressed format for the online teacher education course in which cooperative learning activities are embedded in the instructional tasks provided the context for the bounded system, or case (Creswell, 2017).

## Participants

This study encompassed purposeful criterion sampling procedures (Creswell, 2017). Participants were selected from the students enrolled in an online teacher education course offered at University of Learning as outlined in the setting for this study. Because teacher education courses are required of all education students, such course sections provided an

appropriate context for this study in both setting and student composition. Teacher education courses are also conducive to examining instructional methods and practices naturally within the learning experience, which was an aspect of this study.

Volunteer participants were solicited from the students enrolled in sections of EDTE 402 at University of Learning between the spring and summer terms in 2018. To conduct the research, 10 to 15 participants were needed (Creswell, 2017), and demographic data pertaining to student age ranges, course level (graduate or undergraduate), gender, and ethnicity were collected. All students enrolled in the given course sections received surveys via an electronic medium to solicit volunteer participation; the surveys included questions regarding demographic data in an attempt to capture a representative sample of the students enrolled in the course sections. An instructor of and content expert for EDTE 402 shared the recruitment information on the course announcement page and pushed the recruitment information out via email to the students in the course sections as well. The email addresses for each of the students enrolled in the sections of EDTE 402 comprising the case were provided to me (the researcher) by the School of Education at University of Learning, and I emailed each individual directly, inviting him or her to participate in the research study. I found that the personal email invitations resulted in a stronger response rate than the posting of the information on course pages by the instructor, but it is highly possible that the posting on the course pages prompted students to read the individual invitation or to take the personal invitation more seriously.

A total of 10 individuals enrolled in one of five sections of EDTE 402 between the Spring and Summer terms of 2018 completed the participation interest survey and the informed consent document that was provided to all individuals rostered to the course sections of EDTE 402

constituting the case (Creswell, 2017). Because only 10 individuals responded to affirm that they would like to participate, all respondents were included in the population.

Purposeful criterion sampling procedures were used because the participants in this research study needed to experience the same learning environment and educational settings. Although some variables were present, such as the total number of students enrolled in the course sections, the instructor of the course, and the dynamics of the learners within each of the course sections, the participants were exposed to the same course content and learning contexts as defined by the case. Specifically, all participants were exposed to the same course structure, syllabus, overall learning environment, and course activities.

Efforts were made to attain a representative sample of the student body enrolled in each of the course sections, but due to the small sample size, this was a difficult task (Creswell, 2017). Of the 10 volunteer participants, a diverse population naturally occurred. The participant population comprised five males and six females. Six of the participants identified as White–Caucasian, four identified as Black–African American, and one identified as Multi-Ethnic. Two of the participants were between the ages of 18 and 25; three were between the ages of 26 and 33; four were between the ages of 34 and 41; one was between the ages of 42 and 49; and one was between the ages of 60 and 70.

## Procedures

Prior to collecting data, Institutional Review Board (IRB) approval was secured from Liberty University. All proper protocols were followed to ensure appropriate permissions were received from specific staff and faculty in accordance with Liberty University IRB protocols; the IRB stamped consent form is included in Appendix A. A copy of the participant recruitment letter is included in Appendix B, and the Liberty University IRB Approval Letter is included in

Appendix C. A request was made to communicate with the dean of the school of education and any appropriate chairs within the college to describe the purpose of the study in detail. Upon approval being granted by the dean of the school of education and additional appropriate staff members, the instructors for the course sections in which the study was conducted were contacted in accordance with set protocols for the institution, specifically with respect to the school of education protocols. A clear description of the purpose of the study was provided to the individuals teaching the sections of the specific online teacher education course, EDTE 402. The instructors were asked to assist in sharing information with the students in the class about the study.

The instructors of the course were sent an email requesting their participation in sending the interest survey to the students enrolled in their courses via email and posting as an announcement on their course pages. Virtual discussions were held with these instructors, with school of education staff members, and with members of the university's dissertation support team staff as needed. The content expert who also served as an instructor for the course comprising the case provided information used in the document analysis stage of the research.

Individuals interested in participating in the research study responded to an interest survey shared by the instructor of the course and me (the researcher) directly (Appendix B). Informed consent via an electronic form was received from all individuals expressing an interest to participate in the study; the surveys included questions regarding demographic data to identify a representative sample of the students enrolled in the course sections. All participants were informed that participation was completely voluntary, and individuals who opted to participate could leave the study at any time during the research without any repercussions to themselves and the data gathered would not be included in the final study results (Creswell, 2017).

Data collection began first with document analysis as the documents related to the case itself provided the basis for painting a picture of the context in which the case was set. Individual interviews were then conducted with participants of the case in accordance with interview protocols described by Castillo-Montoya (2016) and Rubin and Rubin (2012) to gather insights from the participants regarding their experiences with the cooperative activities utilized during the course activities. Finally, a focus group discussion was conducted to gain a more comprehensive picture of the experiences of the participants. The focus group was held with study participants after the individual interviews were conducted to provide an opportunity to gather information from participants on an individual level prior to the participants potentially being influenced by their peers that participate in the focus group discussion. The focus group discussion followed Krueger and Casey's (2009) focus group protocol, adapted for a web-based focus group discussion.

The ultimate goal of the data analysis procedures was to provide a thick, rich description of undergraduate education students' experiences with cooperative activities within an online learning environment (Creswell, 2017; Yin, 2014). Collected data were analyzed through the following procedures: (a) categorical aggregation, (b) direct interpretation, (c) pattern identification; (d) providing a thick, rich description of the case; and (e) making naturalistic generalizations regarding the data gained (Creswell, 2017). The integration of the document analysis procedures, interview protocols, and case study protocols fulfilled the requirements of triangulation. Trustworthiness was demonstrated through a combination of credibility, dependability and confirmability, and transferability. Pseudonyms were used for the participants and the site to protect identities of the individual participants and the setting (Creswell, 2017).

All data were protected by storing collected information in locked cabinets and password-protected digital files as appropriate, based on the data type.

## The Researcher's Role

Serving as a nonparticipant observer, I served as the primary human data collection instrument throughout the research study. I conducted an analysis of documents specific to the course, taking notes about the types of activities and structure of the course itself. I conducted semistructured interviews with the participants, engaged in a scheduled focus group discussion with the research participants, and took copious notes throughout the course of the study (Creswell, 2017; Yin, 2014). The document analysis was focused on course structure, learning tools, and expectations through the lens of social, cognitive, and teaching presence (Garrison et al., 1999; Yin, 2014). Efforts were made to identify participants with whom I had no prior personal or professional relationship. This was successful as I was not personally familiar with any of the study participants prior to their participation in the research study. Efforts were also made to identify sections of the online education course instructed by individuals with whom I had no prior personal or professional relationship, specifically as a student. This was also successful; although I had developed a professional relationship with the content expert and instructor of the course serving as the setting for the case, I was unfamiliar with the instructor prior to my initial request to work with students from the School of Education. A detailed description of any potential bias on the implementation of the study and the analysis of the results is described herein (Creswell, 2017).

Individual interviews and focus group discussions followed the protocols suggested by Yin (2014) and Krueger and Casey (2009). It was important for me to bracket out and note any personal biases pertaining to cooperative learning activities that I may have to prevent potentially

impacting data collection procedures. Although it was not possible to eliminate my personal bias regarding cooperative learning activities and online learning completely (Diener & Crandall, 1978), open acknowledgement of such perceptions and experiences increases the trustworthiness and authenticity of the implemented research process (Schwandt, 2007).

To reduce the potential for my personal bias regarding cooperative learning practices and online learning to impact the implementation of the data collection process, it was critical that I be careful not to allow personal experiences with cooperative activities to impact the manner in which I asked questions of the participants during the semistructured interviews and the focus group discussion. I had to be certain to refrain from asking questions in a leading manner and be careful not to interject personal emotion when questioning. Such practices permitted me to receive accurate responses from the participants regarding their experiences with online cooperative learning activities (Creswell, 2017; Krueger & Casey, 2009; Yin, 2014).

## Data Collection

Data were collected for this study using document analysis, individual interviews, and a focus group interview. The following sections include detailed discussion of each data source.

### Document Analysis

The first method of data collection used for the research study was document analysis. The syllabus for the specific section of the online teacher education course in which the study was conducted was reviewed to identify course activities, assessments, and overall course requirements. Special attention was given to review of the clarity of course assignments and requirements and the review of cooperative activity expectations (Barkley, 2010; Nilson, 2010). Additionally, the course schedule, assignment requirements, and rubrics for all course activities were analyzed. The course section rosters were reviewed as they provided insights into the

general composition of the course sections and the total number of students in each section. Because specific student demographic information was not included on the course rosters, demographic information for course participants was requested from the participants within the participant interest survey for the purpose of the study.

The analysis of these documents prior to the start of the individual interviews and focus group provided a clear description of the course expectations and overall view of the cooperative learning activities in which the students enrolled in the course participated. Memoing procedures were employed to note details pertaining to the types of activities and learning experiences outlined in the course syllabus related to the activities and learning experiences noted in the course schedule, weekly announcements, and course expectations (Creswell, 2017). Together, the document analysis protocol provided a description of the course structure, learning tools, and overall expectations through the lens of social, cognitive, and teaching presence (Garrison et al., 1999; Yin, 2014).

**Individual Interviews**

The second method of data collection for the research study was individual interviews conducted via telephone and web-conferencing tools. The interviews with volunteer participants were recorded via audio-visual digital recording methods to create accurate transcripts of the interviews for data analysis. Interviews followed a semistructured and focused format that enabled the interview questions to change and emerge as appropriate based on the information provided by the interviewees (Stake, 1995; Yin, 2014).

Throughout the interviewing process and immediately following the individual interviews, I employed memoing strategies to keep note of participants' body language, voice tone changes, nonverbal responses, and any observations made during the interview (Creswell,

2017). Data from the interviews were securely stored on a password-protected electronic file, backed up on a flash drive that was stored in a locked cabinet. Each participant was asked to member-check the transcription of the interview in which he or she participated to verify the information reported was true and accurate; alterations were not required as the interviewees reported that the transcriptions accurately portrayed the interviews (Creswell, 2017). All memoing was securely stored in a locked cabinet as well (Creswell, 2017). The predetermined open-ended questions used during the semistructured, focused interview format are noted below, with the research subquestions (SQs) addressed in parentheses (Yin, 2014).

1. Please take a moment to introduce yourself to me. (SQ1)
2. Research shows that people learn in a variety of different ways. How do you think people learn? How do you think you learn best? (SQ1, SQ2, SQ3)
3. Often individuals select an area of study in postsecondary environments as a result of personal experiences or specific interest areas. Please describe what led you to study education in the postsecondary setting. (SQ1, SQ2)
4. Thank you for sharing what led you to study education in the postsecondary setting. Specifically, what led you to enroll in an online education course at this institution? (SQ1)
5. How do you think online education differs from traditional brick-and-mortar educational settings at the postsecondary level? (SQ3)
6. Prior to enrolling in this course, what experiences have you had in the past with cooperative learning activities in the traditional or online learning environment? (SQ2, SQ3)

7. Please describe, with as much detail as possible, how the specific goals and objectives for the course were communicated to you and your classmates. (SQ3)
8. Instructors can play a variety of roles in learning environments. How would you describe the role the instructor played in this course? (SQ3)
9. Describe your perception of your role as a learner in this course. (SQ3)
10. Throughout the duration of the course, to what degree did you feel connected to your classmates? What caused you to feel this way? (SQ1)
11. Please describe how you communicated with your peers in the class about course content. (SQ1)
12. What have you learned about yourself as a learner and facilitator throughout this course? What did you learn about your peers as learners and facilitators of learning? (SQ1)
13. How would you describe your level of engagement with course assignments and tasks? (SQ2)
14. Online discussions and conferencing activities were utilized during this course. To what extent did you find value in these tasks and why? (SQ2)
15. Deepening understanding of course material is a goal of nearly all educational programs. Please describe any activities or tasks in the course that provided you opportunities to deepen your own understanding of the course material. (SQ2)
16. Please describe any activities or tasks in the course that provided you opportunities to help your classmates deepen their understanding of the course material. (SQ2)

17. Several course assignments required you to share personal perspectives about course material. To what degree did you feel comfortable sharing your personal perspectives and ideas in the online forums? Why do you feel this way? (SQ1)
18. It has truly been a pleasure to speak with you today. Before we close, what else about your experience with cooperative learning activities in the online learning environment would you like to share with me? (SQ1, SQ2, SQ3)

Interview Questions 1 through 3 are introductory questions that were intended to open the interview process in a nonthreatening manner for the respondents; these questions are relatively neutral and were intended to create a conversational tone for the interview (Castillo-Montoya, 2016). Creating a nonthreatening atmosphere was critical to developing rapport with the respondents, and the opportunity to provide answers in the form of narrative descriptions in a conversational manner fostered a more comfortable, natural interview for the participants (Yin, 2014). Although a comfortable setting is important for the implementation of an interview, "the purpose of an interview is to gain further information relative to the study at hand" (Castillo-Montoya, 2016, p. 822). Thus, while it was important to create a comfortable environment for the interviewee, it was just as important to ensure a structured interview protocol was followed that naturally led to inquiries pertaining to the central research question. The transition questions were intended to serve this purpose (Castillo-Montoya, 2016; Merriam, 2009).

Interview Questions 4 through 6 served to provide information about the respondents' personal perceptions of the learning process and were transition questions within the interview protocol (Castillo-Montoya, 2016). These questions were intended to "link the introductory questions to the key questions to be asked" about the research topic (Castillo-Montoya, 2016, p. 823). The transition questions were intended to gain information about the respondents'

philosophical beliefs pertaining to educational practices and shift the focus of the conversation to the key questions, which dealt directly with the core elements of the study (Rubin & Rubin, 2012). Reponses to these transition questions were helpful in creating a picture of the participants' potential personal biases regarding educational methods and practices, which might influence how the respondents perceived their experiences with cooperative learning activities in the online learning environment. These questions also assisted with framing the key questions for the respondents through a conversational tone (Rubin & Rubin, 2012).

Interview Questions 7 through 17 are referred to as key questions (Castillo-Montoya, 2016; Rubin & Rubin, 2012) and were aimed to elicit valuable responses from the participants about the central research question and the specified subquestions. The order of the questions was intentional with Interview Questions 7 through 9 specifically addressing the respondents' perceptions of teaching presence in the course. Interview Questions 10 through 12 were intended to gain information about the respondents' perceptions regarding the level of social presence in the course. Interview Questions 13 through 16 requested information about the respondents' perceptions of the level of cognitive presence within the online course. Interview Question 17 again addressed the level of teaching presence within the course, but it was asked as a final key question before moving to the closing question as it related directly to Interview Question 16.

Interview Question 18 was a final question intended to bring closure to the interview (Rubin & Rubin, 2012). Specifically, this question provided another opportunity to reinforce the conversational tone of the interview and open the door for the respondent to share information that was not specifically requested during the structured interview questions.

**Focus Group Interview**

A focus group was the final method of data collection for this study. The focus group was conducted virtually, offering participants opportunities to provide deep reflection pertaining to the questions posed in a nonthreatening and convenient environment (Creswell, 2017; Krueger & Casey, 2009). The online focus group was conducted via a synchronous, web-conferencing tool. The conference spanned approximately 90 minutes, including time allotted for the introductions and setting of norms (Krueger & Casey, 2009). The single session focus group was scheduled at a mutually agreeable time convenient for those who volunteered to participate in the real-time, virtual discussion. The meeting time was set after interested individuals responded to a survey to share their preferred session times. Once all responses were received and preferences were analyzed, all volunteers were emailed the meeting time and a meeting notification was sent via Google Meeting.

Respondents of the individual interviews comprised the pool of individuals asked to participate in the focus group, allowing a more comprehensive picture of the participants' experiences to be illustrated through a combination of individual interview questions and group discussion responses. A total of seven individuals who participated in the individual interviews responded that they would like to participate in the focus group session. All seven individuals were selected to participate in the focus group via convenience sampling, but only six were able to take part in the session (Creswell, 2017; Krueger & Casey, 2009). To gain a thick, rich description of the experiences of the students, a focused interview protocol for the focus group discussion was followed (Creswell, 2017; Yin, 2014).

The focus group discussion was recorded via digital recording methods to create an accurate transcript of the discussion for data analysis. The discussion followed a semistructured

and focused format that enabled the discussion questions to change and emerge as appropriate based on the information provided by the participants (Castillo-Montoya, 2016; Krueger & Casey, 2009). Throughout the discussion and immediately following the conclusion of the focus group, I memoed to keep note of participants' digital interactions and any observations made during the discussion (Creswell, 2017). Data from the focus group were securely stored on a password-protected electronic file, backed up on a flash drive which was stored in a locked cabinet (Creswell, 2017).

Technological difficulties with the face-to-face aspect of the web-based discussion were experienced toward the beginning of the session, immediately following the norm setting and the introductions. A decision was made quickly to switch to an online discussion format via a shared document, supplemented by an audio feed online and through phone conferencing as needed.

All participants agreed to the change in the format and the norms, protocol, questions, and expectations were posted in real time via a shared Google document. To ensure that all participants received the link to the shared file immediately, the link was sent via email and a text message using the blind copy function to protect the identities of the participants. Each of the participants were logged into the shared file within 3 minutes of the file being shared. Immediately, participants began providing their responses to the posed questions, and expanding on peers' responses as well. The transcript of the focus group session was created in real time by the participants themselves, enabling them to ensure their perspectives were being accurately recorded and represented.

The participants were able to take time to read and process one another's responses to questions and reactions to responses without concern of missing statements or ideas. Participants

engaged in continual online discourse throughout the 90-minute period. At the close of the 90-minute session, I thanked all participants for their engaging and thoughtful responses and interactions. I informed the participants that I would be closing the live document for editing within the hour, but that the document would remain shared with them in comment-only format for the purpose of ensuring no typographical errors were made in the transcript. Each participant of the focus group was asked to member check the transcription of the discussion to verify the transcription was true and accurate; alterations were not necessary as all participants verified the accuracy of the existing transcript (Creswell, 2017).

The focus group discussion followed Krueger and Casey's (2009) focus group protocol, adapted for a web-based focus group discussion. Following introductions and norm-setting, the questions were posed in the following order: (a) opening questions, (b) introductory questions, (c) key questions, and finally (d) ending questions (Krueger & Casey, 2009). Serving as the facilitator–moderator, I opened the discussion with an explanation of the goal for the focus group: to generate a variety of different ideas and opinions regarding the information being investigated. Efforts were made to encourage all participants of the group to provide input during the discussion, and specific steps were taken to ensure that one or two individuals did not dominate the discussion. A set of 10 predetermined questions were posed, but the discussion followed an emerging design in that participant comments did stimulate other thoughts and ideas among group members (Krueger & Casey, 2009). Following are the focus group open-ended questions with the research subquestions (SQs) addressed in parentheses

1. Research shows that people learn in a variety of different ways. How do you think people learn? How do you think you learn best? (SQ1, SQ2, SQ3)
2. What led you to consider online education courses as an educational option? (SQ3)

3. What aspects of online education courses do you not enjoy? Why? (SQ1, SQ2, SQ3)
4. What did you enjoy about the online education course you just completed? (SQ1, SQ2, SQ3)
5. What would you like to change about the course structure and organization? (SQ3)
6. Describe your perception of your role as a learner in this course. (SQ3)
7. Considering your role as a learner in this course, describe your perceptions of your responsibilities in communicating with your peers about course content and course assignments. (SQ1, SQ2)
8. Online discussions and conferencing activities were utilized during this course. To what extent did you find value in these tasks and why? (SQ2)
9. Think for a moment about the course tasks and activities in which you participated throughout this online teacher education course. Please describe any tasks or assignments that provided you an opportunity to help your classmates deepen their understanding of the course material. (SQ2)
10. Several course assignments required you to share personal perspectives about course material. To what degree did you feel comfortable sharing your personal perspectives and ideas in the online forums? Why do you feel this way? What suggestions do you have to increase the potential of course-enrolled students to feel comfortable sharing their perspectives and ideas openly? (SQ1)
11. Thank you to each of you for agreeing to be a part of this important focus group. Before we close, what else about your experience in this course would you like to share? (SQ1, SQ2, SQ3)

Questions 1 through 3 are introductory questions that were intended to open the interview process in a nonthreatening manner for the respondents; these questions are relatively neutral and were intended to create a conversational tone and comfortable environment for the discussion (Krueger & Casey, 2009). Creating a nonthreatening atmosphere is critical to developing rapport with the participants and opening the focus group discussion in this manner fostered a more relaxed, natural setting for the participants (Krueger & Casey, 2009). As with interview protocols, though, it is it is also important to ensure that the there is a structure to the focus group protocol that will naturally lead to questions pertaining to the central research question. The transition questions were intended to serve this purpose (Krueger & Casey, 2009).

Questions 4, 5, and 6 sought to elicit specific information about the respondents' personal perceptions of the learning process within the specific case and served as transition questions within the focus group protocol although they did address the third research subquestion (Krueger & Casey, 2009). As with the interview protocol, these questions were intended to "link the introductory questions to the key questions to be asked" about the research topic (Castillo-Montoya, 2016, p. 823). The transition questions were intended to gain information about the respondents' personal beliefs and perceptions pertaining to educational practices utilized within the course and shift the focus of the conversation to the key questions.

Questions 7 through 9 are referred to as key questions (Krueger & Casey, 2009) and were intended to stimulate significant insights from the participants about the central research question and the specified subquestions. The order of the questions was intentional with Question 6 focused on drawing out information pertaining to the levels of social presence within the learning environment. Questions 7 and 8 dealt specifically with the respondents' perceptions of cognitive presence in the course. Question 9 again addressed the level of teaching presence in the course,

but it was asked as a final key question before moving to the closing question since it related directly to Question 8.

Question 10 was an ending question intended to bring closure to the focus group discussion (Krueger & Casey, 2009). Specifically, this question provided a final opportunity to thank all participants and give them an open door to share information that was not specifically requested during the posed focus group discussion questions.

## Data Analysis

The goal of the data analysis procedures was to provide a thick, rich description of undergraduate education students' experiences with cooperative activities within an online learning environment (Creswell, 2017; Yin, 2014). Theoretical propositions regarding the community of inquiry model as addressed in the theoretical framework for this study guided the general data analysis procedures (Yin, 2014). The data collected through the embedded, single-case study approach followed these propositions, thereby providing information in a manner conducive to the general analytic strategy (Yin, 2014). More specifically, information gathered was compiled, and emergent categories and themes were identified. Collected data were coded and organized into a visual display to analyze the information. The data were placed into chronological order to represent patterns and themes identified during the data collection process to allow for analysis of the information in the order in which the data were collected (Miles & Huberman, 1994).

Collected data were analyzed through the following procedures: (a) categorical aggregation, (b) direct interpretation, (c) pattern identification; (d) providing a thick, rich description of the case; and (e) making naturalistic generalizations regarding the data (Creswell, 2017). Specifically, prior to the course beginning, documents relevant to the course and the

setting were closely analyzed. Information gained from the analysis of the documents related to the course and the setting were categorized and any appropriate data were tabulated. Document analysis continued throughout the duration of the study and details of course activities and tasks were analyzed and categorized as appropriate.

Participants engaged in one-on-one semistructured, focused interviews related to their experiences in the cooperative learning activities within the online learning environment. Some participants also served on a focus group panel to respond to questions posed following a structured focus group protocol (Castillo-Montoya, 2016; Kruger & Casey, 1999). Focus group participants were selected via convenience sampling methods from the pool of interview participants. Interviews and focus group discussions were transcribed, data were coded, and relevant, meaningful units from the transcribed data were identified and categorized by hand using fracturing techniques (Creswell, 2017).

Enumeration strategies were used to indicate the frequency of specific statements or themes, and the information was displayed in a tabular format (Miles & Huberman, 1994). Peer debriefing procedures were employed as a method for checking for accuracy in data collection, reporting, and analysis procedures; specific attention was given to the maintenance of chain of evidence as described in the data collection procedures. Assertions were presented pertaining to students' experiences with cooperative learning activities in an online learning environment as revealed in the structured interviews. Direct quotations that mirror the themes that emerged from the data were included (Creswell, 2017).

A form of pattern matching (Yin, 2014) was used to determine how the data fit within the CoI model's categories of social, cognitive, and teaching presence (Garrison et al., 1999). In this study, the data were analyzed to determine their fit with these categories. Triangulation was

used to compare the data received from all three sources for consistency (Yin, 2014). Collected data were organized into tables for easy comparison and to explore similarities and differences in the perspectives of participant experiences with cooperative activities in the online learning environment. The results were tested against Garrison et al.'s (1999) CoI model.

The integration of the document analysis procedures, interview protocols, and case study protocols fulfill the requirements of triangulation. Through converging the data collected from the various stated procedures, consistency pertaining to the data collected was identified, and appropriate conclusions were drawn (Yin, 2014). A rigorous analysis of multiple sources and their convergence is considered one of the strongest of validation strategies in qualitative research, and thus was selected as the strategy for this study (Creswell, 2017; Merriam, 2009; Stake, 1995; Yin, 2014).

## Trustworthiness

This study demonstrated trustworthiness through a combination of credibility, dependability and confirmability, and transferability. This section starts with an explanation of the methods for establishing credibility, followed by a description of the methods for establishing dependability and confirmability. This section concludes with a description of the procedures used to address the transferability of the data collected from this study.

### Credibility

Credibility was established and maintained through persistent, comprehensive analyses of course documents and developing relationships with the participants that fostered trust and safety (Creswell, 2017). Additionally, through triangulation of data, peer reviews, and member checks of the research conducted, credibility was attained (Merriam, 1998).

**Dependability and Confirmability**

I personally monitored dependability and checked for consistency with the collected data. A peer checked my work for accuracy and potential bias; this individual is a professional in the field of education with a background and expertise in qualitative research methods (Creswell, 2017; Merriam, 2009). I shared the collected data with all stakeholders involved in the research to ensure that the collected data interpretation and transfer were accurately conveyed and the essence of the phenomenon was being accurately represented in accordance with Creswell (2017).

To ensure confirmability, the peer not involved in the research evaluated the findings, checking for accuracy and potential bias (Creswell, 2017). The individual who served in this capacity was able to identify any false conclusions I might have made based on my personal biases regarding the research and findings.

The research procedures were multidimensional, and processes evolved based upon the circumstances and data that emerged throughout the collection of information (Merriam, 2009; Stake, 1995; Yin, 2014). Allowing for procedures to emerge based on information gained during the research process is a key tenet of qualitative research, providing opportunities to uncover information that otherwise may not have been revealed if only structured, nonemerging data collection procedures are utilized. Although this case study involved a small number of participants within a structured setting, a rich, thick description of this individual case was presented through adherence to the tenets of trustworthiness as described by Creswell (2017), Stake (1995), and Yin (2014).

### Transferability

Maximum transferability was reached by accurately detailing the documents associated with the course, providing direct quotations from participants, documenting observations from a review of the online course activities, and describing the information and insights gained from the focus group. Finally, transferability was met through sharing a thick, rich description of all aspects of the research (Creswell, 2017).

## Ethical Considerations

This study included adherence to procedures designed to ensure ethical standards (Creswell, 2017). Following Liberty University's IRB protocols, a request was made to communicate with dean of the school of education and any appropriate chairs within the college to describe the purpose of the study in detail. Appropriate permissions were received from the school of education, and steps were taken to complete Liberty University's IRB process. Upon receiving approval from the IRB at Liberty University to conduct the study, the recruitment of participants began. The instructors for the course sections in which the study was conducted were contacted to provide them a clear, detailed description of the study. Instructors shared the interest survey with the students enrolled in their course sections via email and as a posted announcement on their course pages to receive a prospective participant pool.

Individuals interested in participating in the research study responded to the interest survey shared by the instructor of the course or via a direct email from me. Informed consent was received from all individuals expressing an interest to participate in this study. Participants were informed of their right to withdraw from the study at any time throughout the duration of the study without any repercussions to themselves. Pseudonyms and composite profiles were used for the participants and the site to protect identities (Creswell, 2017). All data were

protected by storing collected information in locked cabinets and password-protected digital files as appropriate, based on the data type.

As the primary human data collection instrument throughout this research study, I was careful throughout the study to take copious field notes, bracket out and note any personal biases pertaining to cooperative learning activities and online learning (Diener & Crandall, 1978), and refrain from asking participants any questions in a leading manner at any time during the interviews and focus group discussion (Creswell, 2017; Krueger & Casey, 2009; Yin, 2014).

## Summary

The purpose of this third chapter was to restate the intent of this study and provide a detailed description of the methods for conducting the research. The methods used to present a thick, rich description of the participants' experiences with cooperative activities within an online learning environment were detailed. More specifically, the research design, research questions, setting, participants, sampling methods, and overall procedures for implementing the study were outlined. The chapter closed with a description of the procedures for data collection and analysis, processes for ensuring trustworthiness, and procedures for adhering to ethical practices throughout the duration of the research study. The next chapter is a presentation of the findings from the analysis of the data collected throughout the study.

# CHAPTER FOUR: FINDINGS

## Overview

The purpose of this embedded single-case study was to understand undergraduate education students' experiences in online cooperative learning environments. This study utilized three different forms of data to generate overall themes and descriptions of the case. Four overarching themes were discovered: (a) connectedness with classmates, (b) connectedness with instructor, (c) engagement with course material, and (d) personalization of learning. Initially, documents specific to the course design, structure, and overall purpose were collected from the University of Learning. These documents provided the basis for the description of the case and the framework by which questions were crafted for the individual interviews and the focus group session. The second form of data came from individual interviews with the 10 study participants, while the third form of data came from a focus group comprised of six study participants. Data were analyzed using the general analytic strategy of relying on theoretical propositions and Tochim's pattern-matching logic (Creswell, 2017). Themes emerged based on repetition of comments and ideas shared via the individual interviews, interactions and discussions during the focus group session, and reviews of the documents associated with the course. Provided in the following subsections are descriptions of the participants, then the case and, finally, the results.

## Participants

The participants in this study included 10 undergraduate online education students enrolled in one of University of Learning's EDTE 402 course sections between the Spring and Summer terms of 2018. Each of these individuals participated in a semistructured individual interview, and six of these 10 participants also participated in an online focus group discussion.

The composites of the participants are accurate with attention to detail to describe the experiences of these individuals with cooperative learning activities within an online learning environment. The composites are a compilation of interviews and focus group discussions to provide a rich, thick description of the experiences. I made every attempt to give a vivid and detailed description of the participants while maintaining their anonymity. All names are pseudonyms, details of the interviews and accounts are accurate, and the reflections are those expressed by the participant.

Each of the 10 participants were selected from the students enrolled in one of five online sections of EDTE 402 at the University of Learning between the spring and summer terms. The participants individually elected to participate in the study after receiving an email from the instructor of the course section, a notification of the option to participate in the study via course announcements, and a personalized email from me directly.

Data pertaining to student age ranges, gender, and ethnicity were collected through the participant interest survey to gain insights into the demographic composition of the participants. An attempt to capture a representative sample of the students enrolled in the course sections was also intended, but this was difficult due to the small sample size. All individuals who indicated an interest to participate in the study and completed the informed consent were included in the participant population and the study. Interestingly, a diverse cross-section was captured naturally as shown in the demographic data.

The participants included five males and five females. Of the participants, five identified as White–Caucasian, four identified as Black–African American, and one identified as Multi-Ethnic. Finally, two of the participants were between the ages of 18 and 25, two were between

the ages of 26 and 33, four were between the ages of 34 and 41, one was between the ages of 42 and 49, and one was between the ages of 60 and 70 (see Table 1).

Table 1

*Participant Demographics*

| Name | Gender | Age | Ethnicity | Occupation | Focus Group Participant |
|---|---|---|---|---|---|
| Aaron | Male | 37 | Black | Special education teacher assistant | No |
| Ashley | Female | 32 | White | Paraprofessional in special education | No |
| Eric | Male | 44 | White | Project manager—development company | No |
| Jackie | Female | 33 | Black | Administrative assistant | Yes |
| Jim | Male | 24 | White | Supervisor for mailing company | Yes |
| Kaitlyn | Female | 28 | White | K-6 technology and computer education teacher | Yes |
| Kathy | Female | 37 | White | Kindergarten teacher | Yes |
| Maggie | Female | 36 | Black | Exceptional child teacher's assistant | Yes |
| Matt | Male | 35 | Black | Sales supervisor—property management | Yes |
| Roy | Male | 63 | White | Rehabilitation of troubled youth | Yes |

**Aaron**

Aaron is a Black male who, at the time of the study, was 37 years of age and serving as a teacher's assistant within a special education class at an elementary school in Virginia. Before serving in this function, Aaron worked as a substitute teacher for 3 years in the school that hired him as a teacher's assistant. While working in this capacity, Aaron decided he wanted to complete a bachelor's degree program in education; he had completed an associate degree in

business administration at a trade school soon after graduating high school. He first attempted a couple of other online education degree programs before finding University of Learning's program.

Aaron shared many positive experiences he had while taking classes with University of Learning, but also expressed several disappointments he faced. He explained challenges the EDTE 402 course presented and provided a unique perspective pertaining to participation in the class and the cooperative activities. Specifically, Aaron addressed challenges he faced with the activities attached to the lesson plan stating, "At the beginning of the course we should have been given a sample lesson plan to show what was wanted and there was no sample." He also shared that he had difficulty communicating with his instructor via telephone when attempting to ask specific questions related to course content:

> I prefer talking on the telephone 'cause when I have to send an email I might forget something to tell you. I might leave out some part that I had to say to you. But when I'm talking to you on the telephone, I'm not going to leave something out that I wanted to tell you, ya know. So, I think having time to talk on the phone is important.

Aaron described how he felt connected to his classmates throughout the duration of the course, and indicated he believed the discussion board activities were key in building that feeling of connectedness with his peers. When asked to what degree he felt connected to his peers, Aaron stated,

> I think I was connected to my classmates from the first week 'cause my classmates would respond to me through the discussion posts. It makes me feel good inside when a person responds to my discussion post. Makes me feel like I'm valuable.

Aaron continued by sharing that he found the discussion board activities to be the place where he gained insights from his classmates and his instructor by engaging in the online discourse. Although many of the experiences shared were negative in nature, Aaron was a pleasure to talk with, and his experiences provided valuable insights pertaining to online course design, structure, and overall activities.

**Ashley**

Ashley is a White female who, at the time of the study, was 32 years old, married, and the mother to four stepchildren. She had served as a paraprofessional in the special education setting for 5 years and has a passion for serving students with exceptionalities. She has experience working with moderate-to-severe exceptionalities at the elementary and middle school grade levels, and she was pursuing her bachelor's in special education so she could serve as a teacher in the special education classroom environment. Ashley earned her associate degree from a traditional brick-and-mortar postsecondary setting soon after completing high school; she spent approximately 15 years in the workforce before returning to school to pursue her bachelor's degree in education. Ashley was determined to complete not only her bachelor's degree in education, but also her master's degree.

During the individual interview, Ashley shared many insights pertaining to her experiences with traditional brick-and-mortar postsecondary educational programming in comparison to the online format. In talking with her, it was helpful to learn that she prefers being able to ask questions of her instructor and her classmates in real-time. Ashley stated, "In the online classroom I have to email my professor, hope [the professor] understands my question, and then wait for a response." She also noted that the emailing of questions often results in

multiple messages to receive clarification when a question asked in the face-to-face setting is often clarified in one interaction.

**Eric**

Eric is a White male who, at the time of the study, was 44 years old, married, and working as a project manager at a local development company in North Carolina. Eric was pursuing an education degree so he could become a high school business education teacher. His goal was to teach business in either the traditional high school setting or in a career tech setting. With his life experience in the field as a project manager and department supervisor, Eric brought a unique perspective to the discussion of cooperative learning in the online educational environment.

When asked to describe how he communicated with his peers about course contact, Eric stated, "The discussion board provided a great platform to generate dialogue about the information being studied in the course. Even more important, though, was the way the discussions created a feeling of comradery among those of us in the class." He further explained the conversations that begin within the discussion boards fostered connections with classmates beyond the specific course activity:

> It is like in the workplace when you need to create the best product—you cannot do it on your own. You talk with your team members and gain ideas from multiple people, and then you build a core group with the needed skills to complete the task. Discussion boards provide that format.

Eric offered thoughts and ideas regarding the structure of course activities and discussions that provide depth and insight that may not have been provided by individuals

without such life experiences. Eric was a pleasure to interview as he was enthusiastic and thoughtful in his responses.

**Jackie**

Jackie is a Black female who, at the time of the study, was 33 years old and pursuing a bachelor's degree in Biblical Educational Studies at the University of Learning. She was working as an administrative assistant at a local university in Louisiana. In addition to serving in this role, Jackie also volunteers in her church as a Bible teacher to children ages 9 through 11. Jackie introduced herself as "a nurturer by nature," which led her to be drawn to the field of education. When she first began postsecondary studies, she was pursuing a career in nursing. She quickly found that her passion was not in medicine, but simply in helping people. At the suggestion of her cousin, Jackie decided to pursue her studies in education with a goal to help adolescents prepare for their future. After her first two classes she knew she had found the area of study that brought her true joy.

Although at the time of the interview, Jackie was not completely certain which grade level she would like to work with upon graduating, she knew she wanted to work with middle or high school students. She shared that she thought she would like to work with high school students the most so she may help prepare them for transitioning to the adult world. Jackie was excited to participate in the interview process and provided many great insights pertaining to her experiences in EDTE 402.

**Jim**

Jim is a White male who, at the time of the study, was 24 years old, married with an infant at home, and working as a supervisor for a national mailing company. In addition to serving in this supervisory role, Jim serves as a Bible teacher at his local church congregation

and has participated in several mission opportunities. It was while he was serving in the mission field that he grew a passion for Christian education, and ultimately led him to pursue a degree in Christian education. Jim shared his excitement for his future as an educator in the Christian setting, providing specific details regarding his desire to help students of all ages think critically about subject matter through a Biblical worldview.

During the interview, Jim was professional in tone and demeanor while providing candid and genuine responses to the questions posed. From expressing his gratitude for the flexibility of the online learning platform and environment to sharing his personal perspectives regarding the depth of the connectedness between learners within the context of the given course, Jim offered great insights into his experiences. One key point Jim shared was regarding the convenience of the online learning environment, explaining that the format breaks barriers to furthering education for many:

> The online setting provides a much more convenient environment that allows many individuals who may not be able to attend classes at traditional times the opportunity to study and advance. The online setting allows people to focus on aspects they are really interested in and expand on those interest areas through discussion board posts and writing activities.

**Kaitlyn**

Kaitlyn is a White female who, at the time of the study was 28 years old, married to a high school teacher, and mother of a 5-year old son. Kaitlyn worked as a computer technology teacher at an elementary school in South Carolina where she taught technology and computer education to students in kindergarten through sixth grade. Immediately after graduating from high school, Kaitlyn entered the workforce as a medical technician and pursued postsecondary

studies within the medical field. After several terms, Kaitlyn stopped going to school so she could focus on working the demanding hours of her career at an urgent care facility. She shared that she found juggling school and her work schedule to be too difficult, specifically since she struggled with overcoming the challenges of having a learning disability.

After working in the medical field for nearly 15 years, Kaitlyn decided she needed a change. With a small child, she wanted working hours similar to that of her husband's and her son's school schedules. Kaitlyn was quickly drawn to the idea of teaching technology since she had a background in medical technology, and she decided to pursue her degree in education. At first she was hesitant to begin the process, remembering the learning difficulties she had faced in the past. However, her peers and family encouraged her to pursue her dream. While still working at an urgent care facility, Kaitlyn began her online studies in education at the University of Learning where she quickly realized she was able to excel in the online learning environment.

Kaitlyn described how she struggled in the past with the more rigid brick-and-mortar, traditional instructional settings. She explained how the online learning setting at the University of Learning provided her an opportunity to excel in her studies through the freedom and flexibility of scheduling study and work time when it was convenient for her and her learning style. She highlighted how the clear expectations presented in the course syllabus, course schedule, and information shared via the course content on Blackboard provided her the direction she needed to perform her best on all assigned activities. She stated,

> Through communication from the instructor, the syllabus, the activity instructions, the rubrics, and the weekly emails, I knew exactly what I was supposed to do. If I did have a question, I would email my instructor and get a response within 48 hours clarifying a task; it was great.

At the time of the interview, Kaitlyn was only five courses away from completing her degree, and she was excited to begin serving as an elementary school teacher so she could expand her teaching beyond the technology subject matter.

**Kathy**

Kathy is a White female who, at the time of the study, was 37 years old and in the third year of her education degree with the University of Learning's online education program. Kathy worked as a kindergarten teacher who sought out a flexible learning environment that would allow her to pursue her bachelor's degree without conflicting with her demanding work schedule. Kathy completed coursework at the postsecondary level in a traditional brick-and-mortar educational setting soon after graduating from high school, but she stopped attending college to pursue a career full-time. Kathy shared that she had experience with cooperative learning activities prior to taking EDTE 402 at the University of Learning, but most of her experiences were in the traditional, face-to-face setting. Kathy was excited to be interviewed and share her perspectives regarding her experiences of the activities within the course. Specifically, Kathy provided explicit details regarding how she perceived the actions of the instructor and the overall course structure impacted her as a learner and an educator throughout the course.

One key point Kathy shared regarding her experiences with online cooperative activities during this course is described in her following statement:

> I have found that traditional classes make it easier to find the time to get with peers and classmates to work together and plan out steps of a project or discuss information. Interacting and cooperating with one another can happen rather easily when you are sitting together in person. Online makes it more difficult as it is hard to find the time to meet together online.

Kathy suggested that a more specific structure for meeting times or methods for interacting online might reduce the challenges currently faced and improve the overall cooperation taking place during course activities.

**Maggie**

Maggie is a Black female who, at the time of the study, was 36 years old and married with five children. She served as a youth pastor at her local church and as an exceptional child teacher's assistant for a public school in North Carolina. Prior to working as a teacher's assistant, Maggie worked as a preschool teacher within the public school system for 18 years; she was excited to take the reigns as a classroom teacher.

At the time of the interview, Maggie was in the last semester of her education program and just 2 months away from graduating with her bachelor's degree in education. The school where she was employed had already offered her a position that she planned to move into upon receipt of her bachelor's degree. Maggie provided passionate responses to the interview questions and painted vivid pictures of her personal experiences with cooperative learning activities in the online learning platform within EDTE 402. Although Maggie stated she had a very positive experience with her instructor, she explained that she had not personally felt connected to her classmates throughout the duration of the course. When describing the cooperative discussion boards, Maggie stated,

> It wasn't really a discussion to me. When I think of a discussion it means that you are going to give us something and we are going to talk about it . . . debate it. No, it was specific answers . . . specific stuff that you had to do and you just commented on your classmates' posts.

Maggie described how she found the lesson plan activities to be extremely beneficial: "They really made me dig deep and really made me see what teachers go through to prepare and teach a course." When asked if she thought there was anything about the lesson plan activities that she could have benefitted from had there been more interaction with peers she stated, "We could have bounced ideas back and forth to get feedback from each other. That could have been really helpful."

**Matt**

Matt is a Black male who, at the time of the study, was 35 years old, married and pursuing a degree in education with the goal to teach in the secondary setting. He was working as a sales manager in the field of property management. Matt had recently returned to school to complete the education degree that he began in the traditional brick-and-mortar educational setting soon after completing high school, but had to stop to begin working full-time, so he could support his family. Matt shared that he was only able to return to school to complete his bachelor's degree as a result of the flexible learning environment offered through the online learning platform. He shared his excitement for the opportunity to complete the degree that he started many years ago so that he could serve in the role of a teacher within the elementary or middle school setting.

During the individual interview, Matt highlighted his feeling of connectedness with his classmates throughout the duration of the course. "I felt really connected to [my classmates]. The discussion board posts allowed me to see things from their perspective and begin conversations with them about their thoughts and ideas." Matt described how he communicated with his classmates through various methods including email, text messages, and the course collaboration forum. When asked about things he collaborated on with his classmates, Matt

shared that he was often asking for opinions or perspectives from his classmates on his approach to a task or his understanding of a topic. He also shared that he would gain insights from his classmates on how they performed on particular tasks and asked for ideas on how to improve from those who scored highly on tasks.

Throughout the interview, Matt continued to highlight how the online discussion boards were valuable to him as a learner. He stated, "I found [the online discussion boards] very valuable. I've gotten a lot of feedback from my peers through the discussion boards. I was able to read a reply to a post and realize I had not thought about it the same way." He further shared that the discussion board interactions provided opportunities to share personal information and perspectives that resulted in deeper connections with his classmates while deepening content knowledge.

**Roy**

Roy is a White male who, at the time of the study, was 63 years old, and a resident of Texas. He was retired from the military and serving in a juvenile detention rehabilitation setting where he worked with troubled youth. Having earned his associate degree early in his career with the military, Roy was familiar with various forms of distance learning and how such educational formats have emerged over time. In addition to being a learner through distance education, Roy also served as a teacher and trainer within distance learning programs while serving in the military. He returned to school to earn his bachelor's degree in education so he could pursue his goal of working as a social science teacher in the alternative school program setting. His unique background and experiences brought a rich perspective to the interview process.

When asked about his experiences with cooperative activities prior to enrolling in EDTE 402, Roy provided a rich response: “Cooperative and group activities were difficult at my previous school because we were geographically disbursed, and the Internet was not as advanced as it is today.” He explained that he was accustomed to instructors assigning research papers and encouraging collaboration among classmates during the process, but collaboration and cooperation was not embedded within course requirements. Roy also shared that he felt the cooperation with classmates that took place in EDTE 402 fostered a strong community of learning, positively impacting his experience as a learner. He shared that he felt “really emotionally connected” to his peers and stated, “I have tried to interact with [my classmates] in the introductions. Make a connection with something that interests them and interests me.” Lastly, Roy further explained how this connectedness fostered a strong network of peers that together discussed how to grow both personally and professionally throughout the course activities.

## Case Description

The case for the study included the site where the study was implemented, the setting of the course, the volunteer participants enrolled in the given 8-week education course sections, and the duration of time during which the data were collected (Stake, 1995; Yin, 2014). The site, University of Learning, was selected as the location for the study due to its heterogeneity among the student body population within its regionally-accredited, fully online education programs. The setting for this study was a fully online teacher education course in which cooperative learning activities were embedded in the instructional tasks; the 8-week compressed format for the online teacher education course (EDTE 402) provided the context for the bounded system, or case (Creswell, 2017). Purposeful criterion sampling procedures were used to select participants

since only students enrolled in sections of the specific online teacher education course during a specific time period were eligible to participate in the study (Creswell, 2017). A total of 10 individuals enrolled in one of five sections of EDTE 402 between the Spring and Summer terms of 2018 were included in the population. All participants were exposed to the same course structure, syllabus, overall learning environment, and course activities.

## Results

The following are the results of this embedded single-case study. Data collected from the case included document analysis, individual interviews, and a focus group interview. Documents were used to create the case description, identify specific aspects of the course structure, provide details about the assignments and course activities, and answer the research questions. Results from the individual interviews and the focus group interview are described under each thematic heading. A systematic analysis technique was used to analyze the case and its subunits through pattern matching. The embedded single case design provided the structure for subunits to be investigated within the context of the case analysis. Social, cognitive, and teaching presence were specific subunits within the overall single case study that permitted the experiences of undergraduate students in a typical online postsecondary education course incorporating cooperative learning activities at University of Learning to be examined. The following sections describe the themes developed during the embedded case analysis through pattern matching, the research question results, and synthesis of all data collected.

**Major Theme 1: Connectedness With Classmates**

The first major theme to emerge from the data, connectedness with classmates, addressed the aspects of cooperative learning activities that fostered connectedness and community within the online learning environment among the students. These aspects include communication with peers, in-depth discussion about course material, sharing personal interests and perspectives, and working to reach a common goal. Within the first major theme of connectedness with classmates, four subthemes emerged: communication methods, comfort level of sharing perspectives, value of feeling connected, and the role of the learner (see Table 2).

Table 2

*Theme 1: Connectedness with Classmates*

| Theme 1: Connectedness with Classmates | |
|---|---|
| Subtheme | Code |
| Communication methods | Discussion boards (34), Blackboard community (31), Social networking (19), Emails (17), Text messages (17), Phone conversations (14) |
| Comfort level | Clear expectations (17), Very comfortable (14), Worldview (12), Share clearly and concisely (9) |
| Value | Creates community (36), Very valuable (22), Share perspectives (21), Gain insights (17), Challenged (16), Encouraged (14), Little opportunity to connect (13) |
| Role of the learner | Researcher (17), Responsible (12), Questioner (12), Applier (9), Contributor (9), Inquirer (8), Studier (8), Evaluator (7), Listener (7), Self-teacher (6), Task completer (6), Thinker (6), Developer (3), Doer (3), Representative of the school (3), Absorber (1) |

*Note.* Numbers in parentheses indicate the number of times the specific response was provided.

**Communication methods.** The first subtheme that emerged within the major theme of connectedness with classmates was communication methods. Of the 10 study participants, nine indicated that feeling connected to their classmates was important to their learning experience in the online education course. Of the nine participants who indicated that feeling connected was

important to their experience, eight shared that the cooperative activities contributed to them interacting with their classmates through multiple communication methods. Of the 10 participants, four indicated in their individual interviews that they would have liked to participate in more structured, cooperative discussions throughout the duration of the course to increase the level of connectedness with their classmates. Specific methods of communication with classmates utilized during this course by the participants included course discussion boards, the Blackboard community and collaboration forums, individual and class-based emails, traditional phone conversations, video phone conversations between classmates, text messages, and certain social networking forums (namely Twitter and Facebook).

Matt, like the other study participants, shared that the majority of the communication with classmates throughout this course took place via the discussion board posts. Specifically, he shared that the discussion board posts would, at times, prompt additional, deeper communications between classmates or groups of classmates through other mediums. One of those additional mediums included email; Matt expounded, "I have reached out to some [classmates] via text messages . . . collaborating with them from there." Roy indicated that he personally liked the feature within the classmate section of Blackboard that provides hyperlinks not only to email contact information for colleagues, but also direct links to social media accounts if the classmates have shared that information. Roy stated, "I will generally try to check out [classmates'] social media if they provide it so I can understand them and where they are coming from."

Kaitlyn described how specific assignments pertaining to the lesson plan development encouraged her and her classmates to interact with one another through individual and group emails, text messages, and video and traditional phone calls: "One would send an email out and

we would kind of email back and forth. A few of us would then text or call each other to talk through the assignment. That was great."

**Comfort level of sharing perspectives.** The second subtheme that emerged within the major theme of connectedness with classmates was comfort level of sharing perspectives within the online learning environment. All study participants indicated a high level of comfort with sharing personal perspectives with their classmates throughout the duration of the course. Aspects referenced by participants that contributed to this high level of comfort included familiarity with the course platform, clear and concise expectations for discussion boards and course communications, classmate interactions and communications through the course's collaboration space, and personal electronic communications sparked from the introductory class posts.

During the individual interview, Kaitlyn shared,

> I felt completely comfortable; I think it is much easier in an online forum because I am braver behind a computer. I was able to share things in a clear and concise way because I had time to prepare the response and read it before posting for others to see. You cannot really do that in a traditional classroom.

During the focus group session, Kathy attributed her feelings of comfort and confidence in sharing her perspectives in the online forum in part to the structure and design of the course itself. Kathy shared, "I feel that the way the classes are set up, it provides a safe environment and a format to help others overcome and struggles whether with classwork or even personal struggles."

In the focus group, Jim supported Kathy's remarks:

> A safe learning environment is definitely a goal in online and traditional learning environments. The honor rules about speaking professionally are important and useful. I think people feel safer in an online forum than in a residential format. I felt very comfortable sharing experiences, perspectives, and the like. Possibly more so than in a residential school. Typing gives people more time to think about responses and the subtle anonymity of not seeing someone's face tends to make a person bolder in what they say.

Maggie, however, shared a very different perspective that is critical to note here. She stated, "I feel like I could not really express myself and maybe because I really do not share unless someone asks me." This perspective highlights the importance of the simultaneous interaction and positive interdependence aspects of cooperative activities in the online educational setting. It is possible that Maggie did not perceive her role as a learner within the discussion boards was to engage with any posts and information shared. Her comments suggest that she perceived she should only reply or respond to information shared if she was specifically asked to engage.

Kaitlyn brought closure to the discussion about level of comfort with sharing personal perspectives in the online cooperative learning environment to a close during the focus group session:

> It is always easier to be honest when it isn't technically in a room full of people. I was much more willing to openly share my thoughts and experiences in this way rather than if I had been in a classroom standing in front of everyone.

She also reiterated a point made by Jim earlier in the discussion, stating,

> And I agree with Jim in that [the format] allows you to take the time to construct and think about what you want to say and how you want to say it. This makes for a more effective discussion, in my opinion.

**Value of feeling connected.** The third subtheme that emerged within the major theme of connectedness with classmates was value of feeling connected. Of the 10 study participants, nine indicated that feeling connected to their classmates was important to their learning experience in the online education course. Of the nine participants who indicated that feeling connected was important to their experience, seven shared that cooperative activities they participated in throughout the course positively impacted their learning.

During the focus group session, Roy shared that he found value in the idea that a community continuously examined his submissions within an online learning forum: "Knowing that a community will be reading your work and commenting on it provides extra motivation to make sure that one's work is a quality work." Kathy expanded on Roy's comments:

> With online learning you don't get to meet the people in your class face-to-face, or even the instructors. Discussion Boards, I have found, are a great way to get to know your classmates; these various forms help us get to know each other even when we are on opposite sides of the country.

The comments by Roy and Kathy during the focus group session were reminiscent of the description Kathy shared during her individual interview when asked to describe the value of the online discussion boards throughout the course. In the individual interview Kathy had stated,

> I really liked learning about the personal experiences of my peers and how they were using information in the course. I would take ideas that they posted and consider the

statements in my own understanding of the information. It seems like the connections with my peers were really about personal application of the information in the workplace.

Although several participants indicated a strong feeling of connectedness with their classmates throughout the duration of the course, a few participants shared a different perspective. For example, Ashley indicated that her experience with the cooperative activities did not increase her feelings of connectedness with her classmates, but rather felt more like, "just responses. Like it was an assignment . . . it wasn't 'connect with your peers.' It was, 'I want to make sure you understand this topic.'"

**The role of the learner.** The fourth and final subtheme that emerged within the major theme of connectedness with classmates was the role of the learner in the online learning environment. Engaging with one other through meaningful discussions is critical to the learning process. As social beings, learners benefit from participation in interpersonal communications that enable them to build trust and cohesiveness in the online learning environment (Garrison et al., 1999). These interactive communications should take place between learners and between the learners and the instructor to maximize the potential benefit of the learning environment.

During the individual interview, Kathy explained her role as a learner in the online cooperative learning environment in the following way: "My role as a learner is to gain insight and to gain as much knowledge as I can and then turning it around and put it into practice."

When describing specific aspects of her perceptions of her role as a learner in the online discussions during the course, Kathy explained that she believed her responsibilities revolve around "making sure when I do respond that I am respectful with my comments . . . providing feedback that will encourage my classmates and not tear them down." In this description, Kathy highlighted the significance of the interactions in the online forum that build unity and

interdependence among the learners in the course. Such interactions promote positive social learning climates that foster increased potential for learning (Kagan, 1994; Xu et al., 2015).

Other participants provided specific descriptions of their perceived role as a learner in the course, detailing unique characteristics and attributes. During the focus group session, Jim mentioned that his perception of his role as a learner was "to take charge of my learning and use the resources readily available to me to guide the process." He continued by stating, "My role is to be present, active, and involved."

Kaitlyn provided similar perceptions of her role as a learner in the online course during the personal interview. Specifically, Kaitlyn explained that she needs to be a responsible team player, but also focused on the importance of her peers' contributions to her learning journey. She shared, "They hold up their end by providing me with the tools I need, and I provide them with tools for them too."

Maggie expressed the importance of taking on the role of an active researcher, looking not only to the resources shared through the course platform, but asking for insights and opinions from classmates and colleagues regarding materials and ideas. When reflecting on the lesson plan activity, Maggie described how her classmates encouraged and motivated her to think critically about the course material: "They really made me dig deep and really made me see what teachers go through to prepare and teach a course" by sharing all the steps taken to prepare a strong lesson plan.

When responding to how she perceived her role as a learner in the course, Kathy specifically focused on the importance of helping others in gaining a better understanding of the material through the online learning community: "I have always felt like my experiences are another way to teach someone. I say that 'My struggles are someone else's testimony,' meaning

that what I may have struggled with can help someone else." Kathy's perspective directly addressed the social and cognitive presence within the learning environment, supporting the need to develop strong community and connections among class participants through intentional planning of course activities and through facilitation of meaningful dialogue within the learning experiences.

**Major Theme 2: Connectedness with Instructor**

The second major theme that emerged from the study, connectedness with instructor, addressed the aspects of cooperative learning activities that fostered connectedness and community within the online learning environment between the individual students and the instructor of the course. These aspects include creating a student-friendly learning platform, maintaining clear lines of communication, providing valuable feedback to promote growth, and encouraging personal exploration of topics covered in the course. Within the major theme of connectedness with instructor, three subthemes emerged: communication methods, value of feeling connected, and the role of the instructor (see Table 3).

Table 3

*Theme 2: Connectedness with Instructor*

| Theme 2: Connectedness with Instructor | |
|---|---|
| Subtheme | Code |
| Communication methods | Blackboard (32), Video messages (23), Video conferences (21) Email (11), Phone (6) |
| Value | Face-to-face or video messages (24), Need more interaction (12), Very important (12), Instructor needs to know student (8), Hard to build relationships online (6) |
| Role of the instructor | Facilitator (21), Communicator (19), Clarifier (16), Guide (14), Participant (14), Motivator (14), Encourager (12), Teacher (12), Responder (12), Evaluator (11), Expert (9), Describer (8), Mentor (8), Challenger (7), Creator (6), Helper (5), Fair (4) |

*Note.* Numbers in parentheses indicate the number of times the specific response was provided.

**Communication methods.** The first subtheme that emerged within the major theme of connectedness with the instructor was communication methods. The manner through which learners communicate with their instructor has been shown to have a substantial impact on the experiences the individual learners have within the online educational environment (Garrison et al., 1999). Specifically, through engaging interactions with the instructor via multiple modes of communication, the potential for individual learners to make personally meaningful connections to the instructor and, ultimately, the course material, is maximized (Shadiev et al., 2015).

In his personal interview, Roy shared that the instructor used several modes of communication to provide guidance and direction about the course tasks and assignments. Specifically, Roy explained, “The instructor would provide specific feedback and redirection about the expectations and goals of the activities for the week.” These communications are integral to building a strong teaching presence within the online learning environment according to Garrison et al. (1999).

Matt stated the video messages and video chats were especially helpful in connecting him personally to the instructor. He explained that email messages from the instructor paired with the video messages and video chats caused him to feel more connected to the teacher of the course. These perceptions were echoed by Kathy who shared that her instructor communicated consistently with her and her classmates throughout the duration of the course through email, discussion board and community posts on the course platform, and through targeted video messages to highlight specific course information. Kathy stated, "She would check in with us a lot, unprompted. Just really a good communicator who wanted to make sure we knew what we were supposed to be doing for the class." Ashley provided similar perspectives, explaining the instructor of the course was an encourager: "She always sent very individualized emails . . . it makes me feel, you know, encouraged individually, not just as a whole class."

**Value of feeling connected.** The second subtheme that emerged within the major theme of connectedness with instructor was value of feeling connected. Similar to connectedness with classmates, the level of perceived connectedness learners have with the instructor of the course in the online environment has been observed to have an impact on the learning experiences of students in the online learning environment (Oyarzun & Morrison, 2013). Roy shared, "You get more personal attention from your instructor" in the online learning environment. Roy explained that this personal attention opens opportunities to build strong rapport with the course instructor. It is through such engaging, interpersonal communication incorporating simultaneous interaction and individual accountability that learners are encouraged to participate in deep, thoughtful, and personally meaningful discourse that promotes overall motivation and academic achievement within the online setting.

During the personal interview, Ashley shared how personal communications with her instructor during the course led her to feel a sense of comfort and a desire to put forth her best even during emotionally and physically stressful times. She explained because she was comfortable informing her instructor that she was going through physically painful health issues and would be enduring surgeries, her instructor consoled and encouraged her through prayer and positive personal messages. Ashley recalled, "At the beginning [of the course] I let her know I've been going through some health stuff and that I'm going to do my best and she's been very supportive." Ashley believed it was because of the personal communication and connection she had with the instructor that she found the strength and motivation to make it through the tough times during the course and finish strong.

**The role of the instructor.** The third and final subtheme that emerged within the major theme of connectedness with instructor was the role of the instructor in the online learning environment. When asked what they believed the role of the instructor to be in the course, several participants stated the instructor should serve as a facilitator. For example, Kaitlyn stated, "That's what they're there for . . . to facilitate your learning more than to teach it directly."

Another common response regarding the role of the instructor provided by the study participants was the instructor should be an encourager. During an individual interview, Roy shared that the instructor should "push learners in the direction of success; motivate; help guide and direct the learning process." Ashley stated the instructor's role in this course was to "truly guide us through the learning of the points of the lessons," serving as a coach and a mentor throughout the learning process. To illustrate the mentor and coach role, Kaitlyn stated, "I could

email and ask, ‘I know this isn’t related to the assignment, but what do you think about this situation?’ and the instructor would provide guidance and direction on the situation.”

A final recurring response from the participants was that the instructor played the role of a strong communicator. Specifically, the instructor provided clear expectations and goals for the course and the learning activities. The clear expectations provided the foundation for the overall climate within the learning environment. Additionally, as a strong communicator, the instructor provided specific instructional coaching and guidance as necessary to individual students and groups of students throughout the duration of the course.

**Major Theme 3: Engagement with Course Material**

The third major theme that emerged from the study, engagement with course material, focused on the aspects of cooperative learning activities that specifically address cognitive presence in the online learning environment. These aspects include creating a student-friendly learning platform, maintaining clear lines of communication, providing valuable feedback to promote growth, and encouraging personal exploration of topics covered in the course. Within the major theme of connectedness with instructor, three subthemes emerged: deepening understanding, challenging, and freedom to explore (see Table 4).

Table 4

*Theme 3: Engagement with Course Materials*

| Theme 3: Engagement with Course Materials | |
|---|---|
| Subtheme | Code |
| Deepening understanding | Discussion boards (37), Elaboration of ideas (16), Lesson plan development (16), Biblical worldview (13), Course readings (12), Collaboration space (9), Video messages (9), Emails (5), Level of engagement (4) |
| Challenging | Requires time management skills (22), Self-discipline (17), Prioritization skills (14), Seek out assistance (13), Requires strong written communication skills (12), More assignments (11), Lengthy readings (8), Scholarly sources (7) |
| Freedom to explore | Share and exchange ideas (23), Apply information to the workplace (21), Focus on aspects of personal interest (12), Delve into particular topics (9) |

*Not*e. Numbers in parentheses indicate the number of times the specific response was provided

**Deepening understanding.** The first subtheme that emerged within the major theme of engagement with course material was deepening understanding. A key focus of any educational program is to instill in learners a deeper understanding of course content and material. Course structures that incorporate cooperative learning activities are used to engage individuals in experiences that build positive interdependence, individual accountability, equal participation, and simultaneous interaction (Kagan, 1994). Through such learning experiences, task completion depends on every participant doing his or her part to support a common goal making the engagement in the activity equitable for all parties. The online environment provides a unique atmosphere for such learning to take place.

When asked to describe any course activities or tasks that provided the participant to deepen his or her understanding of course content, several participants pointed to the lesson plan activity. Although the lesson plan was an individual project through which specific phases were submitted to the instructor, who then provided descriptive feedback on sections, several

participants explained that they looked to their peers in the course to discuss the assignments within the project prior to submitting any drafts to their instructor. Maggie shared, "The lesson plans really made me dig deep and really made me see what teachers go through to prepare and teach the course." Kathy provided similar feedback during the personal interview:

> Definitely how to approach the planning of a lesson. It was really helpful to me to look into how the material impacts others. When planning the lesson, we focused on the cultural aspects as well as the methods used in the lesson.

She further explained how she and some of her classmates communicated via email and some shared thoughts through text messages and phone calls about what materials to use and what instructional approaches should be implemented to execute the proposed lesson plan effectively. Kathy also stated that she thought the course could have included discussion board activities about the actual lesson plan project to increase the cooperation and collaboration among classmates: "I think this could have been a great discussion board post, though; I could have gained information about how others thought about this too."

Another common thread throughout the individual interview responses regarding the activities that helped the participants deepen their own understanding or that of their classmates during the courses was the open discourse between and among the learners in the course sections. For example, Kaitlyn stated, "The open discussions allowed me to build community on the job as well because I would take discussion topics from class and talk to my colleagues at school about the topics to get their opinions as well."

During the focus group session, five of the six participants provided feedback regarding the benefit to the dialogue created through the online discussion posts and web-based communications. Jackie shared that she found the discussion boards specifically helpful in

deepening understanding of course material: "Discussion boards got the class as a whole to interact with one another and help one another to understand the assignments more." Kathy supported Jackie's remarks, stating,

> I also think the discussion boards played an important role in helping highlight important points from the course. The discussion boards give us all different viewpoints as to how we may see a topic and a way to explain our viewpoints.

Kaitlyn brought closure to the discussion question by summarizing her thoughts regarding the benefits of the online dialogues within the course. She explained that the discussion boards provided a structured environment for all classmates to share their views, strategies, and ideas about the course content in a nonthreatening manner:

> I was much more willing to openly share my thoughts and experiences in this way rather than if I had been in a classroom standing in front of everyone. It allows you to take time to construct and think about what you want to say and how you want to say it. This makes for a much more effective discussion, in my opinion.

**Challenging.** The second subtheme that emerged within the major theme of engagement with course material was the level at which the coursework and activities were challenging. Several participants shared they found the learning activities within the online cooperative setting to be at a more challenging level than activities they have experienced in the traditional face-to-face educational setting. During the personal interview, Jackie addressed this point: "I think the expectations are higher in the online setting." When asked to expand on why she felt the expectations were more challenging, she stated, "You have to really do research; your sources have to be scholarly."

Other participants echoed Jackie's perceptions, and a few shared the challenges they faced with navigating online versus print textbooks and resources. During the focus group session, a few participants highlighted the online texts and resources as one of the biggest challenges they faced while completed course assignments and tasks. Kathy explained, "I prefer having actual textbooks to using copies via online . . . I prefer to have the book in my hands." Maggie voiced similar sentiments during the focus group session:

> I enjoy hearing a lecture and holding a physical book during the lecture. . . . I like to ask questions and get an immediate response, and not having to wait. Sometimes by the time the instructor responds I have forgotten what I was asking.

Maggie's comments prompted Roy to share, "The turnaround time for a response from the professor is challenging. Sometimes 24 to 48 hours is too long to wait when we are having issues." Roy continued by explaining that he understands that there needs to be a range of time instructors are given to respond to inquiries and concerns pertaining to course activities, but he wondered if there might be a method available for more timely responses to immediate questions that could impact the ability for a student to complete a time-sensitive task. These comments were reminiscent of statements made by Ashley during the personal interview:

> With the online classroom, you know, I have to email my professor, hope that the person understands my question, and then wait for the response. Not that the professor takes a long time, but I feel like it is a lot of back and forth with questions or not understanding an assignment.

Kaitlyn then shifted the focus group discussion to the challenges that she has faced with communications between and among her classmates within the discussion board forums. She

highlighted that the discussion board topics are often too formulaic and tend to result in dry or unengaging dialogue:

> The answers that are given—mine included—are typically the basic requirements and don't truly foster any genuine discussion. I think that if there were the option to do some sort of live forum where the class could actively discuss the topic that it would be more productive than being required to post. I feel that it would be a more authentic method to actively engage each student.

Kaitlyn's comments provided insights into how online discussions may be tailored to foster deeper, more engaging conversations among classmates through targeted, focused topics and conversation starters.

**Freedom to explore.** The third and final subtheme that emerged within the major theme of engagement with course material was freedom to explore information and content addressed in the course according to one's own interests. Because online educational platforms provide environments that naturally comprise a diverse population of learners as a result of participants being from various geographic regions, the potential for diverse ideas and perspectives among the learners is heightened. Through collaboration space threads, introductory posts, and online discussion board activities, course participants have opportunities to gain insights from classmates that may prompt personal interest in specific topics or ideas. Through the personal interviews, several study participants shared how the cooperative activities embedded within the course prompted them to further investigate specific topics and ideas shared by their classmates through online course discussions and collaboration space posts.

**Major Theme 4: Personalization of Learning**

The fourth and final major theme that emerged from the study was personalization of learning. This major theme presented possible variables that may have impacted participant perceptions of and experiences with cooperative learning activities within the online learning environment outside the construct of the CoI model (Garrison et al., 1999). These aspects include the convenience by which participants were able to interact with the course content, participants, and the instructor; how invested one was with the actual material and tasks; the learning styles and preferences of the individuals; and the perception of individual investment in the course itself. Within the major theme of personalization of learning, four subthemes emerged: convenient, self-discipline, learning modes, and personal investigation (see Table 5).

Table 5

*Theme 4: Personalization of Learning*

| Theme 4: Personalization of Learning | |
|---|---|
| Subtheme | Code |
| Convenient | Flexible scheduling (26), Anytime (23), Conducive to family obligations (19), Anywhere (17), Conducive to full-time employees (16), Self-paced (16) |
| Self-discipline | Time manager (14), Time to focus (13), Evaluate personal progress (9), Examine information (8), Commitment to learning process (7), Deeper discussions (6) |
| Learning modes | Engagement (31), Conversations (26), Auditory (24), Practical application (22), Visual (21), Kinesthetic (18), Listening (17), Tactile (17), Observing (15), Note-taking (14), Writing (11) |
| Personal investigation | Open exchange of ideas (23), Apply information to own experiences (17), Shared experiences from classmates (15), Examine areas of interest further (8) |

*Note.* Numbers in parentheses indicate the number of times the specific response was provided

**Convenient.** The first subtheme that emerged within the major theme of personalization of learning was the convenience of the format and structure of the learning environment. Of the

10 study participants, nine of the individuals were employed with full-time positions at their place of business. Additionally, all 10 of the participants were adult learners who had returned to school after being in the workforce for a number of years. Thus, the convenience of the online educational program provided a schedule that was flexible enough for them to continue their current employment while pursuing their education degree.

When asked during the personal interview why he opted to pursue an online education at the University of Learning, Roy explained,

> For almost 20 years I have looked at online learning as the best possibility for me because brick-and-mortar schools just don't work. I've traveled; I've been in the military. The traditional school setting might not have worked for me, but the online learning setting has been the best thing for me.

Matt provided a similar response: "Ultimately, the convenience of the online setting is what allowed me to return to school to finish my education degree. My work schedule does not permit me to attend classes during the traditional school hours." Jim explained during his personal interview that the online format enabled him to continue serving in his current supervisory role at a national mailing organization, "The online setting provides the freedom and convenience I need to meet my educational goals while I am meeting the demands of my work and family life." The seven other participants all shared similar sentiments: online education provided them the ability to pursue their goal of obtaining a degree in education while maintaining their current positions at their placement of employment.

**Self-discipline.** The second subtheme that emerged within the major theme of personalization of learning was self-discipline. Each of the 10 study participants shared that they found the online course required a high level of self-discipline in order to complete the assigned

cooperative activities and to meet the stated task deadlines. During document analysis, it appeared from the course structure, format, assigned tasks, and overall course design, that building of specific soft skills critical for success as a student in a postsecondary program and as a future educator in the traditional, blended, or fully online environment was intentional. Through the lens of Garrison et al. (1999), the course appeared to embody a strong teaching presence. Conversations with study participants via the individual interviews and the focus group session strengthened this initial impression.

Kaitlyn shared that the course, like other courses in the program, "is difficult and requires a lot of self-discipline, and I have struggled with this at times"; but the format has provided her freedom to structure her work and study time in a manner that allowed her to be successful with the course tasks and assignments. Specifically, Kaitlyn shared with the focus group participants that she has a learning disability that makes focus and attention difficult for her. She explained that in high school and her first attempt at the traditional college setting, she would become frustrated and overwhelmed sitting in the traditional classroom environment. She shared that her stress and anxiety levels became too high to manage, causing her to believe she could not be successful in a college program. Through the online education program at the University of Learning, Kaitlyn found her niche and has maintained an "A" average in the program since she started her course work. Kaitlyn attributed her success to the self-discipline she has built as she navigated the online education program. She specifically noted that the cooperative activities embedded in this course have helped her increase her skills, primarily with respect to identifying critical content and summarizing key points and details from course material as a result of the engaging dialogue with her classmates.

Matt also provided insights into the impact self-discipline and motivation had on his success in the course. Matt shared that because the course is self-paced, it differed significantly from the traditional face-to-face classroom setting. Specifically, he shared that it is important to remain focused and plan one's work time, "because you don't have a professor, you know, lecturing to you or talking to you. You have to make a plan and follow your plan to get the assignments completed on time." The comments shared by the study participants indicated that the course structure and design fostered a learning climate that promoted self-disciple within an interdependent online educational environment.

**Learning modes.** The third subtheme that emerged within the major theme of personalization of learning was learning modes. Through the personal interviews and the focus group session, participants provided perspectives about their own learning preferences, what they learned about themselves as learners, and what they learned about their classmates as learners. Garrison et al. (1999) highlighted the significance of online learners making deep, meaningful connections with the course material and activities so information and experiences may be internalized. Of the 10 study participants, nine self-identified as being primarily visual learners. Only one of the study participants self-identified as being primarily an auditory learner. All the study participants shared that they benefitted from multiple modes of learning, specifically those addressing audio-visual and kinesthetic modalities. Additionally, each of the study participants shared that they benefitted from discussion-based communications in which conversations about the course material are the focus. When asked during the personal interview what he learned about himself as a learner during this course, Roy stated,

> The big thing I've learned about me as a learner during this course is I learn best in the online setting through discussions with my classmates about various topics presented. I

> also found that I really enjoy deeper conversations about topics and see how I can use these methods when I move into a full-time teaching position.

Matt explained that he learned he needs to have clear and concise expectations to feel confident in beginning assignments and tasks. He also shared that he has learned that he is comfortable asking for clarification from him peers or the instructor within the online learning setting. He attributed this in part to the cooperative nature of the discussions and activities of the course format because the structure of the class fostered continued communication and discourse about the tasks and assignments. Matt shared,

> If, if I didn't understand something I would definitely ask for clarification. I might ask my classmates in email or text message, "Hey, what does this mean? What does this rubric mean?" Or, you know, before submitting any assignments I might ask the instructor, "Hey, is this the right way? Or is this what you're looking for?"

**Personal investigation.** The fourth subtheme that emerged within the major theme of personalization of learning was personal investigation. When asked to describe what aspects they liked about participating in online education incorporating cooperative learning activities, several participants referenced the environment permitted a venue for personal investigation and research into areas of interest as a result of communication with classmates.

As indicated by Garrison et al. (1999), cognitive presence is increased when learners are engaged in activities that require them to access prior knowledge, reflect on the new ideas, engage in discourse pertaining to the ideas, and draw personal conclusions and confirmations relevant to the new information. Throughout the course, learners participated in sustained communications with their classmates and their instructor that, at times, prompted specific interest in a particular topic. For example, several study participants referenced how

communications they participated in with their classmates about the application of skills addressed in the course to their actual positions as current educators peaked their interests. Several of the participants were currently serving in the classroom as education practicum students, teacher assistants, educational aides, paraprofessionals, or substitute teachers. These individuals were personally invested in some information presented in the course at a different level than were those not currently working in a school setting.

## Research Question Responses

Information gleaned from three data sources was used to answer the central research question and the three subquestions. How postsecondary education students described their experiences with online cooperative learning activities is outlined in the following sections.

### Central Research Question

The central research question of the study was: How do undergraduate education students describe their experiences with cooperative learning activities within an online teacher education course in terms of social, cognitive, and teaching presence? Through the individual interviews and the focus group session, insights were gained regarding the participants' experiences with cooperative learning activities within the given online teacher education course in terms of social, cognitive, and teaching presence.

Based on the data provided by the participants, undergraduate education students generally described their experiences with cooperative learning activities within an online teacher education course as positive, noting how they connected with their classmates and their instructor during the course (Major Theme 1 and Major Theme 2, respectively), engaged with the course material (Major Theme 3), and how they found the course structure to support personalization of learning (Major Theme 4). However, the participants collectively indicated

specific areas that could be improved to increase connectedness among the learning community (Major Theme 1 and Major Theme 2); deepen cognitive engagement through focused, intentional cooperative interactions (Major Theme 2 and Major Theme 3); and potentially increase the exchanges with the instructor through specific activities intended to engage the student and the teacher in communications about the course content on a more personal level (Major Theme 3 and Major Theme 4).

**Research Subquestion 1**

The first research subquestion was: How do undergraduate education students describe their interactions with peers within cooperative learning activities in the online learning environment? Although the participants provided unique, individual responses to this inquiry, there was little variation in the way the individuals described their personal interactions with peers within cooperative learning activities in the online learning environment. During the individual interviews, several participants shared that the interactions with their peers fostered the building of positive and trusting relationships among them, providing support for Major Theme 1, connectedness with classmates. Specifically, Jackie highlighted how the discussion boards and virtual interactions fostered an environment for sharing ideas to apply to the classroom as an educational practitioner: "You pick up tips and realize, 'Oh, this is something that I can implement in my classroom,' and it prompts you to connect to that individual or the group sharing the information."

Kaitlyn shared a similar perception as she described her feelings of connectedness with her classmates. She specifically highlighted the importance of the initial introductory post and the required responses to the post in building a sense of community within the online learning environment: "It's good because you get to know your fellow classmates; it's kind of cool to

read some of their stories." Kaitlyn continued to explain that those connections, which may seem small at the time of the initial posts, actually have a great impact on the depth of the interactions with the individuals throughout the duration of the course. Kaitlyn and Jackie's responses provide direct support for Major Theme 1, indicating the methods used for communication are integral to the learning experiences.

With these positive descriptions of connectedness and interpersonal communications among peers within cooperative activities in the online educational environment came clear descriptions of areas that were lacking in terms of social presence. Specifically, although the overarching perception of the study participants was that they felt comfortable in sharing their personal views and opinions within their classmates, there was also a clear trend in the perception that there could be more valuable online discourse within the discussion board activities. This information provided direct evidence for Major Theme 1, connectedness with classmates, and Major Theme 3, engagement with course material, suggesting how participants interact with their peers within the online learning environment will have a direct impact on the way those individuals experience learning. Specifically, Maggie shared, "When we had discussion boards it was not an interactive conversation; it was just to respond to get the grade." In response to this point during the focus group session, Roy shared, "The discussion board was a hope for interaction with my peers; the grade was minimal. I wanted the conversation." These two points illustrate how different the perceptions may be regrading experiences with cooperative activities even when the format and structure have minimal variables. When implementing intentionally structured cooperative discussions within the online learning setting, the positive interdependence will be fostered through the simultaneous interactions, increasing social and cognitive presence levels (Major Theme 1 and Major Theme 3).

Participants generally described their interactions with peers within cooperative learning activities in the online learning environment as positive communications that helped build community and engagement among them as learners, directly addressing Major Theme 1, connectedness with classmates. The data also indicated overall that the participants did not feel a strong connection to their classmates during weeks when discussion board activities were not included in the course assignments. These data suggest it is critical to design activities intentionally that incorporate specific communication methods to foster sharing of perspectives among all learners in the community. Specifically, several participants suggested adding specific discussion board activities into the course plan to increase community among the learners. Additionally, some participants suggested voluntary video conferencing or online, real-time discussions might increase the feeling of connectedness among the classmates.

**Research Subquestion 2**

The second research subquestion was: How do undergraduate education students describe their cognitive engagement during cooperative learning activities within the online learning environment? This question led to the development of Major Theme 3, engagement with course material. Specifically, participants described activities that helped them deepen their understanding of the course material through challenging learning experiences. In a variety of responses, participants described their personal perceptions of how they cognitively engaged with information and course material throughout the time they were enrolled in the course. The majority of the participants indicated they felt a high level of engagement with the course material, seeking ways to apply the information to their personal situations. This was especially prominent among those participants currently serving as an employee or intern in a school environment. Aaron specifically appreciated the discussion board activities: “They permit deep

conversations about the course content and help me better understand the material. I want to see that others think about the material because it helps me consider varying perspectives and viewpoints." Roy highlighted the importance of the combination of text readings with online interactions with peers to help build a deeper understanding of the course material, leading to the ability to effectively apply information gained to various tasks and activities.

Participants described a high level of engagement with cognitive tasks throughout the duration of the course, suggesting they experienced heightened levels of cognitive presence with cooperative activities within the online learning environment. As indicated from the themes that emerged from the data analysis, participants were continuously engaged in communication requiring them to construct meaning from multiple viewpoints and perspectives. Specifically, participants shared how the personal communications through email, discussion boards, and other modes of communication provided ways to help their classmates deepen understanding of the course material while also deepening their own understanding.

A particular activity that every participant shared was critical in deeply engaging him or her on a cognitive level was the lesson plan development project. Multiple participants provided specific examples illustrating how this one multiphase project led to deep, engaging discourse with classmates, including critiquing of ideas and one another's work even though it was not part of the actual assignments for the course. Several participants explained how the lesson plan development project would have been a great cooperative activity, including possible peer reviews for each phase submission prior to submitting to the course instructor. Such reflective responses from study participants pertaining to course assignments and tasks suggest high levels of cognitive presence were evident within this cooperative online learning environment.

**Research Subquestion 3**

The third research subquestion was: How do undergraduate education students describe their experiences with their instructor and the instructional tools during cooperative learning activities within the online learning environment? This question prompted conversations leading to the development of Major Theme 2, connectedness with instructor, and the development of Major Theme 4, personalization of learning. Of the 10 participants, nine provided similar responses to describe their experiences with their instructor and the instructional tools within the course. Specifically, nine of the participants indicated the instructor provided very clear expectations and goals for the course through multiple mediums, including the course page on Blackboard, weekly class announcement emails and posts, weekly video messages about course tasks, and sporadic audio or video messages pertaining to particular topics or points of clarification about class content. The clear communications from the instructor contributed to positive, trusting relationships to be developed between the learners and the course instructor (Major Theme 2). Additionally, these communications also impacted the ways the participants engaged with course material, indicating the direct relationship between Major Theme 2 and Major Theme 3.

Multiple participants referenced the clear wording and formatting of the course syllabus and course schedule, noting the clarity of the objectives and the timelines provided with each assigned task or activity. These insights lent support for the development of the communication methods subtheme. Of the 10 participants, nine indicated the rubrics attached to each course assignment were clear, detailing all expectations for the given tasks. One participant specifically addressed the prompt response of the instructor when questions did arise about specific aspects of assigned tasks; the individual also noted the manner by which the instructor provided

examples of model student work to illustrate the desired outcome prior to the assignment due date (Major Theme 2 and Major Theme 3). Of the 10 participants, five recalled how the instructor provided detailed descriptive feedback on phases of a specific course project, allowing students to make corrections to given areas prior to submitting the final project, supporting the development of the role of the instructor subtheme. The participants each described how this process positively impacted their learning of the course material and helped them to feel more confident as they approached the final project submission.

The collected data indicate most study participants described their experiences with their instructor and the instructional tools during cooperative learning activities within the online learning environment in a positive manner. The data also indicate the instructor created a strong teaching presence within the online learning community as a result of the preparatory activities involved in designing and developing the course in addition to the actual implementation of the instructional delivery and assessment protocols followed. Multiple participants noted specific actions taken by the instructor to draw attention of the students to critical aspects of course material or assignments, which likely increased the potential of students to be successful on certain tasks and activities.

## Summary

Chapter Four included detailed descriptions of the 10 participants in this embedded single-case study. The participants included undergraduate education students enrolled in one of five sections of a specific online education course at the University of Learning between the Spring and Summer terms of 2018. The focus of the study was to understand undergraduate education students' experiences with online cooperative learning activities. The process for theme development began with pattern-matching the data to Garrison et al.'s (1999) CoI model.

Further analysis of the transcriptions from the interviews revealed four overarching themes: (a) connectedness with classmates, (b) connectedness with instructor, (c) engagement with course material, and (d) personalization of learning. Summarized comments and direct quotes from the participants illustrated the themes discovered during the study. The provided documents supported the development of a rich description of the case and served as supporting evidence for participant responses. Information found in the three data sources was used to answer the research questions regarding how postsecondary education students describe their experiences with online cooperative learning activities. The chapter concluded with a summary of the information presented in the section.

# CHAPTER FIVE: CONCLUSION

## Overview

The purpose of this embedded single-case study was to understand undergraduate education students' experiences in cooperative activities within online learning environments with respect to social, cognitive, and teaching presence. The following section provides a summary of this study's findings. A review of how the central research question and subquestions were answered is presented. Then, the theoretical and empirical foundations from the literature are discussed. There are several implications from this study including theoretical, empirical, and practical implications, and are explained in detail. Because all studies include delimitations bounding the study and limitations that influence the results, the delimitations and limitations of this study are discussed, followed by recommendations for future research. Finally, the chapter concludes with a summary to review the important conclusions drawn from the study.

## Summary of Findings

This study included three different forms of data: documents, individual interviews, and a focus group interview. Each data type contributed to the overall description of the case and a thematic understanding of postsecondary undergraduate education students' experiences in online cooperative learning activities. The main source of data came from the individual interviews. Each interview was recorded, transcribed, coded, and analyzed. A word table was created with important words and phrases from the participants categorized into themes. A focus group comprising six of the 10 study participants added additional insights pertaining to the experiences of the individuals. Adding further insight were the collected documents that were analyzed prior to conducting the interviews and reviewed throughout the duration of the study.

The four overarching themes discovered included (a) connectedness with classmates, (b) connectedness with instructor, (c) engagement with course material, and (d) personalization of learning. The central research question used to guide the study served to determine how the participants described their experiences with cooperative activities in relation to social, cognitive, and teaching presence.

The central research question guiding this study addressed how undergraduate education students describe their experiences with cooperative learning activities within an online teacher education course in terms of social, cognitive, and teaching presence. The purpose of this question was to communicate directly with online undergraduate postsecondary education students enrolled in a given course to determine how these individuals experienced cooperative activities within the course structure. The question also served as a platform for these participants to provide personal feedback regarding their perceptions of the course design, structure, communication tools, and overall instructional delivery methods.

The participants' responses to the directed questions suggest the personal interactions the instructor initiated with the students in the course may have positively impacted the overall perceptions of connectedness with the instructor. Additionally, such interactions may also have positively impacted participants' perceptions of engagement with course material. Participants' responses exposed concerns regarding the manner in which cooperative activities were implemented within the online learning environment, which may have affected perceptions of connectedness with classmates and inadvertently impacted cognitive presence levels. The document analysis and review of participant responses revealed the courses design, structure, and overall delivery methods met the expectations for creating a strong cognitive and teaching

presence, but the course activities may lack in developing a strong social presence within the learning environment.

The first research subquestion addressed how undergraduate education students describe their interactions with peers within cooperative learning activities in the online learning environment. The participants described specific activities within the course that required them to interact in meaningful ways with their peers. In particular, the participants noted that the discussion board assignment requiring students to introduce themselves to their classmates and respond to at least two introductory posts from peers helped build community and connectivity among the participants. Additionally, the participants pointed to the discussion board posts and the collaboration space within the course's online platform as the main methods for interactions with peers in cooperative activities throughout the course. In describing interactions with peers within the cooperative activities, the participants shared additional assignments or tasks requiring meaningful dialogue with classmates would enhance the learning experience within in the online education course.

The second research subquestion addressed how undergraduate education students describe their cognitive engagement during cooperative learning activities within the online learning environment. The participants described specific activities within the course that required them to engage cognitively in meaningful ways with the course content. Of the 10 participants, seven noted that the discussion board activities provided a structured venue to deepen one's personal understanding of course content as well as to help one's peers deepen their understanding of the course material. The lesson plan development project, although not intended to be a cooperative activity according to the course syllabus, was noted as a task that organically developed into a cooperative activity as a result of the community built among the

class members. Participants explained how they communicated in small groups to share ideas and provide feedback to one another on their progress with the individual lesson plan phases. Several participants suggested additional activities that require such peer interaction should be added to the course syllabus and structure to create more meaningful cognitively engaging activities among the learners.

The final research subquestion addressed how undergraduate education students describe their experiences with their instructor and the instructional tools during cooperative learning activities within the online learning environment. The participants provided descriptions of interactions they had with their instructor and the instructional tools during cooperative activities throughout the duration of the course. Several participants referenced the instructor's role in facilitating conversations among the learners within discussion boards and through weekly class announcements and video messages. Specifically, participants explained the course platform and structure promoted collaboration and cooperation among course members. During the focus group interview participants indicated that it might be beneficial to build in web-conferencing methods or the creation of small cooperative groups to increase the potential for deep and meaningful communications about course content to take place.

## Discussion

The findings of this study closely relate to the theoretical and empirical literature pertaining to online learning environments presented in Chapter Two. A review of past empirical research suggested the significance of creating social, cognitive, and teaching presence within online learning environments. There was also a focus on methods for increasing feelings of connectedness among learners within online learning environments in previous research. The theoretical foundation for this study was based on Garrison et al.'s (1999) CoI model. The data

were pattern-matched to social, cognitive, and teaching presence to validate their appropriateness and completeness for describing experiences within cooperative learning activities in the online learning environment. The following sections explain how this study relates to the theoretical and empirical foundation of literature and presents additional information regarding experiences of undergraduate postsecondary education students' experiences with cooperative activities in the online learning environment at a regionally accredited postsecondary institution offering fully online degree programs in the area of education.

**Theoretical Literature**

The grounding theoretical concept of this study was drawn from Garrison et al.'s (1999) CoI model. Rooted in social constructivist educational theories on learning, the model draws upon social learning and development theories to build a basis for framing social learning in an online educational environment. A key claim of the CoI model is that "learning occurs within the community through the interaction of three core elements" (Garrison et al., 1999, p. 88). The three core elements of the CoI model are (a) cognitive presence, (b) social presence, and (c) teaching presence (Garrison et al., 1999). According to Garrison et al., "When social presence is combined with appropriate teaching presence, the result can be a high level of cognitive presence leading to fruitful critical inquiry" (p. 96).

The majority of the responses from participants confirmed that their perceived levels of social, cognitive, and teaching presence within the online teacher education course impacted their experiences with the cooperative activities incorporated in the course as indicated through the first three themes that emerged: (a) connectedness with classmates, (b) connectedness with instructor, and (c) engagement with course material. An additional theme was discovered during the data analysis process that appeared to impact the participants' perceptions of the learning

experiences: personalization of learning. The theme of personalization of learning is not explicitly addressed within the CoI model but could be incorporated in the larger category of social presence. The study participants all referenced personalization of learning as a critical aspect of their decision to pursue online education, and the responses from the participants indicated that this aspect likely was a strong factor impacting their overall experiences with cooperative activities within the online learning environment.

The theme of personalization of learning emerged from participants sharing about their decision to enroll in online education courses and to pursue education as an area of study. This information was gleaned primarily from the introductory interview questions that were intended to create a nonthreatening atmosphere, develop rapport with the respondents, and foster a conversational climate to promote a comfortable, natural setting for the participants. The responses to these questions provided rich insights into the personal motivation and desire of the participants to be engaged in course assignments and tasks, which may have affected the participants' perceptions of the activities incorporated within the course.

Four subthemes within the major theme of personalization of learning emerged: (a) convenient, (b) self-discipline, (c) learning modes, and (d) personal investigation. Based on participant responses, each of the four subthemes addressed variables that appeared to have an impact on participants' perceptions of experiences with cooperative activities in the online learning environment. Specifically, all 10 of the participants referenced convenience as a major draw to the online learning environment and noted the format provided them opportunities to balance their work and family life with educational and career goals. This positive perception regarding freedom and flexibility in course work completion time may have inadvertently positively skewed participant perceptions of cooperative activities since work was able to be

completed at the convenience of the students within set parameters. Maggie shared, "I have five children and their agendas. I am able to work on schoolwork when I have completed my family business first. Also, the weekends work better for me to work on school." Kathy shared a similar response during the focus group session: "Online classes give me the freedom and time to earn my degree without having to show up to a class three days a week." When asked if time were not a factor, would online classes still be the educational choice of the participants, Jim stated, "Online would still be an option, although it wouldn't be nearly as strong. Having other people meet with you face-to-face can be more convenient." The strong perceptions of the convenience of the online learning environment format suggests these perceptions may have indirectly impacted participants' perceptions of cooperative activities in the online learning setting.

Two additional subthemes of the major theme of personalization of learning that emerged as having possible indirect impacts on participants' perceptions of cooperative activities in the online learning environment were self-discipline and personal investigation. All participants referenced the importance of being motivated and determined to complete tasks accurately and in a timely manner within the online learning setting. Several participants specifically noted the direct application of what they were studying to their current area of employment. Jackie shared that the online cooperative activities motivated her because "they help you pull from each other all types of information to implement in your teaching and educating." Such responses suggest a personal connection to the material being examined may increase student motivation, which could positively impact overall perceptions of social and cognitive presence. Hung et al. (2015) suggested that learners need to feel a sense of connectedness to their learning environment to maximize the benefits of the instructional activities. Directly relating content addressed in the

class to personal life through engaging discussions with colleagues may have positively skewed perception of cooperative activities within this present study.

The final subtheme within the major theme of personalization of learning that may have incidentally had an impact on participants' perceptions of cooperative activities within the online learning environment was learning modes. Because all participants self-selected to enroll in an online teacher education course as an adult learner, they likely had a relatively strong understanding of their own learning style preferences. Such knowledge may have guided them in their decision to enroll in the given course at the given time. With 10 of the 10 study participants indicating that they benefit from discussion-based communications in which conversations about the course material are the focus, it is likely that the experiences with discussion-based cooperative activities within the online course were impacted by this outside personal factor.

**Empirical Literature**

The literature presented in Chapter Two was supported recurrently by the participants of this present study. The issues participants had with feelings of connectedness with their classmates and instructor within the online learning environment, the lack of continuous engagement in deep dialogue with peers pertaining to course content, and the limited opportunities to engage in cooperative activities to create meaning through continuous communication coincided with the literature pertaining to developing and fostering communities of inquiry within online learning settings. The gap that existed in the literature was two-pronged. First, little research was available detailing the experiences of students who participate in online educational environments that incorporate cooperative learning activities. Second, there were no studies found addressing postsecondary undergraduate education students' experience of

cooperative learning activities in terms of social, cognitive, and teaching presence within online learning environments. The following section explains how this present study relates to past research and how it fills the gap in the literature for describing experiences of students who participate in online educational environments that incorporate cooperative learning activities.

The first section of Chapter Two was focused on a brief history of online learning, noting several key reasons online learning has expanded throughout the years. During the interviews, the participants corroborated the existing literature that the draw to online learning is likely a result of its innate accessibility (Christensen, Horn, Caldera, et al., 2011; Nilson, 2010) as illustrated in Theme 4. Participants referenced the freedom and flexibility of online educational programs, and several shared that they would not have been able to complete a degree program without the convenience provided by the online learning setting. Kaitlyn stated,

> I work a full-time job and it wouldn't be possible for me to take courses any other way. The thought of night classes was unappealing because I knew I would lose time with my family and be exhausted and unable to fully be invested.

Matt explained, "Ultimately, the convenience of the online setting is what allowed me to return to school to finish my education degree. My work schedule does not permit me to attend classes during the traditional school hours."

With the popularity of online learning programs rising, the effectiveness and efficacy of online learning environments began to be questioned. Previous studies have noted the many variables that contribute to delivery methods within online learning programs and platforms make drawing conclusions about the effectiveness of such programs difficult (Christensen, Horn, Caldera, et al., 2011; Gedera, 2014). The CoI model (Garrison et al., 1999) provided a

framework on which to base the level of social, cognitive, and instructional interactions that have been identified as critical factors in effective online learning environments (Hung et al., 2015).

The second section of Chapter Two included a description of each interconnected presence within the CoI model (Garrison et al., 1999), illustrating how each facet supports the others. Prior research suggests dialogue among participants is vital to creating a culture of community and cohesion within the online educational environment, ultimately fostering student learning (Golding, 2015; Karp et al., 2011; Pilcher, 2016). Revealed in the literature, and consistent with the findings of the study in Theme 1, was the need to have a strong level of social presence within the online learning environment.

Previous studies suggest that students who participate in small discussion groups within online learning settings receive the highest potential for a positive learning experience (Akcaoglu & Lee, 2016; Crosta et al., 2016). The research further suggests when students in online learning programs are engaged in activities that foster positive interdependence, group cohesion and student engagement are promoted (Akcaoglu & Lee, 2016; Crosta et al., 2016). The data presented was confirmed by participant responses to questions addressing connectedness with their peers in Major Theme 1. Kathy shared, “I really liked learning about the personal experiences of my peers and how they were using the information in the course.” Eric replied, “I really like how the discussion boards allow us to communicate back and forth and dig into the information; I wish we had more opportunities to do this.” Aaron stated, “It makes me feel good inside when a person responds to my post. Like I’m valuable to that discussion.” Of the 10 participants, seven shared similar comments during the interview sessions, indicating a feeling of connectedness with their classmates resulting from the cooperative discussion board activities.

Of the participants, two indicated they did not feel connected to their classmates during the course and when asked to describe why they felt that way, Maggie said,

> I mean, yes we had a discussion board, but it was so strict that you worried about how you said something, what format did you put it in, and what bullet you used instead of really just discussing with your fellow classmates.

Ashley responded to the question stating, "I feel like the responses were just responses—like it was an assignment—it wasn't [to] connect with your peers." Maggie and Ashley's responses provide insight into how perceptions of the purpose of an assignment may influence perceived social presence within online cooperative discussion board activities. Their replies also indicate there could be additional outside factors contributing to their feelings of disconnectedness with respect to the discussion board activities not addressed in the questions posed during the individual or focus group interviews. Additional follow-up questions did not uncover any specific reasons for this perception to be held, although both participants did share that they struggled with the online learning format and structure in general.

Several past research studies have highlighted the importance of cognitive presence to maximize student learning and engagement within online learning environments (Beckman & Weber; 2016; Breivik, 2016; Kuo et al., 2013). During the participant interviews, several individuals shared how the interactive discussions kept them connected with their peers by developing a true sense of community. This was further supported by participant responses to questions about how they perceived their engagement with course material as illustrated in Major Theme 3. Kaitlyn provided insight during the individual interview about how she would have liked to see the discussion board activities go a step further to increase the level of cognitive engagement as shown in the following response: "I think responding to one post would facilitate

a lot more of an in-depth discussion. Like, respond to a post and then reply to a reply, basically. So it kind of makes the conversation go that extra step further." A similar suggestion was made during the focus group interview, and several other participants affirmed the alternate method would likely create a more engaging discussion. These comments support the data presented in various previous literature outlining effective methods for implementing cooperative activities in online learning environments (Cronin et al., 2016; Huang et al., 2016; Oyarzun & Morrison, 2013).

In addition to social and cognitive presence levels impacting experiences of participants in online learning environments that incorporate cooperative activities, recent research also suggests teaching presence has a strong influence on the outcomes of student learning. Specifically, Capra (2014) found that social and cognitive presence are directly impacted by the manner in which course activities within the online environment are designed, teaching presence. The impact of teaching presence on the overall CoI likely is stronger than social or cognitive presence. Because teaching presence incorporates all planning, course design, structure, and delivery implementation, data suggest it would be difficult to create strong social and cognitive presence without a strong teaching presence (Capra, 2014; Du et al., 2012; Huang et al., 2016; Hung et al., 2015; Oyarzun & Morrison, 2013). Data from participant responses support the findings in the literature and are illustrated through Theme 2 and Theme 3 through discussions of feelings of connectedness with the instructor and engagement with the course material.

The third section of Chapter Two defined cooperative learning for this study, outlined the tenets of cooperative learning, and described the research available illustrating correlations between cooperative learning and student achievement. Four specific elements were noted as integral to cooperative learning activities: (a) positive interdependence, (b) individual

accountability, (c) equal participation, and (d) simultaneous interaction (Kagan, 1994). Joliffe (2007) found that cooperative learning "requires pupils to work together in small groups to support each other to improve their own learning and the learning of others" (p. 39). Participant responses during the individual interviews and the focus group interview session, also outlined in Major Theme 3 and addressed in part in Major Theme 1, validated the literature, but also provided additional insights into the significance of the design and frequency of the cooperative activities included in an online learning course. Because cooperative activities rely heavily on group participants engaging in continuous dialogue with their group members, the manner by which the cooperative tasks are designed may dramatically affect the implementation of the tasks themselves by the participants (Davidson & Major, 2014).

Data from participant interviews highlighted ways the structure and format of the discussion board activities impacted their interaction with the tasks. The majority of the participants indicated they benefitted greatly from the dialogue within the discussion board activities, but they would have liked to have more opportunities to engage in such tasks at a deeper level. The participant responses specifically supported research conducted by Cronin et al. (2016); suggesting online cooperative learning platforms provide a unique venue for learners to engage in the learning process in a safe, nonthreatening space. Responses from several participants referenced this aspect of the cooperative learning activities being a benefit to them as learners. Jim shared,

> I felt very comfortable sharing experiences, perspectives, and the like. Possibly more so than in a residential school. Typing gives people more time to think about responses and the subtle anonymity of not seeing someone's face tends to make a person more bold.

Although the participant responses did corroborate the findings from previous research, they also added insights into how tenets within cooperative learning and the CoI model may be best married through targeted, intentional design and structure at the course development phase. Additionally, data gathered from the participant interviews support research from Tombak and Altun (2016). The majority of the participants indicated the feelings of connectedness and community created within the cooperative dialogues motivated them to want to participate in additional cooperative discussions and communications about the course content. Some participants explained how they created their own cooperative groups to complete projects assigned within the course that did not have discussion activities assigned to them.

The fourth section of Chapter Two presented information addressing the significance of intentional student grouping. Although the participant interview data did not provide explicit information to corroborate findings from previous research studies, information may be gleaned from the interviews that suggests grouping may have a positive impact on students' perceptions of their learning experiences. The existing research indicates that when planning cooperative groups, it is important to consider the demographic composition of the group and the total number of students in the group (Chen & Wang, 2013; Chikh & Hank, 2016; Kagan, 1994). Because individual gifts and talents of those comprising the groups are varied, the makeup of the groups may be impacted significantly solely based on demographic factors (Chikh & Hank, 2016). Several participants alluded to their gravitation toward certain individuals when engaging in cooperative discussions and tasks within the online course. As a result, there were many classmates with whom they may never have engaged during the duration of the course. Participants also mentioned that if the students had been given a group of three to five specific class members with whom they would complete more cooperative dialogues, it may have

resulted in deeper feelings of connectedness and meaningful engagement with peers and the course material.

The final section of Chapter Two focused on cooperative learning in online settings. Christensen, Horn, and Johnson (2011) found that digital classrooms should be student-centered with a goal to build community in the learning environment. Data from the participant interviews support this research as shown in Theme 1 and Theme 4. Theme 2 and Theme 3 are also indirectly addressed through the research and participant interview data as a result of the interconnected nature of the aspects of the CoI model. Ku et al. (2013) highlighted a key point referenced by several participants in this present study: participants enjoyed working in the cooperative setting, but they faced challenges from not being able to meet face-to-face with the cooperative group members when completing cooperative activities. Several participants from the current study shared similar perceptions during the interviews, noting that at times it might have been beneficial to have online, real-time web-conferencing to complete cooperative discussions.

All participants from the focus group interview provided rich qualitative data regarding the format of the focus group interview for the present study, which aligned well with the data presented by Ku et al. (2013). To address technological difficulties with connectivity of some participants, the focus group questions were posted on a live Google Doc shared with all participants of the focus group. Each participant had the option of joining the video Google Meeting or joining by phone, but all were "present" in the live document, following along as I moderated the discussion. The norms set at the beginning of the session were adhered to, and rich data were gathered regarding not only the explicit questions posed, but also about the

process by which the live meeting session was conducted. All six participants shared that the format was conducive to a true, cooperative discussion that sought depth and meaning.

Kalelioglu and Gulbahar (2014) also provided data corroborated by participant interview data, and suggested that Socratic discussions in online learning environments may promote heighted levels of cognitive engagement and critical thinking. Kalelioglu and Gulbahar found this was especially evident when implementing asynchronous discussion forums, although the benefits were still observed in synchronous formats as well. Petersen and Roseth (2016) found that when members of online discussion forums are required to work cooperatively to compose and post a combined summary of their thoughts and dialogues, participants are more likely to actively engage in the academic discourse and benefit from the overall learning experience. The data collected from the present study's focus group interview participants strongly support the claims made by Kalelioglu and Gulbahar (2014), and Petersen and Roseth (2016).

## Implications

Online education is expected to continue expanding throughout the United States and across the globe in the coming years as the number of individuals seeking personalized, flexible learning environments increases. With the expected future growth in online learning offerings at all levels of education, focus must be placed on research-based methods to improve curricular and structural programming to address best practices in virtual learning. Specifically, intentional focus must be given to effective methods for engaging online students in meaningful activities that require positive interdependence, individual accountability, equal participation, and simultaneous interaction (Kagan, 1994) to increase the potential for heightened levels of social, cognitive, and teaching presence within the online environment.

Previous research regarding online learning environments has provided sufficient data to determine best practices for increasing sense of community and connectedness within online learning settings. Such research has also been adequate in providing pertinent information to inform the development of educational platforms that have been conducive to student learning and achievement. This study represents an attempt to fill the gap in online learning literature by adding qualitative data regarding the connection between the incorporation of cooperative learning activities within an online teacher education course and perceived levels of social, cognitive, and teaching presence. Theoretical, empirical, and practical implications for this study are identified in the following sections.

**Theoretical Implications**

Online learning programs are available for students of all ages and grade levels across the globe and offerings continue to expand at a rapid rate (Christensen, Horn, & Johnson, 2011). With the rise in the number of online learning options, it is important to gain an understanding of how students experience learning within such virtual settings. Of special significance is gaining an understanding of the ways postsecondary undergraduate education students describe their experiences with cooperative activities incorporated within online learning.

Student engagement and connectedness to the learning environment within online settings has been a focus across of many studies over time. As advancements in technology are made, improvements to online learning programs and platforms may be implemented to best address individual learning dominances and preferences with the goal to increase student learning outcomes in the online educational environment. To offer a detailed framework for investigating student experiences in online educational settings, Garrison et al. (1999) developed the CoI model. The model provides a structure with which to evaluate student experiences

interacting with classmates, the course material, the instructor, and the overall course delivery methods and tools. Garrison et al. (1999) claimed when the appropriate levels of social presence are combined with appropriate levels of teaching presence, the opportunities for high levels of cognitive engagement are increased. Through discussions with participants of the present study, I discovered that most of the descriptions of experiences with cooperative activities within the online learning environment were in alignment with the framework set forth by Garrison et al. (1999). Specifically, feelings of connectedness and engagement with course material were elevated among participants when cooperative activities were utilized. During the focus group interview, Kathy shared, "Discussion boards, I have found, are a great way to get to know your classmates." She further explained that discussion boards "help us get to know each other even when we are on opposite sides of the country," which increases levels of social presence among the learning community. Jackie supported Kathy's sentiments by sharing, "Discussion boards gave the class as a whole a chance to interact with one another and help one another to understand the assignments more."

The participants' responses centered on the desire to (a) feel connected to their classmates through a sense of community, (b) engage in deep, meaningful dialogue with their classmates about course material to better understand content, and (c) feel connected with their instructor through the course platform and design. For example, Maggie shared how she wished there were more opportunities to connect with her peers through interactive discussions when she was asked about her feelings regarding activities that required her to share personal perspectives about course material. Maggie stated, "I wish there were more of this. It was nice to get encouragement from peers and gain insight from them." Maggie also stated that she would like to have additional opportunities to engage with her peers in "trading secrets" about success with

instructional practices, ultimately leading to a deeper understanding of course content and applicable knowledge. Aaron offered similar views when he shared in the personal interview that interacting with his classmates via cooperative discussion board posts enabled him to "learn from others' opinions" and help shape his understanding of greater topics and ideas.

The CoI model is a unique system with which to examine the students' descriptions of their experiences with cooperative activities in the online education course. However, as previously mentioned, participants did speak about a fourth aspect affecting their experiences with cooperative activities in the online environment: personalization of learning. Participants' responses indicated a desire to explore information and to apply knowledge through personal investigation and interactions with their classmates. Working at their own pace and on their own time schedules were also identified as integral parts of their personal experiences with online learning.

Additionally, rich information was gained regarding the potential impact of the personalization of learning factor on the overall experiences of the participants with online cooperative activities as a result of the web-based focus group interview. Specifically, data from Kalelioglu and Gulbahar (2014) and Petersen and Roseth (2016) were corroborated as participants described the value they found in engaging in a real-time audio-, visual-, and text-based conversation through which deep dialogue was fostered. Participants noted that the format offered a platform for all participants to share thoughts and perceptions without concern of not hearing a comment or response from other participants. This ties directly to the convenience, self-discipline, and learning modes aspects of the personalization of learning theme.

Data gathered in this study suggest a more apt examination of student experiences with cooperative learning activities in online educational settings will require explicitly addressing

student motivation and personalization of learning factors in conjunction with the community of inquiry model. Investigating such factors through the lens of social, cognitive, and teaching presence would provide critical insights into the potential impact of individual intrinsic motivators on personal perceptions of (a) feelings of connectedness to classmates through a sense of community, (b) engagement in deep, meaningful dialogue with their classmates about course material and (c) connectedness with their instructor through the course platform and design.

Infusing the student motivation and personalization of learning factors into the CoI model will offer educational practitioners in various roles important information for planning, designing, and implementing effective instructional methods and implementation protocols within online learning. For the online course developer, details regarding course platforms and interactive interfaces might be used to inform potential theories in online course platform design. Department heads and curricular overseers at colleges and universities with online learning programs will benefit from additional research indicating how a population of learners describe their intrinsic motivators for learning so they may prepare degree plans and pathways to explicitly address such items within their online learning programs. The online course instructor would benefit from additional information about online learners' intrinsic motivators that may inform his or her instructional approaches in the virtual learning environment, specifically with respect to philosophical approaches to instructional implementation.

**Empirical Implications**

The majority of the available online learning literature is focused on building a sense of community and connectedness within online learning environments. Several research studies referenced the need to increase community and connectedness to reduce attrition in online

programs. Lacking from the available research was a current, qualitative examination of online postsecondary undergraduate students' experiences with cooperative activities in the online learning environment. Also missing from the literature was any study to examine approaches for increasing positive interdependence, individual accountability, equal participation, and simultaneous interaction within postsecondary undergraduate online education courses. This present study provided data to fill both these gaps in the existing body of literature pertaining to online learning programs.

Findings in this study have significant implications for stakeholders of higher education. Specifically, stakeholders could use data presented for creating and preparing new, innovative instructional methods within the virtual education setting to meet the individual learning needs of the growing, diverse online student population. Specifically, insights gained from the participants in the online focus group discussion suggest that online undergraduate education students would benefit from increased opportunities to engage in structured, meaningful discussions about course content through time-bound virtual communications that foster simultaneous interaction and positive interdependence. Such information has direct implications on the way online course activities might be structured within the virtual learning platform itself to best meet the individual needs of the learner while highlighting critical course content.

Additionally, the findings have implications for the way stakeholders in higher education might consider providing additional support to online instructors to respond to students' requests for clarification and information in more timely ways. For example, innovations could be made to address concerns shared by Maggie and Roy in the focus group interview regarding response times to student inquiries about assignments and course tasks. Maggie shared, "I like to ask questions and get an immediate response," while Roy added, "The turnaround time for a

response from the professor is challenging." These insights could inform innovations in options for real-time chat functions with educational support staff trained to respond to general inquiries about course assignments and tasks that may not require the expertise of the instructor of the course. Furthermore, possible innovations utilizing web-conferencing tools during specific time slots could provide options to reduce the possibility of multiple email exchanges to answer a specific question. The potential improvements in methods to respond to students' needs or requests are difficult to quantify with the continual advancements in electronic communications available to online educators. It is clear, though, that data from this research study will provide pathways for adjustments to be made in the design, structure, and overall implementation of online learning programs and courses.

Findings from the study also have implications for department heads and curricular overseers at colleges and universities with online learning programs. Data from this study provide insights into possible methods for increasing student satisfaction with online learning programs, specifically with respect to online teacher education courses. Although the population was small, the participants were diverse in their demographic composition and offered a unique representation of the population of online teacher education students today. The information gained from the individual interviews and the focus group session collectively composed a depiction of what is most desired in online learning courses. Department heads and curricular overseers at colleges and universities could review their online curricular programs, courses, and implementation methods through the lens of the desired and undesired aspects as referenced by participants to determine areas within their programming that may be worth building upon, improving, or overhauling completely.

**Practical Implications**

This study provides practical implications for future and current online education students as well as those involved in planning online education course design and implementation of online learning methods. Insights gained from the document analysis, individual interviews, and the focus group session might enable those serving in online program planning to make explicit adjustments to course structures and implementation methods to best meet the needs of the students served in such educational settings. Expressly, these data suggest online educational practitioners should focus on embedding structured cooperative activities within the typical activities and tasks of online courses that foster positive interdependence, individual accountability, equal participation, and simultaneous interaction (Kagan, 1994).

When developing the cooperative activities within the online learning environment, it is important to ensure the activities are intentionally structured to incorporate aspects of effective groupings to foster enriched dialogue fostered (Du et al., 2015; Jolliffe, 2007; Jong et al., 2012). During the personal interview, Kaitlyn shared her thoughts about how she would have benefitted from more opportunities to communicate with her classmates about the lesson plan phases and processes; she highlighted how she thought communicating directly with three or four of her peers about specific topics would have enabled her to discuss information on a deeper level as opposed to sifting through the posts of all her classmates and responding to relative posts. Kaitlyn's sentiments were shared by other participants when this was discussed openly by participants during the focus group session and is supported by the existing research focused on intentional student grouping (Du et al., 2015; Jolliffe, 2007; Jong et al., 2012; Kagan, 1994; Vygotsky, 1978).

Examples of structured online cooperative activities intended to increase positive interdependence, individual accountability, equal participation, and simultaneous interaction include online discussions focused on topics and themes that intentionally promote meaningful discourse among a set number of learners that require the application of synthesis and analysis skills (Kagan, 1994; Ku et al., 2013; Shadiev et al., 2015). By creating small learning groups within the online class, students can interact with one another about topics on a much deeper and more meaningful level since their attention is focused on delving deep into the material with three or four classmates rather than spending time sorting through all peers' posts (Akcaoglu & Lee, 2016). Through such social learning experiences, students will develop a richer understanding of the content being examined as they engage in focused interactions within small groups (Kagan, 1994; Vygotsky, 1978).

Undergraduate education students will also benefit from the information presented in this study as it provides practical data pertaining to future educators' experiences in online education courses. The aspiring educators must be prepared to deliver instruction effectively within online learning environments to address the increasing demand for personalized learning options and educational platforms within schools across the globe at all grade and program levels. Understanding undergraduate education students' experiences with online cooperative learning activities gives future educators a unique perspective on the importance of preparing well-designed lessons and instructional activities that promote high engagement among learners within virtual environments. Furthermore, future educators receiving their teacher education training in online learning environments need exposure to effective, engaging online learning instructional activities and overall course platforms and delivery methods. This exposure will

increase the probability that these future educators will be equipped to utilize effective methods in their future positions.

From a planning, designing, and integrating perspective, this study has many practical implications. Specifically, any individuals that are involved in the design of online course activities, schedules, and platforms can benefit from the information presented. From kindergarten through graduate school programs, online learning is incorporated at some level. Hence, effective instructional planning and delivery methods should be a focus regardless of the age, grade level, or program focus. From the classroom teacher to the online college course designer, every individual involved in the field of education may benefit from the data available from the present research.

## Delimitations and Limitations

Delimitations of this research study included the setting, the selection of participants, and the phenomenon examined. A large, regionally accredited university offering fully online education courses in which online course platforms allow for synchronous and asynchronous cooperative learning activities was selected as the setting for the study. Participants must have been enrolled in the specific course section selected as the setting for the case study as these individuals were the only persons who experienced the phenomenon within the context of the described case. The phenomenon was defined as online cooperative learning activities.

The length of time for the study and the setting might have been a limitation as student perceptions of the level of engagement and learning with respect to social, cognitive, and teaching presence was bound only to an 8-week compressed online course. The amount of work to be completed during the time frame might have negatively impacted the students' perceptions of the learning experiences. Additionally, the participant pool could have been perceived as a

limitation since the participants were selected from one of five sections of a given online education course conducted between the Spring and Summer terms of 2018. However, the sample size was in line with the suggestions for case study sample size as discussed by Creswell (2017), and the setting having been confined to one of five sections of a specific online education course allowed for the reduction of potential extraneous variables to impact the experiences of the participants.

## Recommendations for Future Research

Creating connected, engaging, and effective online learning environments continues to be a problem in the field of education. Various researchers have identified specific concerns with creating feelings of connectedness among learners in online education programs, and special attention has been given to creating community within virtual learning settings at the postsecondary level (Akcaoglu & Lee, 2016; Beckman & Weber, 2016; Breivik, 2016; Christensen, Horn, Caldera, et al., 2011). The aim of the present study was to understand undergraduate education students' experiences with cooperative learning activities in online educational environments. Rich, qualitative data were collected pertaining to participants' experiences with the cooperative activities in the online learning setting through the lens of social, cognitive, and teaching presence. Additional study is warranted to determine the most appropriate ways to foster high levels of social, cognitive, and teaching presence within fully online postsecondary education courses as well as all levels of education. Furthermore, there should be continued research surrounding effective implementation of each aspect of cooperative learning within the online education environment.

Deliberate focus must be given to researching effective methods to engage postsecondary education students in structured online activities that require positive interdependence, individual

accountability, equal participation, and simultaneous interaction (Kagan, 1994; Ku et al., 2013; Xu et al., 2015). Special attention should be placed on highlighting specific learning experiences intended to increase the level of meaningful interactions between members of small cooperative groups within the online learning setting. Such research will provide additional insights into the impact of intentional student grouping on the learning outcomes of online students, particularly the students' perceptions of their experiences with the cooperative activities.

A qualitative study with 10 to 15 participants that completed a fully online course utilizing interactive web-conferencing tools to support online Socratic discussions would be beneficial. The online course structure should include discussion activities designed to include intentional student grouping protocols (Du et al., 2015). The discussion activities should be designed to address critical course content through open-ended, thought-provoking topics and themes. Socratic discussion questions and rubrics for evaluations of the discussions should be analyzed to confirm tenets of cooperative learning are evident within the structure of the discussion questions and format (Kagan, 1994). Individual and focus group interview questions should specifically address how participants experiences positive interdependence, individual accountability, equal participation, and simultaneous interactions throughout the online Socratic discussions (Kagan, 1994).

A qualitative study to examine how students' perceptions of cognitive presence are affected as increased levels of cooperative learning activities are experienced within the online setting would offer unique insights about student engagement with course material in the online learning environment. A suggestion for implementing such a research design would be to conduct a case study with 10 to 15 participants enrolled in a set group of online courses during a specific time period, possibly a cohort of students taking online courses in the same sequence.

The students could be exposed to increased numbers of cooperative activities in the online setting over time, and data could be gathered regarding the participants' perceptions of the level of cognitive presence within the learning environment. It would be important to note the possible impact of social presence that may exist among groups of students that have been in classes together in the past.

Further research into the impact of increased levels of cooperative activities within online courses could provide unique insights into online undergraduate education programs that follow cohort models. Many graduate education programs follow cohort models to increase community among learners and create a clear learning path for students to follow as they complete degree requirements. The cohort model has been implemented in both traditional brick-and-mortar educational settings as well as online settings at the undergraduate and graduate levels. It would be beneficial to conduct a qualitative study with participants enrolled in an online cohort model in which the classes incorporated increased levels of cooperative activities over time to gather data on the experiences of the participants and their perceptions of cognitive presence in relation to the increased cooperative activities. Findings from such a study could be compared to findings from a study with participants that did not participate in a cohort model.

Bettinger et al. (2016) referenced the significance of peer interactions within online learning courses, and Akcaoglu and Lee (2016) specifically focused on the methods for increasing social presence in online learning through small group discussions. Additional investigation into effective techniques for creating intentionally structured online small-group discussions and interactions via cooperative learning instructional methods would provide the design for best practices within online learning programs in all content areas.

Advancements in interactive tools within the online learning setting, the manner in which the tools are used, aspects of the specific forums and platforms implemented, and text-based and audio-visual discussions should be examined within the online instructional environment. A qualitative study to investigate students' experiences with online text-based interactive discussion forums in comparison to their experiences with audio-visual discussion-based forums would provide needed insights into how varying methods of communication may impact overall learning outcomes. A quantitative research design may also be beneficial to conduct inventories and surveys of a large number of students to assess their experiences with cooperative activities within online settings as a method to gain an overall trend of students' experiences in such learning activities.

With so many online learning platforms and structures available, there are many variables that may affect overall experiences of online postsecondary undergraduate education students engaging with cooperative activities. The present study was designed to reduce the potential variables by focusing the participant sample to five sections of a specific online teacher education course at the University of Learning offered between the Spring and Summer terms of 2018. These participants all experienced the same curriculum, delivered via the same online education platform. Instructors may have varied, but the course design, syllabus, structure, and class assignments were identical. It would be beneficial to conduct a similar study with a group of students from another course to determine if responses from participants align with those from the present study. For example, conducting an embedded single-case qualitative research study to describe online undergraduate education students' experiences in cooperative activities within a course focused on classroom management or instructional methods could provide unique data regarding the impact of cooperative activities on instructional planning and preparation.

One theme that was discovered during this study was the impact of personalization of learning on the perceptions of learning experiences with cooperative activities in the online educational environment. Specifically, personal perceptions of convenience, self-discipline and motivation, and individual learning modes and preferences were revealed as factors possibly contributing to perceptions of connectedness and engagement with the course material and tasks. Because this aspect was not explicitly examined within Garrison et al.'s (1999) CoI model, more research needs to be conducted to explore these inherent, individual factors and their impact on perceptions of learning and engagement in the online environment from a qualitative perspective. Understanding how these affective factors may impact overall perceptions of cooperative activities within the online learning environment would provide important data to inform course design and structures for future online education course planning and development. A qualitative study to investigate how personal perceptions of convenience, internal motivation, and individual learning modes and preferences contribute to feelings of connectedness within the online community could offer unique insights into motivation factors and their impact on social and cognitive presence in the online setting. Interview questions could be focused specifically on personal learning preferences and participants' learning experiences through the lens of the CoI model (Garrison et al., 1999).

Participant responses in this study strongly indicated that additional research is needed to examine effective methods for infusing cooperative discussions within online courses to foster meaningful dialogue about course content. A qualitative study to examine online student perceptions of specific instructional methods used to incorporate positive interdependence, individual accountability, equal participation, and simultaneous interaction within fully online courses will provide insights into effective online instructional methods. Such research is of

special significance to online teacher education program developers as the results would inform course designers and instructors in ways to embed effective online instructional methods within teacher education students' online learning experiences.

## Summary

Educational research suggests students learn best when they are actively engaged in learning experiences (Christensen, Horn, & Johnson, 2011; Hattie, 2009; Kagan, 1994; Kyndt et al., 2013). In the traditional brick-and-mortar learning environment, students may be observed talking about information they have been presented, or they may be creating artifacts or deliverables pertaining to the material being investigated (Hawkins, 2015). Engagement in the online learning environment, however, requires additional focus on the manner by which virtual learning activities are structured, content material is delivered, and course tasks are implemented. To create high levels of student engagement in the online learning environment, social, cognitive, and teaching presence must be a focus (Garrison et al., 1999; Oyarzun & Morrison, 2013). In this increasingly digital world, it is critical that online learning environments provide students the needed level of engagement to increase learner outcomes and provide the greatest educational opportunities for those who opt to participate in online learning programs (Dietz-Uhler & Lanter, 2012; Quaye & Harper, 2015).

The purpose of this study was to understand undergraduate education students' experiences in online cooperative learning environments. The central question that guided the research was as follows: How do undergraduate education students describe their experiences with cooperative learning activities within an online teacher education course in terms of social, cognitive, and teaching presence? The intent of the question was to communicate directly with online undergraduate postsecondary education students enrolled in a specific, fully online teacher

education course to determine how these individuals experienced cooperative activities within the course structure. The central question also served as a platform for study participants to provide individual feedback regarding their perceptions of the course design, structure, communication tools, and overall instructional delivery methods.

The participants included 10 undergraduate education students enrolled in one of five sections of a specific fully online education course at the University of Learning between the Spring and Summer terms of 2018. The process for theme development began with pattern-matching the collected data to the CoI model (Garrison et al., 1999). Further analysis of the transcriptions from the interviews revealed four overarching themes: (a) connectedness with classmates, (b) connectedness with instructor, (c) engagement with course material, and (d) personalization of learning. Information from the three data sources (i.e., individual interviews, document collection, and focus group) was used to answer the research questions regarding how postsecondary education students describe their experiences with online cooperative learning activities.

The findings from this study align with previous online education research focused on student perceptions of connectedness in online environments. Additionally, previous research and this present study confirm that student perceptions of experiences with cooperative activities within online learning environments are affected by many factors. Some of the factors that impact student perceptions of cooperative activities in online learning environments are controlled, in part, by the course design, structure, online course tools, and methods of instructional delivery. Other factors, however, are outside the control of the course instructor or learning environment and may be innate to the individual learner, such as intrinsic motivation and personal learning style preferences.

Fostering online learning environments with high levels of social, cognitive, and teaching presence is essential to creating rich, engaging online learning experiences so participants are immersed in an educational setting where feelings of connectedness to peers and the instructor are cultivated and engagement with the course material and content is evident through meaningful instructional activities. Integrating cooperative activities within online learning environments has been reported through prior research and corroborated by this study to positively impact social, cognitive, and teaching presence within online educational settings and positive student learning outcomes. Prior research studies have shown low levels of social, cognitive, and teaching presence within online learning environments are generally associated with online students feeling disconnected from their classmates and instructor, often resulting in lower levels of personal engagement with the course material and generally lower student learning outcomes.

Findings of this study provide data to drive best practices in instructional program planning, development, and implementation within the online learning environment. Individuals participating in online education courses need to feel a strong sense of connectedness with their classmates and their instructor, and they need to participate in structured learning activities that foster meaningful dialogue to create engagement with the course material. This study solidified that this is especially true of online undergraduate education students.

Online teacher education courses should incorporate tools and platforms that support cooperation and discourse among learners in a natural and nonthreatening manner to increase the potential for effective, continuous communication within the learning environment. Online students need to be engaged in instructional activities that foster positive interdependence,

individual accountability, equal participation, and simultaneous interaction with their peers about course content.

Infusing targeted cooperative activities in online teacher education courses will promote high levels of social, cognitive, and teaching presence within the virtual learning community. Online learning environments with high levels of social, cognitive, and teaching presence will result in positive experiences and increased learning outcomes among the teacher education students and provide students with exposure and training that will impact their future teaching practices in the traditional brick-and-mortar or online educational settings.

The findings from this research are applicable to instructional program planning and development at all age and grade levels. Online activities, whether incorporated in a brick-and-mortar, traditional learning setting or as part of a fully online learning program, should be structured to engage the learners in experiences that promote positive learning outcomes for all participants. As the study data indicate, when students are engaged in learning environments where high levels of social, cognitive, and teaching presence are evident, positive learning outcomes are observed. Infusing intentionally designed cooperative activities within such educational settings will increase opportunities for students to experience connectedness with their peers and instructor and provide the structure for meaningful engagement with course content to persist in online learning settings.

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## APPENDIX A: STAMPED CONSENT FORM



# CONSENT FORM

UNDERGRADUATE EDUCATION STUDENTS' EXPERIENCES IN ONLINE COOPERATIVE LEARNING ACTIVITIES: AN EMBEDDED SINGLE-CASE STUDY

Jennifer Lynette Ervin
Liberty University
School of Education

You are invited to be in a research study of undergraduate education students' perceptions of online cooperative learning activities. You were selected as a possible participant because you are currently enrolled in an online education course that employs cooperative learning activities. Please read this form and ask any questions you may have before agreeing to be in the study.

Jennifer Ervin, a doctoral candidate in the School of Education at Liberty University, is conducting this study.

**Background Information:** The purpose of this study is to understand postsecondary education students' experiences in online cooperative learning environments with respect to social, cognitive, and teaching presence.

**Procedures:** If you agree to be in this study, I would ask you to do the following things:

1. Complete a brief online participant interest survey lasting approximately 5 minutes.
2. Participate in at least one individual, semi-structured, face-to-face interview conducted in person or via web-conferencing methods that will be recorded via audio or audio/visual tools for the purpose of transcribing data gained from the interview. The interview will be comprised of 18 open-ended questions and will take approximately 45-60 minutes to complete.
3. Participate in the member checking process lasting approximately 30-45 minutes to review the transcript of your interview for accuracy.
4. Consider participation in an online focus group at the completion of the course. The online focus group will be conducted via a synchronous, web conferencing tool. The conference will span approximately 60 to 90 minutes. The focus group discussion will be recorded via audio and visual digital recording methods to create accurate transcripts of the discussion for data analysis. The discussion will follow a semi-structured format in which a set group of questions will be asked, but questions may change or emerge as a result of the responses from the participants. Participants of the focus group will also participate in the member checking process lasting approximately 30-45 minutes to review the transcript of the focus group for accuracy.

**Risks and Benefits of Participation:** The risks involved in this study are minimal, which means they are equal to the risks you would encounter in everyday life.

Participants should not expect to receive a direct benefit from taking part in this study.

**Compensation:** Participants will not be compensated for participating in this study.

**Confidentiality:** The records of this study will be kept private. In any sort of report I might publish, I will not include any information that will make it possible to identify a subject. Research records will be stored securely, and only the researcher and the faculty chair will have access to the records. I may share the data I collect from you for use in future research studies or with other researchers; if I share the data that I collect about you, I will remove any information that could identify you, if applicable, before I share the data.

- I will conduct the interviews in a location where others will not easily overhear the conversation.
- Pseudonyms and composite profiles will be used to protect personal identities.
- All data will be protected by storing collected information in locked cabinets and password-protected digital files as appropriate based on the data type. Note: Per federal regulations, data must be retained for three years upon completion of the study.
- Only I will have access to the recorded/stored data files; data will be erased and properly destroyed 10 years after the study is completed.
- Because focus groups are a part of the data collection process, I cannot assure that other members of the group will not share what was discussed with persons outside of the focus group. However, requests to maintain confidentiality from all participants of the focus group will be made.

**Voluntary Nature of the Study:** Participation in this study is voluntary. Your decision whether or not to participate will not affect your current or future relations with Liberty University. If you decide to participate, you are free to not answer any question or withdraw at any time without affecting those relationships.

**How to Withdraw from the Study:** If you choose to withdraw from the study, please contact the researcher at the email address/phone number included in the next paragraph. Should you choose to withdraw, data collected from you, **apart from focus group data**, will be destroyed immediately and will not be included in this study. **Focus group data will not be destroyed, but your contributions to the focus group will not be included in the study if you choose to withdraw.**

**Contacts and Questions:** The researcher conducting this study is Jennifer Ervin. You may ask any questions you have now. If you have questions later, **you are encouraged** to contact her at [redacted] or via email at [redacted] You may also contact the researcher's faculty advisor, [redacted], at [redacted]

If you have any questions or concerns regarding this study and would like to talk to someone other than the researcher, **you are encouraged** to contact the Institutional Review Board, 1971 [redacted] or email [redacted]

***Please notify the researcher if you would like a copy of this information for your records.***

**Statement of Consent:** I have read and understood the above information. I have asked questions and have received answers. I consent to participate in the study.

(NOTE: DO NOT AGREE TO PARTICIPATE UNLESS IRB APPROVAL INFORMATION WITH CURRENT DATES HAS BEEN ADDED TO THIS DOCUMENT.)

☐ The researcher has my permission to audio-record me as part of my participation in this study.

☐ The researcher has my permission to video-record me as part of my participation in this study.

_____

Signature of Participant Date

_____

Signature of Investigator Date

## APPENDIX B: RECRUITMENT LETTER/COMMUNICATION

June 2018

[Recipient]
[Address 1]
[Address 2]

Dear [Recipient]:

As a graduate student in the School of Education at Liberty University, I am conducting research as part of the requirements for a doctoral degree. The purpose of my research is to understand postsecondary education students' experiences in online cooperative learning environments with respect to social, cognitive, and teaching presence, and I am writing to invite you to participate in my study.

If you are 18 years of age or older and are willing to participate, you will be asked to complete a brief interest survey and participate in at least one individual, semi-structured, face-to-face interview conducted in person or via web-conferencing methods that will be recorded via audio or audio/visual tools for the purpose of transcribing the data gained from the interview. The interview will be comprised of 18 open-ended questions and will take approximately 45-60 minutes to complete.

After the interviews are completed, some participants will also be asked to take part in a focus group. The online focus group will be conducted via a synchronous, web conferencing tool. The conference will span approximately 60 to 90 minutes. The focus group discussion will be recorded via audio and visual digital recording methods to create accurate transcripts of the discussion for data analysis. The discussion will follow a semi-structured format in which a set group of questions will be asked, but questions may change or emerge as a result of the responses from the participants.

Your name and other identifying information will be requested as part of your participation, but the information will remain confidential.

A consent document is provided here. The consent document contains additional information about my research; your digital signature will serve as your consent and interest to participate. After completing the consent document, please complete the brief Participant Interest Survey. Please feel free to contact me via email at [redacted] if you have any questions about the information in this communication; I look forward to the opportunity to work with you.

Sincerely,

Jennifer L. Ervin
Doctoral Candidate,
[redacted]

**APPENDIX C: LIBERTY UNIVERSITY IRB APPROVAL LETTER**

LIBERTY UNIVERSITY.
INSTITUTIONAL REVIEW BOARD

May 9, 2018

Jennifer Ervin
IRB Approval 2997.050918: Postsecondary Education Students' Experiences in Online Cooperative Learning Activities: An Embedded Single-Case Study

Dear Jennifer Ervin,

We are pleased to inform you that your study has been approved by the Liberty University IRB. This approval is extended to you for one year from the date provided above with your protocol number. If data collection proceeds past one year, or if you make changes in the methodology as it pertains to human subjects, you must submit an appropriate update form to the IRB. The forms for these cases were attached to your approval email.

Thank you for your cooperation with the IRB, and we wish you well with your research project.

Sincerely,

[redacted]

**The Graduate School**

LIBERTY UNIVERSITY.
*Liberty University | Training Champions for Christ since 1971*