E-MENTORING NOVICE SCIENCE TEACHERS THROUGH UNIVERSITY-SPONSORED ONLINE INDUCTION: A SELF-STUDY

By

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A DISSERTATION PRESENTED TO THE GRADUATE SCHOOL OF THE UNIVERSITY OF FLORIDA IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF DOCTOR OF PHILOSOPHY

UNIVERSITY OF FLORIDA

2017
I dedicate this dissertation to my father, Dr. Donald W. Legler, who was a loving father, role model, scholar, and servant of God.
ACKNOWLEDGMENTS

Foremost, I would like to thank my wife, Kelly, for her love and encouragement. I would like to thank my mother, Janice Legler, for her support. I would like to express my deepest gratitude to my mentor and advisor, Dr. Alyson Adams, for her guidance and motivation. I would like to thank my doctoral committee members, Dr. Thomas Dana, Dr. Buffy Bondy, and Dr. James McLeskey, for their advice and encouragement. Finally, I would like to thank the School of Teaching and Learning for providing me with graduate assistantship opportunities during my doctoral program.
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High attrition rates of beginning teachers are a major challenge for schools. Online induction featuring e-mentoring is one way that teacher education programs can support new teachers. This self-study examines the processes involved in e-mentoring novice science teachers while using a university-sponsored comprehensive online induction platform. During this self-study, I e-mentored four teachers for four months. The mentees were recent graduates of a STEM teacher education program at a large research-intensive university, currently employed in either their first or second year of teaching. I worked with the mentees to mutually decide on two teaching practices that each would like to focus on while being e-mentored.

A variety of technology tools housed on the platform were used to facilitate e-mentoring. The self-study of teaching and teacher education practices (S-STTEP) methodology was used to study my own e-mentoring facilitation. Data were collected from interviews, online textual data, and my own personal reflective journals.

The findings are described in terms of the challenges I experienced and how I overcame, or learned from those challenges. I found that the voluntary nature of the support that I was providing competed with the many demands of beginning teachers.
To manage my way around this challenge, I used reflection and dialogue with a critical friend to determine how to best support my mentees. I also found that it was difficult to build rapport with my mentees online. However, I discovered that e-mentoring allows for more opportunities for one-on-one support than traditional mentoring. I learned that initial face-to-face visits with mentees can help in building rapport, and careful planning must go into and establishing an engaging online induction community. Lastly, the short online induction period was found to be ineffective. Therefore, the timing of e-mentoring may need to be lengthened so that mentees can adjust to both the classroom and the online induction platform. Online induction requires ongoing support, planning for upcoming video conferences, and time for mentees to become acquainted with the technology used for online induction. This self-study is significant because it contributes to the limited self-study literature related to e-mentoring and technology tools used for online induction.
CHAPTER 1
INTRODUCTION

In the summer of 2005, I made the decision to change careers and become a high school teacher. In my former job, I enjoyed working with a great group of people, but I always wanted to pursue a career in education. I was optimistic about this new endeavor and believed that I could make a difference in the lives of young people. One day, I began my teaching job search by emailing a cover letter and resume to every high school in Jacksonville, Florida. On that same day, the assistant principal from a high school in one of the city’s notorious crime areas called me in for an interview. The principal hired me on the spot because she was in dire need of teachers and the school was starting in one week. I was conditionally hired based on whether I could pass a State of Florida Certification Subject Area Examination. Upon passing that test, I would be granted a temporary teaching certificate for two years. I was ecstatic about this opportunity and confident that I could handle this challenging teaching assignment. After the first month, my optimism waned. I had experienced a physical and emotional roller coaster ride. October 4, 2005 could have easily been my last day as a teacher. On this day, three students in my third period “Earth-Space Science” class turned the lights off and threw text books at me. Was I that bad of a teacher? That evening, to my shock and dismay, a local television station covered the incident on the six o’clock news. I breathed a sigh of relief when they did not mention my name in the news story.

Fortunately, I did not let the actions of a few students get the best of me. I endured the remainder of that school year by trying to improve as best I could. I came to the realization that I needed to overhaul my teaching practices. On a daily basis, I sought advice from my co-workers. What I really desired was a mentor who could
provide emotional and instructional support. The mentor that was assigned to me from the district only met with me to review my progress for certification; she did not provide me with the support that I needed. I went on to teach at that school for another eight years. During those eight years, I learned as much as I could about teaching by collaborating with others at my school and engaging in professional development. The lack of support bothered me. Why should new teachers have to struggle for so long to be effective in the classroom? Furthermore, I noticed how many beginning teachers failed to return at the start of each school year. It made me wonder how we could support new teachers on site through strong mentoring in order to strengthen their teaching skills and help them remain in the profession.

Problem Statement

My story illustrates how challenging teaching can be for new teachers. They often struggle in the first few years and need help. Mentoring can provide new teachers with the support that they need. In K-12 education, mentoring involves guidance provided from a veteran teacher to a novice teacher (Smith & Ingersoll, 2004). Mentoring plays a key role in the development of improvement-oriented teachers (Hargreaves & Fullan, 2000).

Globally, mentoring is found to be a central component of effective teacher induction programs (TIPs) (Howe, 2006). TIPs are school district programs that are designed to support, train, and retain new teachers (Wong, 2005). In the U.S., the types and levels of mentoring support provided in TIPs vary considerably among programs. In some school districts, new teachers collaborate regularly with a school-based mentor for a two-year period. The mentoring provided to these beginning teachers far exceeds the mentoring supports that I received when I started teaching. My past experiences
with mentoring during my TIP is not uncommon. In 2003-2004, 29.1% of new teachers did not work with a mentor teacher during their TIP (Darling-Hammond, Wei, Andree, Richardson, & Orphanos, 2009). Consequently, some beginning teachers leave the profession because they do not receive the support they need. When new teachers have a mentor in their own subject area, the risk of those teachers resigning at the end of the school year is reduced by 30%. Even a mentor outside of their subject area reduces the risk of attrition by 18% (Smith & Ingersoll, 2004). A formidable challenge for school districts, teacher attrition has many negative consequences for schools including a breakdown in school organization, culture, and climate (Smith & Ingersoll, 2004).

Fortunately, there are new trends in mentoring that provide new teachers with the support that they need to be successful in the classroom and curb teacher attrition. Recent developments in computer-mediated communication (CMC) have led to new types of online induction programs. These programs include any type of teacher induction support that involves the use of technology. Online induction utilizes CMC tools to facilitate mentoring, collaboration, and reflection. The mentoring component of online induction is often referred to as e-mentoring. Smith and Israel (2010) define e-mentoring as “the use of computer-mediated communications such as e-mail, discussion boards, chat rooms, blogs, web conferencing, and growing internet-based solutions that are changing the way mentors and mentees interact” (p. 30).

E-mentoring has been used to support novice teachers who may not have adequate school-based mentoring. Some recent studies have found that there is a perceived need for e-mentoring to support recent graduates. In rural school settings, there is a perceived need and desire among new rural teachers for e-mentoring due to
face-to-face mentoring challenges associated with distance (Kelly, Reushle, Chakrabarty, & Kinnane, 2014). In addition, there is a need for e-mentoring of novice teachers who teach within the same discipline (Bang & Luft, 2014; Hunt, Powell, Little, & Mike, 2013). For example, in some secondary school settings, mentees may not have opportunities to work with mentors who share similar subject area expertise. E-mentoring can provide novices with a peer in the same discipline even if that person does not teach at the same school.

Current literature on online induction e-mentoring is characterized by studies that focus primarily on the outcomes of the use of one tool that is used for online induction (Bang & Luft, 2014; Dalgarno & Colgan, 2007; Donne & Lin, 2013; Hunt et al., 2013; Hwang & Vrongistinos, 2012; Killeavy & Moloney, 2010; Maxwell, Harrington, & Smith, 2010; McFadden, Ellis, Anwar, & Roehrig, 2014; Taranto, 2011). Now that online induction is trending toward the use of multiple tools, these studies are on the way to becoming obsolete. There is limited research on the process of e-mentoring in comprehensive online induction platforms. Research is needed in this area so that e-mentors understand the instructional issues and knowledge of ways to address those issues. It is important for e-mentors to know effective methods for supporting beginning teachers with multiple tools at their disposal. Comprehensive online induction platforms allow for both synchronous and asynchronous communication. E-mentors who use multiple CMC tools may be able to build stronger relationships with mentees. The increased flexibility and communication could increase the support that novice teachers are receiving, and thus improve the retention rates of those teachers.
Purpose Statement

In order to study the processes of e-mentoring in a comprehensive online induction platform, I studied my own practices as an e-mentor. Thus, the primary purpose of this study was to examine my own development as a university-sponsored online induction e-mentor using a comprehensive platform. The e-mentoring that I did was situated within a College of Education and not within a school district. By studying the process of e-mentoring, I gained a more thorough understanding of the challenges involved in e-mentoring novice teachers. In addition, I learned some strategies to address those challenges. This research also helped me better understand the induction of novice teachers through e-mentoring on a university-sponsored online induction platform.

Research Questions

1. How has e-mentoring on a university-sponsored online induction platform informed my understanding of the induction of novice teachers?

2. How has e-mentoring novice teachers on a university-sponsored online induction platform informed my practice as a teacher educator?

Research Design

To study my teaching practices while e-mentoring on a university-sponsored online induction platform, I conducted a self-study. A self-study is defined as the “critical examination of one’s actions and the context of those actions in order to achieve a more conscious mode of professional activity” (Samaras, 2002, p. xiii). This approach is primarily used by teacher educators to investigate problems related to their own practice. I chose to engage in self-study because it enabled me to investigate specific questions of practice to improve my teaching (Samaras & Freese, 2006). Throughout the self-study, I employed a methodology called self-study of teaching and teacher
education practices (S-STTEP). S-STTEP is a systematic approach for teachers who want to research their own teaching and teacher education practices (Pinnegar & Hamilton, 2009).

During this self-study, I e-mentored three novice science teachers while using the Florida STEM TIPS university-sponsored online induction platform for a period of four months. Florida STEM TIPS, a University of Florida-sponsored initiative, is designed to support university and school district teacher induction programs with the goal of retaining new STEM teachers. The teachers that I recruited were recent graduates of the UFTeach program at the University of Florida. UFTeach is an approved minor in secondary education for mathematics and science majors.

During the course of the study, all mentoring activities and communication occurred on the Florida STEM TIPS online induction platform. I used a variety of technology tools housed on the platform to facilitate mentoring. These tools allowed for the use of video conferencing, asynchronous communication, and video analysis of teaching.

The online induction mentoring support that I provided to my mentees supplemented the district or school-based mentoring support that they were already receiving within their respective school districts and/or schools. In this capacity, I played a non-evaluative role. I worked with my mentees to mutually decide on two teaching practices that each wanted to focus on while being e-mentored. These teaching practices were based on the mentees’ district instructional framework that is used for teacher evaluation. To maintain structure during the study, I developed an action plan for each mentee that included designated dates for interviews and meetings. Three
interviews were conducted during the study to understand the mentees’ experiences during their participation in online induction. Textual data from asynchronous online communication and transcriptions from synchronous online communication provided further data for analysis. Throughout the study, I maintained field notes and a journal detailing my own experiences and reflections during the e-mentoring process.

**Significance of the Study**

High attrition rates of novice teachers are a major challenge for school districts. University-sponsored online induction featuring e-mentoring is one way that teacher education programs can support new teachers. Navigating the role of e-mentor can be uncharted waters for teacher educators who take on this role. This self-study is significant because I gained a better understanding of this role through my direct involvement, providing a rich illustration of the structures and processes of online mentoring, which is currently missing in the literature.

My e-mentoring experiences contributed to my personal and professional development as a teacher educator. The findings will also help university-sponsored online induction e-mentors learn effective methods for supporting new graduates and school district teacher induction programs. The findings are particularly useful for teacher education programs that plan to, or are currently partnering with school districts to provide teacher induction support. Additionally, this research contributes to the limited self-study literature related to e-mentoring and CMC tools used for teacher induction.

**Definition of Terms**

The following terms include definitions that are specifically used for this study:

**Mentoring.** Guidance provided from a veteran teacher to a novice teacher (Smith & Ingersoll, 2004).
**Computer-mediated communication (CMC).** Synchronous or asynchronous online communication tools.

**E-mentoring.** “The use of computer-mediated communications such as e-mail, discussion boards, chat rooms, blogs, web conferencing, and growing internet-based solutions that are changing the way mentors and mentees interact” (Smith & Israel, 2010, p. 30).

**Novice teacher.** A teacher with less than two years of experience.

**Online induction.** The use of CMC tools for teacher induction.

**Teacher induction programs (TIPs).** School district programs that are designed to support, train, and retain new teachers (Wong, 2005).

**Self-study.** A self-study is defined as the “critical examination of one’s actions and the context of those actions in order to achieve a more conscious mode of professional activity” (Samaras, 2002, p. xiii).

**Self-study of teaching and teacher education practices (S-STTEP).** A systematic approach for teachers who want to research their own teaching and teacher education practices (Pinnegar & Hamilton, 2009).

**Organization of the Remaining Chapters**

This dissertation contains five chapters, references, and appendices. Chapter 2 discusses the literature related to the growing need for teacher induction and the components of effective induction. Mentoring, a key component of teacher induction, is closely examined. Chapter 2 also focuses on the growing online induction and e-mentoring trend and the associated CMC tools used to support beginning teachers. The methodology is detailed in Chapter 3. This chapter provides a description of the theoretical framework, self-study research, and S-STTEP methodology that guided this
study. In addition, the context, participant selection, and data collection and analysis are discussed. The findings are detailed in Chapter 4. Finally, in Chapter 5, I discuss how the findings are connected to the literature, and the implications for e-mentors and teacher education programs.
CHAPTER 2
LITERATURE REVIEW

The purpose of this self-study inquiry was to examine my own development in my role as a university-sponsored online induction e-mentor using a comprehensive platform. Additionally, this study investigated how my online induction e-mentoring informed my understanding of the induction of novice teachers. To examine my own development and the processes involved in e-mentoring novice teachers, it was important to first understand the need for teacher induction programs (TIPs) and the role of mentoring in these programs. The literature related to TIPs, including the need for TIPs, the components of effective TIPs, and the importance of mentoring in TIPs will be discussed in the first part of this chapter. In the second part of this chapter, I examine online induction and e-mentoring, including current studies on e-mentoring support for beginning content area and special education teachers, online learning communities, and online reflection. These two parts of the literature review provide essential background for this study.

Teacher Induction Programs

TIPs have been defined in multiple ways in the literature. Boyer (2005) states that “an induction program acculturates a novice teacher to the profession and helps facilitate the transition from learning to teach to teaching effectively” (p. 44). Feiman-Nemser (2010), on the other hand, stated that teacher induction has multiple meanings based on how it is defined and discussed by practitioners, policy makers, and researchers. According to Feiman-Nemser (2010), the term “induction” can be used to describe a phase in learning to teach, a process of socialization, or a formal program for beginning teachers. Finally, Wong (2005) defined teacher induction as school district
programs that are designed to support, train, and retain new teachers. However teacher induction is defined, these programs are designed to support the professional development (PD) of beginning teachers. TIPs discussed in this self-study are closely aligned with the Wong (2005) definition because they mostly refer to school district programs that support new teachers with the purpose of reducing attrition.

**The Need for TIPs**

High teacher attrition rates and subsequent negative effects on schools are serious challenges for schools and school districts. Teacher attrition can be attributed to lack of support, influence, and professional development opportunities (Ingersoll, 2001). In some countries, high teacher attrition rates have resulted in staffing issues and a loss of quality teaching (Organisation for Economic Co-operation and Development, 2005). Additionally, the collaborative cultures within schools can diminish if a high number of teachers exit the profession (Gujarti, 2012). In the United States, the attrition rates for new teachers within the first five years is 42% (Perda, 2013). In a study by the National Commission on Teaching and America’s Future, the costs associated with teacher turnover were studied in five school districts. The study found that the costs related to recruiting, hiring, and replacing teachers were astounding. In Chicago Public Schools, for example, these costs exceeded $86 million per year. This breaks down to approximately $17,872 for every teacher who left that school district (Barnes, Crowe, & Schaefer, 2007).

In a study that further examined teacher attrition, Smith and Ingersoll (2004) studied whether teachers who participated in various induction activities would return to their teaching roles the following year. The purpose of this study was to examine the relationship between teacher turnover and TIPs. Furthermore, they wanted to begin
addressing the need to evaluate the effects of teacher induction programs on turnover. The sample included all first-year teachers in the United States. Data were collected from the 1999-2000 Schools and Staffing Survey administered by the National Center for Educational Statistics.

Several key findings were reported in this study. Data indicated that between 1999 and 2000, eight out of 10 new teachers participated in a TIP. The results also showed that 15% of new teachers changed schools, and 14% left the profession. Turnover was found to be less likely for teachers who participated in a TIP. Furthermore, turnover was lower for teachers who had completed a TIP which included a combination of mentoring, common planning time, and participation in an external network of teachers for support. The findings from the Smith and Ingersoll (2004) study provide evidence for why TIPs, and particularly those that include mentoring, are critical for retaining new teachers.

TIPs also play an important role in ensuring that new teachers have the skills needed to be effective in the classroom. The composition of the teaching workforce is changing in the United States. Ingersoll (2012) identified a “greening” trend within the teaching workforce. In 1988, there were approximately 65,000 first-year teachers, but by 2008, this number increased to 200,000. Additionally, in 2008, 25% of teachers had less than five years of experience. This trend results in an overall lack of expertise that has ramifications for teaching and learning (Huling, Resta, & Yeargain, 2012).

The growth in alternatively certified teachers also lends support for TIPs. In the U.S., there are fewer teacher education candidates in colleges and universities than alternatively certified teachers (Baines, 2010). High-poverty schools employ most of
these alternatively certified teachers who may lack the necessary skills and experience to impact student achievement (Boyd, Goldhaber, & Wyckoff, 2007). Since alternative routes to the profession were approved after the implementation of No Child Left Behind legislation in 2002, teacher certification has not been found to be a reliable measure of teacher quality in the United States (Hanna & Gimbert, 2011). Therefore, TIPs serve as a safety net for ensuring that newly alternatively certified teachers are provided with the support necessary to become effective teachers.

**Components of Effective TIPs**

There is a wide variety of TIP models. Many programs in the U.S. and abroad vary in length of completion and the degree of support that is provided to beginning teachers. TIPs are generally categorized as either basic or comprehensive. Basic TIPs are limited in scope and typically provide informal mentoring and limited PD to orient new teachers (Gujarati, 2012). Informal mentoring in basic TIPs lacks consistency and mentors are often not properly trained. PD in basic TIPs is designed to orient beginning teachers on school and district policies and classroom management. Out of the 33 states that have induction policies, most follow a basic TIP model that only meets the immediate needs of beginning teachers (Gujarati, 2012).

Comprehensive TIPs, on the other hand, are designed to provide new teachers with ongoing and multiple types of support. These programs vary according to the combination, frequency of use, and duration of each component. Comprehensive TIPs typically include some combination of the following components: formal mentoring partnerships, reflective inquiry and teaching practices, observations, developmentally appropriate PD, formative teacher assessment, administrative support, supportive school culture, program evaluation, and a shared vision (Wood & Stanulis, 2009).
Similarly, Gujarti (2012) provided a comprehensive TIP model that includes: orientation program, formal mentoring partnerships, ongoing PD, an external network of teachers, support from administration, and standards-based evaluation. Gujarti (2012) also stated that a comprehensive induction program should continue for at least two years and be a requirement for new teachers. Although there are some distinct differences between the Wood and Stanulis (2009) and Gujarti (2012) models, both emphasize formal mentoring programs, PD, administrative support, and evaluation.

Effective TIPs share several characteristics. In a literature review of effective international TIPs, Howe (2006) found that all the induction programs studied provided a supportive climate that included opportunities for collaboration, reflection, and gradually transitioned new teachers into the profession. Additionally, Howe (2006) found that these TIPs allocate considerable time for teachers to collaborate with each other. Mentors in these programs had experience and received specialized training. The exemplary TIPs also provided beginning teachers with ongoing PD. Many of the effective international TIPs also reduced the course load for beginning teachers. Conversely, in the U.S., only 58% of beginning teachers collaborated regularly with their peers, and only 17% experienced reduced course loads (Ingersoll, 2012).

Effective TIPs also tend to be goal-oriented and quality-focused. Wood and Stanulis (2009) define quality-focused teacher induction as “the multi-faceted process of teacher development and novice teachers continued learning-to-teach through an organized PD program of educative mentor support and formative assessment” (p. 3). Goal setting within TIPs allows for teachers and administrators to align with the goals and aims of the school and school district. TIP goals typically focus on reducing attrition,
providing emotional support for new teachers, improving teacher knowledge and skills, improving student achievement, and satisfying induction and certification regulations (Wood & Stanulis, 2009). Through TIP goal setting, school district leaders and school administrators can incorporate the work of TIPs into the school improvement initiatives.

In summary, TIPs play a vital role in school districts to cultivate and retain the increasing numbers of new teachers. In order for TIPs to be effective, they should be comprehensive, including formal mentoring programs, PD, administrative support, and evaluation (Gujarti, 2012; Howe, 2006; Wood & Stanulis, 2009). The research suggests that it does not matter which particular components comprise a comprehensive TIP, as long as new teachers are provided with a formal mentoring program that is goal-oriented and quality-focused.

Mentoring: The Cornerstone of Successful TIPs

Across all the effective TIPs in the Howe (2006) literature review, mentoring was found to be a critical component. Smith and Ingersoll (2004) define mentoring as “the personal guidance provided, usually by seasoned veterans, to beginning teachers in schools” (p. 683). The terms mentoring and coaching are sometimes used interchangeably. However, coaching can be one of many potential roles of mentoring (Hobson, 2012). The role of a coach tends to be more focused and concerned with skill development through a process of modeling, observing, and providing feedback (Hopkins-Thompson, 2000).

Approximately 500 studies support the assertion that mentoring impacts student engagement, classroom management, and teacher retention (Blase, 2009). In addition to these benefits, Hargreaves and Fullan (2000) contends that in order to address the needs of twenty-first century schools, mentoring programs have the potential to build on
the work of teacher education programs with a focus on consistent standards of practice and can be used to develop improvement-oriented teachers.

In the U.S., many new teachers are participating in TIPs; however, some are not receiving mentoring. Participation in an induction program does not necessarily mean that new teachers receive intensive, high-quality mentoring (Wei, Darling-Hammond, Richardson, & Orphanos, 2009). Data from 2007-2008 indicated that only 80% of new teachers received ongoing mentoring support (Ingersoll, 2012).

Specific systems must be in place within TIP mentoring programs if they are going to result in successful outcomes. Darling-Hammond et al. (2009) stated that effective programs require frequent, ongoing, and structured mentoring for beginning teachers. In addition, effective TIP mentoring programs carefully select and train mentors to work with beginning teachers. Grossman and Davis (2012) also stressed the importance of ongoing support and training for mentors. Mentors are crucial for supporting mentees both emotionally and professionally.

In a literature review of studies that focused on effective TIP mentoring programs, Hobson, Malderez, and Tomlinson (2009) found that these programs exhibited three main characteristics. First, schools regularly scheduled time for mentors and mentees to work together. Secondly, schools involved mentors in the planning and evaluation of mentoring programs. Lastly, schools fostered a culture of collaborative learning. As a result, these mentoring programs decreased the numbers of new teachers who left teaching or transferred to another school. In addition, these programs increased collaboration and camaraderie in their schools.
In order to streamline targeted support for mentees, more communication is needed between teacher education programs and TIPs. For example, diagnostic information from teacher education programs could provide mentors with a starting point for support (Grossman & Davis, 2012). Administrators should work with mentors to ensure that mentoring is aligned with the aims, initiatives, and structures of the school. In addition, mentors and administrators should regularly engage in dialogue regarding mentoring activities and school initiatives (Grossman & Davis, 2012).

Overall, the literature suggests that mentoring programs are a critical component of effective TIPs. There are several TIP mentoring program considerations for schools that have ramifications for teaching and learning. Additionally, there is an identified need for improved communication between teacher education programs and administrators, as well as administrators and mentors.

**Online Induction and E-mentoring**

Recent technological advances in computer-mediated communication (CMC), or synchronous or asynchronous online communication tools, have opened the door to new types of teacher induction support. Online induction has emerged from these advancements in technology as a specific type of induction that requires the use of CMC tools. E-mentoring is a key component of online induction and includes CMC tools such as “e-mail, discussion boards, chat rooms, blogs, web conferencing, and growing internet-based solutions that are changing the way mentors and mentees interact” (Smith & Israel, 2010, p. 30). Currently, there is limited research on e-mentoring in comprehensive online induction platforms.

In order to better understand how to examine my own development in my role as a university-sponsored online induction e-mentor using a comprehensive platform and
how e-mentoring contributes to the development of novice science teachers, it is imperative to be knowledgeable about the current literature related to online induction and e-mentoring. Technology changes rapidly, and that is why I have included literature published within the last six years.

The flexible nature of online induction makes it possible for school systems to provide induction support when traditional comprehensive TIPs with face-to-face support are not a viable option. Rural, special education, and content area teachers benefit from this type of online support. Online induction can add an additional layer of support within comprehensive TIPs, or it can be used as the primary vehicle for induction support.

Beginning teachers who work in rural schools often experience limited face-to-face contact with school district personnel involved in teacher induction due to challenges associated with distance. In a recent survey of 118 Queensland, Australia P-12 novice teachers, Kelly, Reushle, Chakrabarty, and Kinnane (2014) found that rural teachers desired online induction support. Of those surveyed, 20% were not receiving mentoring or induction support. Additionally, 95% wanted access to an online support forum that included the participation of experienced teachers. The results of this survey indicate that there is a perceived need and desire among new rural teachers for online induction.

Recent studies on online induction are focused in three areas. Some studies focused on online mentoring to support novice content area or special education teachers. Another group of studies examined online induction support through online
learning communities (OLCs). Finally, a few studies investigated online induction focused on the development of reflective skills in new teachers.

**E-mentoring Support for Beginning Content Area and Special Education Teachers**

Some online induction programs provide mentoring support for special education teachers and content area teachers in the same disciplines. For some school districts, formal e-mentoring partnerships makes it possible to serve a larger group of teachers in mentoring programs (Dempsey, Arthur-Kelly, & Carty, 2009). Technology allows for increased flexibility during the mentoring process. Studies by Bang and Luft (2014) and Hunt, Powell, Little, and Mike (2013) provide insight into how e-mentoring supports novice content area and special education teachers.

Bang and Luft (2014) investigated the interactions of novice teachers and experts in a subject-specific, e-mentoring program developed to boost STEM achievement. STEM refers to the academic content areas of science, technology, engineering, and mathematics. The interactions between two beginning science teachers and their mentor teachers were examined over the course of one year. WebCT served as the online platform for communication between mentors and mentees. This platform included a virtual room for asynchronous communication between mentors and mentees. Asynchronous communication is a type of communication that occurs intermittently over time. During the study, participants were advised to post comments approximately four times a week regarding science teaching issues. In addition, e-mentors and mentees were asked to plan, implement, and reflect on a lesson together. Computer-mediated discourse analysis was used to analyze participation patterns, interaction, and social behavior. The findings indicated that all participants felt like they were partnered with like-minded individuals and the experience helped them develop a
sense of comradery. Mentees believed that online mentoring helped their teaching practices, while e-mentors believed that the experience helped them improve their pedagogical content knowledge. This study was significant because the formal e-mentoring partnerships afforded benefits to both mentors and mentees. Additionally, asynchronous communication tools within an online platform offered flexibility of time and location.

Hunt et al. (2013) examined the efficacy of novice special education teachers using the New Teacher Center's Electronic Mentoring for Student Success (eMSS) mentoring and induction platform. The New Teacher Center (NTC) is a non-profit organization driven to improve student achievement by contributing to the effectiveness of novice teachers and administrators (“About New Teacher Center,” n.d.). Twenty-two novice special education teachers participated in the eMSS e-mentoring program. Data was collected from a pre- and post-survey that was administered to these teachers. The eMSS platform was designed to provide mentoring according to a teachers’ content area or exceptionality specialization (e-Mentoring for Student Success (eMSS),” n.d). However, Hunt et al. (2013) found that the perceptions of the novice teachers regarding knowledge acquisition, teaching practices, and professional growth were unfavorable. This study was important because the results indicated that “one size fits all” online induction programs may not be appropriately tailored to the needs of novice teachers who teach in different contexts.

The results of Bang and Luft (2014) and Hunt et al. (2013) show that there is a need for e-mentoring for novice teachers who teach within the same subject area, exceptionality, or grade level. While Bang and Luft (2014) found that tailored e-
mentoring programs provide benefits to mentors and mentees, it is apparent from the findings of Hunt et al. (2013) that careful consideration is required in the design of e-mentoring support for new teachers who require specialized support.

**Online Learning Communities**

Some online induction programs feature OLCs as the primary means of support for novice teachers. OLCs evolved from professional learning communities (PLCs). PLCs are comprised of a small group of practitioners who collaboratively work together to focus on learning and hold each other accountable for results (DuFour, 2004). PLCs also provide teachers with opportunities to deeply investigate issues in teaching and learning (Fullan, 2007). OLCs also work toward these aims, but are carried out with CMC tools.

CMCs, such as video conferencing, contribute to the development of OLCs as a method of providing collaborative online induction support. According to Dempsey et al. (2009), novice teachers often work in isolation, and one-on-one mentoring partnerships may not help mentees feel that their concerns are shared by other new teachers. OLCs have been shown to provide emotional support and increase reflective skills of beginning teachers who share knowledge and challenges (Dempsey, et al., 2009). A small number of recent studies have investigated the use of OLCs in online induction.

Taranto (2011) examined how OLCs and TIPs complement each other with CMCs. This study used a mixed-methods approach. Quantitative data included surveys and tracking of the types of social interactions that took place on the wiki. Qualitative data included textual data from discussion board threads, questionnaires, and transcriptions from focus group interviews. A cohort of 16 new teachers who were hired for the 2009-2010 academic year participated in this study for one year. The OLC
investigated in this study included participation on the wiki by a wide variety of educators including four experienced teachers, five district administrators, five principals, and four professors. The OLC was housed on Wikispaces which is an online wiki platform. Wikis are a collaborative CMC tool that allows users to edit the content of the website. The researcher created wiki pages based on professional development themes from a pilot study. Within each wiki page, the researcher uploaded content to share with participants. Additionally, a discussion board was created on each wiki page to stimulate discussion. Participants Taranto (2011) found that new teachers in the study supported the use of the OLC. In addition, all the new teachers in the study reported that the online learning community was helpful and useful and contributed to improved classroom instruction.

In another study, Dalgarno and Colgan (2007), investigated 27 novice teachers who were members of the Connect-ME mathematics teacher community of approximately 245 individuals. Qualitative focus group and telephone interview data was collected over a two-month period. Connect-ME is an online teacher support community that features mentoring tools, resources, virtual meeting spaces, and a helpline. The participants selected for this study were all graduates of the same teacher education program and members of the Connect-ME community. The participants used Connect-ME because they sought out long-term and ongoing alternative support that related to their own context, enabled control of their learning, and provided opportunities to interact with other mathematics teachers. In addition, they wanted formal and informal learning experiences with experts and their peers. The findings showed that Connect-ME provided an OLC for these participants that enabled the sharing of ideas
and resources with teachers from the same content area, opportunities for reflection, and the freedom from isolation. In addition, Connect-ME facilitated emotional and personal connections, and provided pedagogical and curriculum support. This study was significant because OLCs were found to have multiple benefits for novice content area teachers.

Maxwell, Harrington, and Smith (2010) investigated how OLCs could be used to respond to specific challenges for new teachers. The Education Alumni Support Project (EdASP) developed by the University of New England, was established to provide support for a large group of new teachers with small number of mentors. The EdASP online platform was made available to 382 beginning teachers who graduated from primary and secondary teacher education programs at the University of New England. Within the platform, the following seven discussion forums were provided for each group of teachers (primary/secondary): Behavior Management support; Teaching and Learning support; Curriculum Area support; Contexts in Education; Coffee Lounge (social interaction); Contributed Resources (academic and peer shared resources or links to resources); and Feedback and Suggestions. Data were collected from questionnaires and online postings during the 2005 school year. Out of 382 teachers, only 125 logged on to EdASP. Additionally, only 46 teachers contributed postings to EdASP. The findings indicated that EdASP supported large numbers of new teachers by reducing professional and social isolation. Behavior Management support was the most popular area on which teachers focused their time. Although the results show that there were several benefits to EdASP online induction, Maxwell et al. (2010) cautioned
that online support should be a supplement, rather than a replacement for face-to-face mentoring.

OLCs can also be developed through school-university partnerships. Donne and Lin (2013) examined how a university-sponsored online induction website supported recent special education teacher education program graduates. In response to limited funding, the small private university involved in the partnership initiated the OLC to fulfill state requirements and support new teachers. Additional goals of the initiative included providing professional support, developing a peer mentoring community, and sharing resources and experiences. A wiki served as the platform for the OLC. The wiki included sections such as “Working as a Special Educator”, “Teacher Community”, and “Stay Connected with the University”. Data were collected on frequency and use of specific resources on the wiki for one year. The results showed that 83% of graduates participated on the wiki, although the total number of graduates was not provided. Graduates benefited from the wiki through the contributions from multiple users. The wiki also provided a free platform where it was unnecessary to have a designated leader. Finally, the wiki was flexible in terms of time and location. The study by Donne and Lin (2013) illustrated how universities can provide low-cost support for school districts.

The studies outlined above (Taranto, 2011; Dalgarno & Colgan, 2007; Maxwell et al., 2010; Donne & Lin, 2013) support the use of OLCs for induction support. Wikis were found to have multiple benefits for beginning teachers (Donne & Lin, 2013; Taranto, 2011). While Taranto (2011) found that wikis impacted classroom instruction, Donne and Lin (2013) found that wikis provide financial savings to educational institutions. In
the Dalgarno and Colgan (2007) study, Connect-ME provided an OLC platform for content area teachers. This is particularly attractive for secondary teachers who typically teach courses in one content area. OLCs also make it possible to support a large group of beginning teachers as indicated in the findings of Maxwell et al. (2010).

**Online Reflection**

Educational philosophers have long touted the benefits of teacher reflection (Dewey, 1933). Today, reflection is still considered an essential teaching practice and continues to be a focus of educational research. Recently, a limited number of studies have examined the effectiveness of technology tools that are used for reflection in online induction.

In one study, Hwang and Vrongistinos (2012) investigated the Quality Teachers for Quality Students (QTQS) project developed by the University of Southern California. The purpose of the QTQS project was to increase instructional support for beginning teachers who were working with English language learners (ELLs) in San Bernardino County, California. The QTQS project featured an online support platform that provided opportunities for mentoring, training, support, and networking with experienced teachers and university faculty. Thirteen beginning teachers and four mentor teachers participated in the study. Participants in the study were experienced teachers who served as mentors and the new teachers who were the mentees. Three mentees were assigned to work with one mentor. Mentors primarily supported mentees with the instructional strategies for ELLs. Initially, Blackboard was the primary technology tool that was used to support mentoring partnerships in the online platform. This technology is a web-based learning management system that provides several learning and communication tools. Skype, a video conferencing tool, was later added which
increased flexibility. Mentees were required to self-evaluate his/her recorded lesson. The QTQS project included multiple tasks for mentors-mentees related to a video self-reflection. These tasks primarily focused on teaching of ELLs and ELL literacy development. Between 2007 and 2010, a qualitative survey was administered to the participants at the end of each year. The survey questions focused on the use of Blackboard and Skype as mentoring tools. The results showed that the online technologies used in the QTQS project reduced the time constraints of face-to-face mentoring. Furthermore, the novice teachers in the study felt that QTQS benefitted their instruction and provided non-judgmental support. This study was significant because it provided support for the benefits of video conferencing during informal online mentoring partnerships.

Video annotation and feedback tools have become a viable option for TIPs. The use of video to support quality teaching is not a recent phenomenon. Video technology in various forms has been used in teacher education programs and in-service training sessions to model best practices and to provide feedback on classroom teaching (Fadde & Sullivan, 2013). Advances in technology have made video annotation and feedback tools a feasible option for professional development and teacher education programs (Rich & Hannafin, 2009). These tools benefit pre-service teachers by providing evidence-based feedback which leads to improvement in teaching practices (Fadde & Sullivan, 2013).

McFadden et al. (2014) examined the use of video annotation as a tool for developing reflective practices for secondary science teachers who participated in an online teacher induction course. Annotations extracted from sixteen first and second-
year teachers between 2009 and 2011 were coded. The findings indicated that teachers discussed their own teaching practices and decisions, rather than the interactions and behavior of students. In addition, most annotations focused on description and explanation, rather than higher-order reflective practices such as interpretation and evaluation. Although video annotation and feedback provides new methods for self-reflection in TIPs, it is apparent from the McFadden et al. (2014) study that novice teachers require professional development on the topic of effective reflection.

Blogs are another type of technology tool that facilitates reflection. Blogs are online journals that can be shared privately or publicly. In addition, visitors to the blog and the author of the blog may communicate through asynchronous comment tools. Killeavy and Moloney (2010) investigated self-reflection in TIPs through the use of blogs. The study examined whether blogging would encourage reflective practice and peer collaboration and support. Mixed methods were used to examine the electronic personal reflective diary usage by the participants. Two groups of approximately 15 new secondary teachers participated during the 2007-2008 school year. This study was conducted in conjunction with the National Pilot Project on Teacher Induction in Irish secondary schools. The aim of this initiative was to encourage new teachers to reflect purposefully, develop a community of practice, and facilitate mentoring partnerships. TIPs in Ireland require new teachers to write daily notes in a reflection journal. Prior to the study, the practice of journaling was inconsistent and teachers were reluctant to keep journals. Like the results in McFadden et al. (2014), there was little evidence of increased reflective activities of beginning teachers. Most reflections did not involve analysis and were more descriptive in nature. In addition, most blog posts involved
sharing of emotions. Furthermore, there was no evidence of individual challenges or concerns in the data of the collaborative discussions. Finally, there was a lack of blog sharing with other new teachers in the program. Therefore, blogs did not contribute to the development of peer support groups. The findings were important because it revealed that new teachers need professional development and guidance in developing reflective skills. In addition, the results suggested that a community should already be established before transitioning to an online environment. Furthermore, this pre-established community should have a shared purpose.

The studies by McFadden et al. (2014) and Killeavy and Moloney (2010) indicate that the use of technology tools does not necessarily lead to increases in reflective practices. Accountability and professional development are two considerations that should be addressed prior to implementation. Hwang and Vrongistinos (2012), on the other hand, were able show that the development of reflective skills improved when novice teachers worked directly with a mentor.

**Summary of the Literature Review**

The literature on e-mentoring and online induction was instrumental in informing my self-study. Upon engaging in my self-study research, I was optimistic that the asynchronous collaboration groups in Florida STEM TIPS would provide flexibility and aide in the development of pedagogical content knowledge as found in the Bang and Luft (2014) study. The findings from Hunt et al. (2013) helped me gain a better understanding that a "one size fits all" approach to online induction is not effective. That is why I worked closely with each mentee to develop a plan for the teaching practices that they wanted to improve. The results from Taranto (2011) and Dalgarno and Colgan (2007) indicated the need for the development of an OLC between my mentees.
Consequently, I created an asynchronous collaboration group in Florida STEM TIPS so that my mentees could share ideas and reduce the feelings of isolation that they experienced. I was also encouraged by the Hwang and Vrongistinos (2012) study which showed that the use of videoconferencing in online induction benefitted instruction.

The technology tools used in online induction support varied across the studies in this report. More importantly, the studies focused on the outcomes of the use of specific technology tools including: asynchronous discussions (Bang & Luft, 2014; Dalgarno & Colgan, 2007; Hunt et al., 2013; Maxwell et al., 2010), wikis (Donne & Lin, 2013; Taranto, 2011), Blackboard and Skype (Hwang & Vrongistinos, 2012), weblogs (Killeavy & Moloney, 2010), and video annotation and feedback tools (McFadden et al., 2014). Little is known regarding the relative value of these technologies, or which combination of these tools is most effective for online induction. Furthermore, there is limited research on the process of e-mentoring in comprehensive online induction platforms. In other words, we have more information about the tools to use, but not specifically the process of how to use them in the context of e-mentoring beginning teachers.

This gap in the literature led to the development of the following self-study research questions: (1) How has e-mentoring on a university-sponsored online induction platform informed my understanding of the induction of novice teachers? (2) How has e-mentoring novice teachers on a university-sponsored online induction platform informed my practice as a teacher educator? Research in this area helped me better understand how to make mentoring decisions to best meet the needs of my mentees. In addition, filling this gap in the literature can help university-sponsored online induction e-mentors learn effective methods for supporting new graduates and school district teacher
induction programs. In the next chapter I review the research questions and describe
the theoretical framework, methodology, and other research design considerations.
CHAPTER 3
STUDY METHODOLOGY

The primary purpose of this self-study was to examine my experiences, challenges, and decision-making as a university-sponsored online induction e-mentor for beginning teachers using a comprehensive platform. Additionally, this research helped me better understand the processes involved in e-mentoring. To accomplish those goals, I developed a self-study research plan for studying my own e-mentoring practices. The design decisions for my study are laid out in the following sections.

Research Questions

The research questions for this self-study focus on the study of the self and the processes that I engaged in while e-mentoring. The following research questions guided my study:

1. How has e-mentoring on a university-sponsored online induction platform informed my understanding of the induction of novice teachers?

2. How has e-mentoring novice teachers on a university-sponsored online induction platform informed my practice as a teacher educator?

Theoretical Framework

My self-study is grounded in a constructivist theoretical framework was applied to my self-study. Gray (2014) stated that in constructivism, truth and meaning are created through interactions with the world. Constructivism is a relevant theoretical framework for this study because I created new knowledge through my interactions with mentees during the research process through multiple interviews and online communications. Through careful data collection and analysis, I ensured that the knowledge I produced reflected the mentees’ experiences and my own experiences. The constructivist theoretical perspective also holds that people seek to understand reality so that they
can better adapt to their environment as needed (Bruner, 1996). In my self-study, I examined the processes of e-mentoring. Along the way, I adjusted my practice so that I could better serve my mentees. Finally, a constructivist theoretical perspective holds that people construct meaning in different ways (Gray, 2014). In this self-study of my own knowledge construction, I developed understandings by examining patterns of my own actions, as well as the mentees’ experiences.

Self-Study

In this research, self-study is defined as the “critical examination of one’s actions and the context of those actions in order to achieve a more conscious mode of professional activity” (Samaras, 2002, p. xiii). This type of research is primarily conducted by teacher educators (Cochran-Smith & Lytle, 2007). In teacher education programs, faculty undertake self-study research for a variety of purposes including personal and professional development (Cole & Knowles, 1998). Self-study helps teacher educators understand the nature of teaching and learning and how to improve it (Loughran, 2002). By studying specific questions of practice, teacher educators can make the necessary adjustments to improve teaching and learning in a specific context. Many teaching practices and contexts can be explored through self-study including how a teacher educator develops as a scholar or their interactions with students (Pinnegar & Hamilton, 2009). Self-study was an appropriate approach for this study because I investigated the processes involved with e-mentoring on an online platform for the purposes of improving my own practice so that I could better support the development of beginning science teachers.

Self-study is not a set of methods, but a unique research methodology (Feldman, 2009). This methodology allows for flexibility in data collection and analysis. Data
sources in self-study research are dependent on the teaching practice under investigation. In addition, a wide variety of qualitative methods have been used in self-study research (Loughran & Northfield, 1998). Although data collection and analysis methods vary widely between studies, all self-studies involve questioning of practice, collaborating with peers, and reframing practice (Samaras & Freese, 2009).

Self-study has also been described as a “personal-constructivist-collaborative” approach to research (Beck, Freese, & Kosnik, 2007, p. 1261). It is personal because these studies are about the self and by the self. Self-study is constructivist because knowledge is constructed based on the researcher’s experiences and social interactions. Finally, despite the use of the word “self” in the name, self-study is collaborative because the researcher must engage in dialogue with others in order to develop better understandings of the teaching practice under investigation (Beck et al., 2007).

**History of Self-Study**

Self-study evolved from the paradigms of reflective practice, teacher inquiry, and action research (Samaras & Freese, 2009). Reflective practice developed from the work of Dewey (1933) who explored the potential of reflective thought in teaching and learning. Later, Schön (1983) introduced the theories of reflection-in-action and reflection-on-action as a necessary process that practitioners undergo to improve over time. Self-study researchers expand on reflective practice by engaging in systematic research on questions related to their own practice.

Action research is a qualitative research methodology that developed out of the social action movement of the 1940’s and 1950’s (Cochran-Smith & Lytle, 2007). This type of practitioner-driven research is intended to bring about change and typically has
a social justice emphasis (Dana & Yendol-Hoppey, 2014). Teacher inquiry, another qualitative research methodology, emerged in the late 1980’s. These studies are planned and implemented by teachers and involve examining questions related to practice in the classroom (Cochran-Smith & Lytle, 2007). Self-study, action research, and teacher inquiry all involve the investigation of problems related to practice, a cyclical research process, and systematic data collection and analysis. However, self-study is distinctly different from action research and teacher inquiry because the research is focused solely on the improvement of the self, though scholars of teacher inquiry would argue that teacher inquiry can also be about improvement of self (Samaras & Freese, 2009). Today, all three research paradigms are considered genres of the umbrella term practitioner inquiry (Cochran-Smith & Lytle, 2007).

In the early 1990’s, after teacher educators spent years espousing the benefits of teacher inquiry and action research, many began to investigate questions related to their own teaching practices. This research led to the development of self-study as an independent methodology of qualitative research. In 1994, the Self-Study of Teacher Education Practices (S-STEP) Special Interest Group of the American Educational Research Association (AERA) emerged from this growing interest in and use of self-study among teacher educators (Loughran, 2002). The S-STEP Special Interest Group has become the largest special interest group within the AERA. The S-STEP community convenes every two years at the Castle Conference to network and share self-study scholarship (“The History of the Castle Conference,” 2016).

**S-STEP Methodology**

A core set of characteristics differentiates self-study from other methodological approaches. LaBoskey (2004b) identified the following characteristics of self-study
research: “it is self-initiated and focused; it is improvement-aimed; it is interactive; it includes multiple, mainly qualitative, methods; and, it defines validity as a validation process based in trustworthiness (Mishler, 1990)” (p. 817). To provide more structure to guide self-study researchers, Pinnegar and Hamilton (2009) developed a systematic set of components called S-STTEP to enact LaBoskey’s characteristics of self-study research. The eight components that guide S-STTEP research are: (1) Provocation; (2) Exploration; (3) Refinement; (4) Identify Focus; (5) Design of the Study; (6) Reconsideration Process; (7) Ethical Action; and (8) Presentation. These components were specifically designed for instructors who want to research their own teaching and teacher education practices (Pinnegar & Hamilton, 2009). I used Pinnegar and Hamilton’s (2009) S-STTEP framework to guide this study. Table 3-1, located at the end of this chapter, includes a brief description of each S-STTEP component, as well as the locations where these components are addressed within the self-study.

When developing my research questions, I initially used the S-STTEP Framework-for-Inquiry (Pinnegar & Hamilton, 2009). The Framework-for-Inquiry included a list of questions that helped me reflect and elicit potential questions related to my teaching practice. Appendix A includes my responses to the questions within the Framework-for-Inquiry. This framework assisted in my idea development, or Provocation S-STTEP component that was later used in the Framework-for-Analysis and the problem and purposes sections described in Chapter 1. Additionally, possible topics for research outlined in the Framework-for-Inquiry were useful in the development of the Refinement S-STTEP component featured in Chapter 3.
After completing the Framework-for-Inquiry, I started work on the S-STTEP Framework-for-Analysis which is also used for the planning of studies using the S-STTEP methodology. Initially, I completed the Purpose, Definition of Self-Study, Definition of Self-Study Methodology, and Rigorous Research Practice sections of the Framework-for-Analysis. This framework served as an instrumental tool for the Identify Focus component of S-STTEP discussed in Chapter 1. This tool was also used to develop the Refinement and Design of the Study S-STTEP components found in this chapter. The remaining sections of this framework were used to focus my thinking during data collection and analysis. Appendix B includes my initial work on the Framework-for-Analysis. In the first column of this framework, potential issues regarding the research design of the study were listed. In the second column, a series of questions related to those issues were provided. Finally, in the third column, my responses to the questions in column one were recorded.

**My Self-Study Context**

Self-studies are conducted in the researcher’s natural setting. At the onset of this self-study research, I was a fourth-year doctoral candidate specializing in curriculum, teaching, and teacher education at the University of Florida. The following section details the various contextual features of my self-study. First, I will discuss the institution that I represented while serving as an e-mentor. Secondly, I will describe the teacher education program that my mentees graduated from. Finally, I will describe the online induction platform that was used for e-mentoring.

**University of Florida**

When I conducted my self-study, I e-mentored beginning science teachers through a university-sponsored online induction platform. In this role, I represented the
University of Florida when I provided e-mentoring support to novice teachers in Florida. The University of Florida is a large research-intensive university located in Gainesville, Florida. It is one of the five largest universities in the United States. Out of the 49,785 students, 14,677 are minorities and 6,000 are from other countries. Over 100 undergraduate degree programs are offered. The University of Florida boasts having the number two ranked online bachelor’s program (“Stats and Facts for Prospective Students,” 2014).

**UFTeach**

The mentees in this self-study, described in detail later in this chapter, are beginning teachers who graduated of the UFTeach program at the University of Florida. This program is an alternative certification program that affords math and science majors with an opportunity to minor in education. UFTeach is replicated from the UTeach program at the University of Texas. Students in the program acquire strong pedagogical skills for teaching mathematics and science concepts and participate in extensive field experiences in secondary classrooms.

**Florida STEM TIPS**

All e-mentoring activities took place within the Florida STEM TIPS online induction platform. Florida STEM TIPS, a University of Florida initiative, supports school district induction programs with the goal of retaining new STEM teachers. STEM refers to the academic disciplines of science, technology, engineering, and mathematics. The platform includes online curriculum resources and an array of computer-mediated communication (CMC) tools designed to facilitate communication between mentors and mentees. CMC is a term used to describe any type of synchronous or asynchronous online communication tool. CMC tools enhance reflection and the sharing of experience
which contributes to deeper levels of understanding and the construction of knowledge of practice (Berry & Crowe, 2009; Hoban, 2007). The specific CMC tools that were used for e-mentoring on Florida STEM TIPS are discussed in the Data Sources section of this chapter.

**Participant Selection**

In the S-STTEP research process, I was both the researcher and a participant (Pinnegar & Hamilton, 2009). Throughout my self-study, I was an active participant. My primary role was to e-mentor first- and second-year science teachers. In this capacity, I played a non-evaluative role. Additionally, my online induction supports supplemented the teacher induction programs and mentoring support that my mentees were already receiving from their respective school districts and/or schools.

In June of 2016, a small sample of new science teachers was selected to participate in this self-study. The mentees for this study were recruited based on the following criteria: (1) A first- or second-year science teacher who was a University of Florida graduate and completed the UFTeach STEM teacher education program; (2) A secondary science teacher in Florida. It was important that the mentees who were recruited taught in Florida because Florida STEM TIPS was designed to support STEM teachers in that state. Initially, there were four first-year prospects and four second-year prospects who met the mentee criteria. At the beginning of mentee recruitment, I emailed the eight prospects to discuss my self-study and to see who might be interested in receiving more information. Upon learning who was interested, I telephoned the interested prospects to explain the self-study in further detail. I followed up the telephone call with an email which included the institutional review board (IRB) consent forms. They were asked to sign and return the IRB consent forms by email. In that
email, I also asked the interested prospects to identify two teaching practices they would like to work on if they had a University of Florida mentor to support them. After contacting all mentee prospects, I ended up having three teachers who volunteered to participate in my self-study. Kara and Dan were both first-year teachers. Nancy was my only second-year teacher. Pseudonyms are provided for the names of mentees and the schools where they were employed at the time of the study. A description of each mentee is provided in vignettes that are featured within Chapter 4: Findings.

**Duration of the E-Mentoring Partnership**

The duration of the e-mentoring partnerships was based on the “Phases of First-Year Teachers” developed by Moir (1999). A visual representation of the phases are pictured in Figure 3-1.

![Figure 3-1. Phases of first-year teachers’ attitudes toward teaching (Moir, 1999).](image)

This study began during the anticipation phase which lasted through the first few weeks of school. During this phase, beginning teachers are typically optimistic about the upcoming school year. Beginning in September, new teachers go through the survival phase where they are very busy, but maintain a positive outlook. In mid-October, new teachers begin the disillusionment phase. During this phase, new teachers succumb to
the physical and emotional stresses of the job. I decided to end the e-mentoring partnerships right before winter break. This allowed me to work closely with my mentees to help them through the trial and tribulations of the two most challenging phases for first-year teachers.

**Data Sources**

Data sources for my self-study included my reflective journals, multiple semi-structured mentee interviews, and online textual data. Additionally, teacher developed instructional plans and student work samples were used as secondary data to prompt questions and reflection during interview two. All data sources were needed during the S-STTEP Reconsideration Process because they will be used to help me develop understandings that will later be discussed in Chapter 4. Data sources are described in more detail in Table 3-2 located at the end of the chapter. Column one lists each data collection source used. Column two briefly describes the purpose for each type of data. Finally, column three provides a timeline for the collection of each data source.

**Mentee Interviews**

Interviews served as a key data source in my self-study. In order to improve my own e-mentoring practices, it was critical to learn the perspectives of those whom I would be mentoring (Kosnik, Cleovoulou, & Fletcher, 2009). Multiple semi-structured interviews were conducted in order to gain insights into the perspectives of the mentees. Semi-structured interviews are designed with planned questions in advance, but allow the researcher to improvise with unplanned probing questions based on the nature of the responses (Wengraf, 2001). In addition to using multiple semi-structured interviews, the need did arise to conduct informal interviews during some video conferences.
The mentees were required to participate in three mentee interviews. Upon successful recruitment of the mentees, the first interview with each mentee was conducted in August of 2016. The first interview focused on the background and teaching experiences of the mentees. During this interview, I guided mentees toward identification of two teaching practices that they feel needed improvement based on an examination of each mentees' district instructional framework. I also provided them with a timeline for mentoring communications. The second interview was scheduled in October of 2016 and focused on the experiences of my mentees during online induction. The interview data was used to adjust my online induction mentoring practices. The third interview was scheduled in December of 2016 and focused on the experiences and reflections of mentees related to online induction and mentoring. Appendices C-E includes interview protocols for each of the three interviews. These protocols were used for each mentee and helped guide the flow of the interview. The protocols were prepared so that consistency was established in regards to the questions and issues that were discussed (Patton, 2002). Each interview was digitally recorded and transcribed.

**Online Textual Data**

All online textual data came from a variety of CMC tools housed on Florida STEM TIPS. The communications that took place within these tools were recorded, saved, and transcribed for data analysis. The CMC tools housed on the Florida STEM TIPS platform included video conferencing, collaboration groups, and video analysis on teaching which are described in detail within this section.

**Video conferencing.** The Zoom video conferencing tool was used for the mentee interviews and video conferencing. This tool offers several features including
screen sharing, annotating, and recording. I used this tool for weekly scheduled meetings with each participant to collaborate, answer questions, and strategize on how to help them improve the two teaching practices identified during the first interview. The e-mentoring meetings held in Zoom were recorded and transcribed.

**Collaboration groups.** These online asynchronous meeting spaces were used for leaving messages at different time intervals. Messages included questions, concerns, and updates. I established private collaboration groups for communication with each of my mentees. In addition, I created a collaboration group for communications between all the mentees. All communications within these collaboration groups were saved for data analysis.

**Video analysis of teaching.** The Torsh TALENT tool supports the recording, upload, storage, and management of classroom videos. The mentees in my study had the option to record some of their lessons on the Torsh TALENT cell phone app. After a lesson was recorded, it was automatically uploaded to the Torsh TALENT platform housed on Florida STEM TIPS. Later, I added time-stamped feedback and summary comments to the uploaded video. The participants were also encouraged to engage in self-reflection on Torsh TALENT. All time-stamped feedback and summary comments were saved for data analysis.

**Reflective journals.** During the self-study, I maintained three reflective journals including Weekly Memos, a Running Journal, and Critical Friend Journal. The Weekly Memos consisted of written narratives related to my reflections during the self-study. These journals included topics such as the challenges that I faced while e-mentoring and the decisions that I made to overcome those challenges (Miles et al., 2014). Each
week, I reflected using a set of four prompts to systematically collect data on my actions, understandings, challenges, and emotions. The prompts included:

- What did I do this week that seemed to best support teachers?
- What did I learn this week about how to mentor novice teachers?
- What were the biggest challenges this week as I tried to mentor?
- What were my overwhelming feelings this week as I did my work?

I also recorded details about my mentees and my interactions with them in a Running Journal. In addition, I maintained a Critical Friend Journal that detailed my relationship and interactions with my critical friend as she challenged my thinking during data collection and analysis (Pinnegar & Hamilton, 2009). These journals allowed me to track my ideas as they evolved through the self-study. Later, these journals will be addressed in the S-STTEP Reconsideration Process component. This process involved developing understandings based on my data and dialogue with others.

**Data Analysis**

The Miles, Huberman, and Saldana (2014) qualitative inductive thematic analysis approach was used to analyze all data sources. I chose this data analysis method because it was useful for the analysis of textual data and helped me identify patterns that were shared among the data sources (Miles et al., 2014). This data analysis method was used to analyze each of the three participant interviews and the three reflective journals. Additionally, it was also used to analyze the transcripts from online asynchronous communication, video conferencing, and video analysis on teaching. In this self-study, data analysis occurred concurrently with data collection because I wanted to adapt my practices to be responsive to teacher participant needs.
The Miles et al. (2014) approach to data analysis involved selectively collecting data, identifying patterns by comparing/contrasting the data, seeking more data to confirm emerging themes, and making inferences based on the developing themes. Specific steps guided this data analysis process including first cycle coding, second cycle coding (pattern coding), and assertions.

**Step 1: First Cycle Coding**

Coding of all data sources began after the initial interviews were transcribed. This step involved labeling chunks of data with a descriptive label. Additionally, coding served as a method for condensing large amounts of data (Miles et al., 2014). This process allows for the identification of relevant data, as well as provides a way to form make comparisons with similar data.

In this study, all data collected were initially coded through a process called first cycle coding (Miles et al., 2014). This entails assigning a code to a data chunk. A variety of types of codes were used during this stage. These types of codes included: (1) descriptive codes – used to identify the topic of a data chunk; (2) In Vivo codes - used for any repeated phrases from participants; (3) process codes - used to identify chunks of data that indicate patterns of action; (4) simultaneous codes – two or more codes within a datum to indicate interconnectedness (5) value codes – attributing datum as either an attitude, belief, or value; (6) attribute codes – basic descriptive information related to the context. My research questions guided the process of coding each data source.

**Step 2: Second Cycle Coding (Pattern Coding)**

Second cycle coding involved reducing the number of first cycle codes into less categories. For this study, second cycle coding allowed for common themes and
processes to emerge between mentees and me. These pattern codes are characterized by (1) categories/themes; (2) causes/explanations; and (3) relationships.

To organize and gain insights from the data, NVivo, a type of computer-assisted qualitative data analysis software, was used throughout the data collection and analysis. According to Bazeley and Jackson (2013), NVivo has the capability to maximize the effectiveness and efficiency of qualitative research. A sample of first and second cycle coding is provided in Appendix F.

**Step 3: Assertions**

Assertions are declarative statements, or findings, that are supported with evidence from the data. Miles et al. (2014) stated that this step of data analysis is primarily used to synthesize and summarize data analysis through a discussion of the themes or findings from the study. In S-STTEP methodology, the assertions are referred to as assertions for action and understanding (Pinnegar & Hamilton, 2009). Chapter 4 includes the assertions for action and understanding, or findings, that are supported with data.

**Credibility and Trustworthiness**

Even though “self-study research” implies that it is an individual endeavor, this could not be further from the truth. It is not possible to fully examine one’s beliefs and practices through a single individual’s perspective (Loughran & Northfield, 1998). In my self-study, I was not constructing knowledge alone. Understanding the process of e-mentoring required deepening my understanding of and relationship with others (Pinnegar & Hamilton, 2009).

Dialogue in self-study research plays an important role in increasing the credibility of the researcher and the trustworthiness of the data. To reduce bias in this
self-study, I engaged in dialogue in multiple parts of the research process (Feldman, 2009). As mentioned previously, I interviewed each participant three times and consistently communicated with them through the e-mentoring partnership. In order to gain a deeper understanding of my practice, I also engaged in dialogue each week with my critical friend, Susan, to challenge and support my decisions, interpretations, and assertions. During our meetings, I shared with Susan what I learned from data analysis and sought feedback from her. She played a crucial role during data collection and analysis (Pinnegar & Hamilton, 2009).

There are some other strategies identified by Loughran and Northfield (1998) that I used to enhance the trustworthiness of the findings. First, in Chapter 4 I painted a picture of e-mentoring interactions between myself and the participants in a vignette of each mentee. This is important because readers will be able to visualize the nature of our interactions with each other. Secondly, I linked the findings to literature. These strategies, along with the generation of implications, may have potential for transferability.

During the Reconsideration Process of S-STTEP, I completed a member check. The purpose of member checking is to learn whether my findings are consistent with the mentees’ perspectives. This process allowed me to collect feedback from my mentees on the interpretive conclusions that I made (Miles et al., 2014). Nancy was the only mentee who responded back with an email that confirmed she agreed with my findings, and she reiterated some of the findings with her own words. Overall, the strategies for ensuring integrity outlined in this section comprised the Ethical Action component of S-STTEP methodology.
Subjectivity Statement

My self-study evolved from both my teaching experiences in secondary education and a STEM teacher education program. Between 2005 and 2013, I taught history and science courses at a high school located in a low-income section of Jacksonville, Florida. The student body was 99% African American and 85% of the students received free or reduced lunch. On a weekly basis, I encountered issues with race, poverty, violence, literacy, and low achievement. There were many instances when I thought about leaving the teaching profession because the pressures were too overwhelming. Since I arrived in teaching through an alternative certification route, I know how difficult it is to adjust to a full-time teaching position. Therefore, I fully understand the need for mentoring programs for novice teachers.

Based on my experiences in secondary education, I needed to be careful about how I assisted my mentees. I tend to rely on the sharing of my past secondary teaching experiences to help my mentees in their development as new teachers. Loughran (2005) cautioned beginning teacher educators such as myself to avoid relying too heavily on the sharing of strategies that worked in my former K-12 classroom. These strategies may not apply to every classroom context. While e-mentoring, I was vigilant about using research-based practices when sharing advice with my mentees.

Between the fall of 2013 and the spring of 2016, I taught undergraduate STEM teacher education courses in the UFTeach program at the University of Florida as part of my graduate assistantship. Since the UFTeach minor was an alternative teacher education program, I was deeply concerned about my students’ continued success in the classroom upon completion of the program. I taught both Kara and Dan in the program. I also advised Nancy when she served as a UFTeach peer mentor. Prior to
the onset of my self-study, it was important for me to clearly communicate the roles and responsibilities of each party so that my mentees understood the nature of the partnership.

During my graduate assistant experiences with UFTeach, I became interested in CMC tools that were used in mentoring and online induction. I was particularly drawn to online platform-based video analysis tools. In UFTeach, students used video annotation and feedback tools in two courses that I taught. In 2014, I conducted a pilot study that explored the experiences of two peer mentors in the UFTeach program after providing lesson video annotation and feedback focused on one teaching strategy to student teaching pairs during a one-semester introductory education course. My interest in specific CMC tools could have been a source of bias because I tend to gravitate toward the use of these tools when e-mentoring.

Two core beliefs about teaching and learning guide my teacher education practices. First, I believe learning requires the construction of knowledge through effective instruction. Effective instructors deeply think about the content and what is involved in learning it. Furthermore, effective instructors must create a learning environment that is active and student-centered.

Second, I believe that social interactions also play an integral part in the learning process. Meaningful connections must be formed between instructors and students. In addition, the learning process should be a partnership between instructors and students. To facilitate these partnerships, instructors must act as facilitators, mentors, and coaches.
I believe that my two core beliefs about teaching and learning also extend to e-mentoring partnerships. E-mentors must provide support that is based on the needs of the mentee. Additionally, teacher educators who mentor past or present students must develop strong mentoring relationships and be a partner in the learning process.

**Conclusion**

This qualitative self-study inquiry, guided by S-STTEP, provided a systematic methodology for me to examine the processes that I was involved in while e-mentoring the novice science teachers in the Florida STEM TIPS online induction platform. Through the study of my own practice, I discovered how e-mentoring novice teachers through online induction has informed my practice as a teacher educator. Additionally, I gained a better understanding of the induction of beginning teachers.
<table>
<thead>
<tr>
<th>Component</th>
<th>Description</th>
<th>Implementation</th>
</tr>
</thead>
</table>
| Provocation    | An idea within one’s teacher education practice that evokes interest. This includes an exploration of the issues, relevance, and relationship of this idea as it relates to practices and experiences. | • Chapter 1: Introduction Problem Statement  
• Appendix A: Framework-for-Inquiry |
| Exploration    | Potential resources, ideas, and knowledge are explored. Ideas are connected to relevant research literature. | • Chapter 2: Literature Review  
• Appendix A: Framework-for-Inquiry |
| Refinement     | Connecting background and experience to build a case for the topic of the S-STTEP inquiry. | • Chapter 1: Introduction  
• Chapter 3: Study Methodology, Introduction  
• Appendix B: Framework-for-Analysis |
| Identify Focus | The focus of the topic for the S-STTEP inquiry is introduced. The purpose of the self-study is discussed including how the study will contribute to practice, the teacher education research base, and the greater teacher educator community. | • Chapter 1: Introduction, Purpose Statement  
• Appendix B: Framework-for-Analysis |
| Design of the Study | Choice of data sources, data collection, participant selections, data analysis, and other design decisions. | • Chapter 3: Study Methodology  
• Appendix B: Framework-for-Analysis |
| Reconsideration Process | This process involves developing understandings based on the data and dialogue with others. Ideas are also situated in teacher educator practice and literature. | • Chapter 4: Findings  
• Chapter 5: Discussion and Recommendations |
| Ethical Action | A discussion of how the S-STTEP inquiry is conducted with integrity and transparency. | • Chapter 3: Study Methodology |
| Presentation   | Sharing of the self-study with the teacher educator and educational research community. | • Written Dissertation  
• Job Talks  
• Presentation(s)  
• Publication(s) |
Table 3-2. Data collection summary.

<table>
<thead>
<tr>
<th>Data Collection Source</th>
<th>Purpose</th>
<th>Timeline</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial Interview</td>
<td>The initial interview focused on the background and teaching experiences of the mentees. Additionally, the initial interview helped in the development of questions for the final interview (Merriam, 2009). During this interview, I guided mentees toward identification of teaching practices for mentoring and provided them with an action plan for mentoring activities.</td>
<td>August 2016</td>
</tr>
<tr>
<td>Reflective Journals</td>
<td>My own actions and reflections was documented.</td>
<td>Throughout study</td>
</tr>
<tr>
<td>Online asynchronous</td>
<td>E-mentor-mentee interaction in the online induction platform was documented.</td>
<td>August - December 2016</td>
</tr>
<tr>
<td>discussion and video analysis on teaching</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transcripts</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teacher developed</td>
<td>This data source was used as secondary data to prompt questions and reflection during interview two.</td>
<td>October 2016</td>
</tr>
<tr>
<td>instructional plans</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2nd Participant</td>
<td>The second interview focused on the experiences of mentees during online induction/mentoring. The interview data was used to adjust my online induction mentoring practices.</td>
<td>October 2016</td>
</tr>
<tr>
<td>Interview</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Final Participant</td>
<td>Final interviews with mentees focused on their experiences and reflections related to online induction and mentoring.</td>
<td>December 2016</td>
</tr>
<tr>
<td>Interviews</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
CHAPTER 4
FINDINGS

In the fall of 2016, I engaged in a self-study which involved taking on the role of an e-mentor. Over the span of four months, I e-mentored two first-year science teachers and one second-year science teacher to investigate my own development as a university-sponsored online induction e-mentor using a comprehensive platform. A comprehensive online induction platform is comprised of multiple computer-mediated communication (CMC) tools for e-mentoring. By studying the process of e-mentoring, I gained a more thorough understanding of the challenges involved in e-mentoring beginning teachers. Additionally, I learned about how to address those challenges and respond to teacher needs. This research also helped me better understand the induction of novice teachers through e-mentoring on a university-sponsored online induction platform. Two research questions guided this self-study:

1. How has e-mentoring on a university-sponsored online induction platform informed my understanding of the induction of novice teachers?

2. How has e-mentoring novice teachers on a university-sponsored online induction platform informed my practice as a teacher educator?

In this chapter, I focus on the last stage of the Miles, Huberman, and Saldana (2014) qualitative inductive thematic analysis approach, which consists of assertions, or findings, that are supported with evidence from the data. In S-STTEP, the findings are referred to as assertions for action and understanding (Pinnegar & Hamilton, 2009). This chapter also addresses how I engaged in the reconsideration process of the S-STTEP methodology. The first part of the reconsideration process pertains to my understandings, which are based on data and dialogue with my mentees and critical friend. In Chapter 5, I will revisit the reconsideration process to address the ways in
which the findings are connected to teacher educator practice and the literature on e-mentoring, online induction, and the induction of beginning teachers.

I begin this chapter with vignettes of each of my mentees. These vignettes of Kara, Dan, and Nancy describe their context and the nature of our work together. Following the vignettes, each assertion for action and understanding is described and supported with evidence from the data. Each assertion for action and understanding is divided into two subsections. The first subsection focuses on the challenges that are contained within the theme. The second subsection documents how I overcame, or learned from those challenges. Following the assertions for action and understanding, I describe my self-study reflections of my own e-mentoring facilitation.

**Mentee Vignettes**

Kara, Dan, and Nancy were all former UFTeach students who volunteered to participate as mentees in my self-study. Kara and Dan were both first-year science teachers. Nancy was beginning her second year. Prior to the first interview, I asked them to think about two specific teaching practices that they felt needed improvement based on their district’s instructional framework. These teaching practices were the focus of our work together. The mentee vignettes below provide context related to their background, experience, and my familiarity with each mentee. Furthermore, this section provides an overview of my work with each mentee.

**Kara**

Kara, who identified as a white female, was a first-year middle school science teacher at the time of my study. In the UFTeach STEM teacher education program the year prior, I was her instructor and internship supervisor for the capstone “Apprentice Teaching” course. For the 10-week internship course requirement, Kara taught high
school chemistry and International Baccalaureate (IB) physics. Upon graduation, Kara accepted a position at Achieve Middle School, which is a charter middle school located in a high-poverty downtown area of a large city in the Southeastern United States. The charter school organization to which her school belonged prided itself on educating under-served student populations. In 2015-2016, the Florida Department of Education (FDOE) reported Achieve Middle School as 100% non-white and 100% economically disadvantaged.

At the time of my study, Kara taught seventh grade physical science classes at Achieve Middle School. I learned during Kara’s first interview that her charter school organization did not have a teacher induction program (TIP) for beginning teachers. However, her school did provide mentoring support for all teachers. Interestingly, Kara’s mentor was her principal, Mr. Johnson. She explained that “as a mentee I’m supposed to separate that. He’s my mentor that happens to be the principal. Not the principal is my mentor” (Interview 1). In addition to mentoring novice teachers, Mr. Johnson also mentored veteran teachers to build a supportive environment. Kara explained to me that Mr. Johnson primarily focused on helping her reach school-based goals.

Kara shared with me that she wanted content-area reading and problem-based learning (PBL) to be the focus of our work together. She chose content-area reading because she wanted her students to “engage with different texts” and so that the “close reads have meaning to them” (Interview 1). Regarding PBL, Kara stated, “I want a very engaging curriculum throughout the year and I know to plan a year of PBL is very difficult” (Interview 1). Once her school year began, I realized I could not begin working with Kara on these two teaching strategies until she was more settled in her teaching
job. Kara seemed to have difficulty adjusting to her students and the demands of full-time teaching. She required emotional support and help with her most immediate needs, such as planning learning activities for lessons. I was comfortable with my decision to not work right away with Kara on the two teaching practices because I felt that she needed this support. During our weekly video conferences, I actively listened to her concerns and sometimes gave her advice based on my past high school teaching experiences. I did not begin working with Kara on the two teaching strategies until week five. She decided it would be more beneficial to change one of her teaching strategies from content-area reading to differentiated instruction because she was already receiving professional development with content-area reading. Differentiated instruction was an instructional approach that Kara had limited experience with in UFTeach and her principal wanted her to begin planning and implementing that instructional strategy in her classroom.

In October, we started focusing on differentiated instruction because Kara was more settled. Initially, I uploaded several resources for her on the Florida STEM TIPS platform. During video conferences, we discussed how to plan and implement differentiated lessons. Kara participated in weekly video conferences; however, her activity on the platform stalled due to technical issues that she was experiencing. After four weeks of trying to resolve the problem, I learned that a setting within the platform was accidentally changed which resulted in limited access.

In November, our work together shifted to PBL because we only had one month left of online induction. We wanted to ensure that we had enough time to plan and implement a PBL unit. I had limited experience with PBL myself, so this type of
instruction was going to be a learning experience for both of us. During the planning stage, Kara and I had three productive video conferences where we generated ideas and developed plans. We used the “Docs” writing tool housed on the platform to collaborate. Unfortunately, the action items that Kara assumed responsibility for were never completed. Later, Kara explained to me during the final interview that only some of the plans that we had developed were implemented. She stated, “I started it, but then I modified it. . . . instead of doing the two sides and having a debate, I am going to have them write either a rap or a spoken word.” Toward the end of the self-study, I was disappointed that Kara did not complete the parts of the PBL unit that she had committed to.

Initially, I was optimistic that the PBL unit we had planned together would yield multiple opportunities for video analysis on teaching with the Torsh TALENT tool. Although Kara had not completed planning her PBL unit, I was still counting on her to record some of her lessons before online induction ended. Unfortunately, Kara did not follow through. It seemed like Kara was running out of steam when she stated, “We had 21 kids who were put in suspension because they earned three or more detentions in a week. . . . I don’t know what was going on with them and then I have been exhausted. . . . I don’t have the energy” (Interview 3).

For Kara, mentoring focused on planning for differentiated instruction and PBL. In the final interview, Kara mentioned that the resources that I provided helped her the most. However, she often did not follow through with plans which hindered our progress together.
Dan

Dan, who identified as a white male, was a new high school science teacher at Opportunity High School which was in a large city in the Southeastern United States. In 2015-2016, the FDOE reported Opportunity High School as 42% non-white and 42% economically disadvantaged. During my first year as a graduate assistant in the UFTeach program, I assisted with the first course in the program, which was called “Explorations in Teaching Secondary Mathematics and Science.” Dan was a student in the course and I had the opportunity to observe him during two of his three classroom lessons that were required for the course.

Dan taught a mix of standard physical science classes and IB physics classes. His physical science class was diverse and most of his students came from low socio-economic backgrounds. His IB students, on the other hand, were primarily White or Asian American. Dan was hired shortly before the first day of school for the students at Opportunity High School. Consequently, we started online induction one week after my other two mentees because he needed some additional time to get settled into his new apartment and classroom.

I learned that Dan’s school district did not have a formal TIP. However, he did have an informal mentor from his department. He frequently ate lunch with his mentor, Mrs. Sampson. She primarily supported Dan by helping him get organized, and she was available in the event he had school-related questions.

Unfortunately, I was not able to use Torsh TALENT with Dan because his school district restricted me from videotaping students. However, I still had a handful of tools at my disposal that I could use during online induction such as video conferencing and our online private collaboration group.
Over the first several weeks of online induction, it was apparent that Dan was not ready to begin working on professional learning. Dan often seemed exhausted during our video conferences, and I learned it was not uncommon for him to stay at his school until 7:00 PM in the evening.

After reviewing his district’s instructional framework, Dan decided to focus on student engagement for his physical science course and unit planning. During interview one, Dan shared with me why he chose student engagement in his physical science course. He explained that his supervisor said, “don't worry about innovating with them right now. They are your lowest priority.” Dan was charged with increasing achievement in the IB courses. However, Dan did not want to continue teaching through worksheets in his physical science class and dismissed the suggestion from his supervisor. He believed that his physical science students deserved the same level of engaging curriculum as his IB students. In the second interview, Dan stated, “I think the major thing is I am sure after four chapters the students are very tired of those worksheets. . . . I don't know, there is not a lot of innovation going on.” It was at this point that I started helping Dan find some more engaging learning activities for his physical science class. In late September and early October, I shared with Dan a variety of resources, lesson plans, and strategies to engage his physical science students. Dan reviewed and implemented some of the items that I provided him on the platform. For example, Dan used the Socrative online assessment tool to help his students review for an upcoming summative assessment. During a video conference in early November, Dan mentioned that he liked Socrative because the scoring reports gave him a comprehensive picture of student learning.
Later in online induction, Dan and I worked together to develop two unit plans. In UFTeach, Dan was required to complete one unit plan in the final course of the program using the Understanding by Design (UbD) framework (Wiggins & McTighe, 2005). However, even after that one lesson, Dan did not feel completely comfortable with the framework and wanted to extend his learning from UFTeach into our work together. During the second half of online induction, we turned our attention from student engagement to unit planning. We first planned a unit on forces. My content knowledge related to physics was limited, therefore, I mostly helped Dan better understand the UbD unit planning framework. During the unit planning process, I felt very uncomfortable about my lack of physics content knowledge. I feared that Dan would think that the work we had done on the unit plan was a waste of time. I was more helpful to Dan during our second unit plan on chemical reactions. Dan and I collaborated on the unit plans during our video conferences, but he often did not follow through with parts of the unit plan that he committed to completing.

For Dan, mentoring consisted of providing him with a wide variety of engaging learning activities for his physical science class, as well as developing unit plans. In the final interview, Dan stated that the resources that I provided him were “very beneficial”. According to Dan, I helped him “both from just an actual education standpoint and from a mental health standpoint.”

Nancy

Nancy, who identified as a white female, was a second-year teacher at Success Middle School. I previously knew Nancy through her involvement in the UFTeach peer mentoring program. She also participated in another one of my research studies prior to this dissertation. Success Middle school was in a medium-sized city in the Southeastern
United States. In 2015-2016, the FDOE reported Success Middle School as 53% non-white and 49% economically disadvantaged. Nancy taught both standard and advanced courses.

During Nancy’s first year, she was assigned a school district mentor. She met with her mentor, Mr. Jones, on a weekly or bi-weekly basis. Mr. Jones was a veteran English language arts teacher. Although Mr. Jones had limited science content-area knowledge, she found his pedagogical support invaluable. In the initial interview, I learned that he modeled teaching strategies for her and they co-taught some lessons together in her first year of teaching. In year two, Nancy was not provided any induction or school-based supports. Nancy seemed more confident and optimistic going into her second year. She had established classroom management and was ready to focus on adding more engaging learning activities to her curriculum.

Nancy decided that her focus during online induction would be planning and implementing engaging inquiry-based science activities and integrating technology in the curriculum. During interview one, Nancy expressed how she aspired to plan more engaging inquiry-based science activities:

I’d like to work on doing more cool science labs or integrate the scientific method more throughout the year. . . . It would be nice to get back into that and you know really focus on that throughout the year.

She aspired to improve the quality of her curriculum to increase student engagement and learning. Nancy also believed she lacked skills related to integrating technology in the curriculum. I was especially excited to help her build knowledge and skills in that area. While e-mentoring her, I was also teaching the “Integrating Technology in the Secondary Curriculum” course at the University of Florida. Teaching this course
provided me with a vast array of strategies and tools that I could draw on to help her meet her goals.

Before we engaged in professional learning on the two teaching practices, Nancy first needed support with increasing student participation and how to teach English language learners (ELLs). First, I provided Nancy with resources and advice on how to give the quiet students in her class more opportunities to participate in small and whole group discussions. Second, Nancy had a new student added to one of her classes who did not speak English. At the time, Nancy was at a loss because she had no teaching experience with ELL students. I provided Nancy with a variety of ELL strategies that she used with that student.

In October, I introduced “try-its” with Nancy. A try-it involves planning and implementing a new strategy in the classroom and then reflecting on it afterwards. During our weekly video conferences, Nancy and I would identify a try-it related to the two teaching strategies that she wanted to work on during online induction. One of the try-its involved planning and implementing a lesson that required her students to make a product with the Gizmos digital poster tool. Nancy typically followed-through with the try-its.

I had the most potential to incorporate video analysis on teaching with Nancy. In retrospect, I should have started video analysis on teaching with Nancy much earlier in the self-study. I did not anticipate that so much time would be required to receive principal approval and obtain parental permission. Nancy did manage to upload one lesson video to the Torsh TALENT platform. During the last week of online induction, I provided Nancy with time-stamped feedback and summary comments. In addition, I
encouraged Nancy to include self-reflective comments, but I never found evidence on Torsh TALENT that she had followed through.

For Nancy, mentoring focused on technology integration in her curriculum and planning engaging science activities for her classes. In the final interview, Nancy shared with me, “I think that it was good to be exposed to different websites and then virtual labs and things that I otherwise wouldn't have seen or tried.” Furthermore, Nancy commented that she valued that our mentoring forced her to spend time doing things she might not have spent time doing, like try-its or adapting lessons after feedback. Our e-mentoring partnership seemed to push Nancy to try new things to improve student engagement and academic achievement.

**Self-Study Assertions for Action and Understanding**

Key insights were gleaned from the data collected during this self-study. Through reflections of my own practices and interactions with my mentees, the assertions for action and understanding, or findings, emerged from the data which clarified my understanding of the induction of novice teachers based on my experiences e-mentoring on a university-sponsored online induction platform. These assertions for action and understanding are described in terms of the challenges and how I overcame, or learned from those challenges. Since e-mentoring on a comprehensive online induction platform was a new experience for me, I dealt with new challenges and had to make decisions to address those challenges. In addition, through collaboration with my mentees, I gained a better understanding of the obstacles that they encountered as novice teachers. During data analysis, these challenges were prominent in the data that were collected.
Challenge #1: This was Voluntary Online Induction Support, and These Novice Teachers had Other Things Competing for Their Time

Prior to this self-study, I was familiar with the potential benefits of online induction, but lacked first-hand experience with e-mentoring in an online induction program. The online induction support that I offered my mentees was strictly voluntary and supplemental to any induction supports that they were receiving in their schools. Therefore, my mentees were not required to participate in my online induction program. Voluntary online induction is much different than a university-sponsored online induction program that has been adopted as a required component of a comprehensive school district TIP.

During participant recruitment, I learned that the recruitment of mentees in university-sponsored online induction programs requires persistence with school districts and principals. My goal was to recruit two first-year teachers and two second-year teachers. After mentee recruitment, I ended up with two first-year teachers and one second-year teacher. During mentee recruitment, I faced some obstacles. By early August, I only needed one more second-year science teacher. There were still two second-year mentee prospects who I was trying to recruit. I was optimistic that one of those prospects would round out my team of mentees. One of these teachers never responded to my inquiries. This dumbfounded me because I had a collegial relationship with this individual when she was a student in the UFTeach program. In 2014, she served as a valuable participant in another research study that I conducted. Additionally, I had worked closely with her for two years when she served as a UFTeach peer mentor. Since my self-study was voluntary, there was not much more that I could have
done to convince her to participate. It is possible that she felt that online induction would take too much of her time.

The other second-year mentee prospect expressed strong interest in participating in my self-study. She was a former student of mine in the UFTeach program. Although we received approval from her school district’s research department, her principal denied the request to participate in the research study. The prospect’s principal believed that the online induction activities would unnecessarily increase her workload. The following excerpt from my Week 1 Memo illustrates my frustration during the mentee recruitment phase of the self-study:

> It is unfortunate because I was going to support her efforts in the classroom by helping her improve through online induction. Although things did not pan out, it was not for a lack of trying. I will still be able to carry on with my study with three participants. I learned that recruiting teachers for research can be a frustrating endeavor. Principals can be very protective over their teachers.

This situation serves as another example of the challenges associated with voluntary online induction.

At the onset of the self-study, the three mentees that I had recruited looked forward to the additional support that I was offering. However, soon Kara and Dan seemed overwhelmed in their new teaching positions. Early in our mentoring partnership, Kara wrote, “Sorry I’ve been MIA, I’ve been struggling a lot the past two weeks” (8-26-2016 Email). She also stated, “I literally start my day like this [lack of control in the classroom] every day and it’s such a bad way to start my day and it’s so hard for me to reset myself” (9-1-16 Video Conference). Dan never discussed being overwhelmed in the video conferences, but he frequently appeared to be exhausted. He explained why he lacked engagement during our video conferences when he said, “It's
hard. . . . some days you have been working for 12 hours you really don't want to bother with this. . . . it's just like your tired and don't want to” (Interview 3).

As the self-study progressed, my mentees sometimes did not complete tasks or respond to my inquiries on the platform. This was particularly the case with my first-year mentees. On one occasion, Dan emailed me to inform me that he could not participate in a video conference because of a social engagement. In that 12-6-16 email, Dan stated, “I'll try and add a few more things to the unit plan to complete it, but I'm pretty swamped because I missed the last two days of the week for training.” Unfortunately, he did not make any additional changes to the unit plan. In another example, I received an email in December from Kara informing me that she could not meet for our weekly video conference. She stated, “Totally thrown in a loop. They changed the schedule on us today for a band concert field trip.” In response, I asked her to let me know if she needed any help with her PBL unit that we were planning together. Additionally, I asked her to record one of her lessons on the Torsh TALENT video analysis platform. Unfortunately, Kara did not follow through with my requests. Besides cancelling meetings or not following through with tasks, Kara and Dan sometimes seemed unengaged during our weekly video conferences. In week seven, I wrote:

I was a little put off during my video conference with Kara. She was conferencing with me on her mobile device and was setting up for class as she spoke with me. I could tell she was busy and unfocused so I asked her if we should reschedule. (Week 7 Memo)

Based on my secondary teaching experience, I understand the time pressures a new teacher must contend with. Kara and Dan worked with students who came from low SES communities. Many of these students needed additional one-on-one instructional support. Furthermore, neither of them worked with an experienced on-site
subject-area mentor who provided regular instructional support. It is not surprising to me that these new teachers did not follow-through on tasks. As these examples show, Kara and Dan had so many challenges on their plates that the mentoring activities we had planned were often the first thing to go. While this was hard for me, especially because it was my dissertation research, the fact that this was a self-study helped me reflect on the issue more objectively than I might have if reflection had not been built in. Through S-STTEP, I learned that voluntary online induction programs may hinder full mentee participation because it is easy to ignore when teachers face other demands on their time.

Conversely, my second-year mentee, Nancy, was highly engaged in online induction. She had a full year of teaching experience under her belt, and seamlessly settled into the school year. Following week 9, I reflected on Nancy’s participation level:

I am so excited that Nancy is active on STEM TIPS and is engaged during video conferences. She is also very open to trying new things. I noticed that she does not seem as overwhelmed in the classroom as Dan and Kara. (Week 9 Memo)

Nancy recognized how our e-mentoring partnership was helping her improve practice. After week 10, I reflected on the possible reasons why Nancy seemed more vested in online induction:

She seems to be my shining star within my group of mentees. I am still surprised that she is the most engaged out of my mentees. As I mentioned last week, she does not have any one else to bounce ideas or provide her with new ideas on a regular basis. Dan and Kara have mentors within their schools that can do that for them. (Week 10 Memo)

The level of support that Nancy received from her school and school district changed from year one to year two. I was her only mentor at the time of the self-study. It seemed that Nancy valued our mentoring partnership. During the second interview, she stated, “I
think it really helps if you can bounce ideas off someone or they can give you some advice.” She also mentioned that working with me allowed her to, “try new things” and “talk with someone else”.

During the weekly video conferences with my mentees, I made a concerted effort to lend support beyond the two teaching practices that we were focusing on. We frequently had discussions that centered on issues related to classroom and time management. I made it clear from the beginning that I was willing to support them in any way to help them be successful. Early in the self-study, I decided to postpone professional learning on the two teaching practices until they were ready. When we proceeded with professional learning, I tried to be understanding if they did not follow through with something that they said they would do.

**Addressing Challenge #1: Engaging in Reflection and Collaboration to Determine How to Help Teachers When They are Faced with more Pressing Issues than Participating in Planned Online Induction Activities**

Throughout the self-study, I reflected on my challenges and decisions in my weekly memos. Reflection was a therapeutic method for addressing the challenges associated with the voluntary online induction. During week four, I reflected on my concerns related to Kara:

I am concerned about Kara. She is teaching at a charter school that has a large number of students who receive free or reduced lunch. . . . Our video conference for this week was canceled because she had two meetings with students regarding classroom behavior. During our first two video conferences, she mentioned that she cried a couple of times. . . . Her experience so far seems reminiscent of my first month as a teacher. I think that being a listening ear and showing empathy will help our mentoring partnership. Psychological support should not be overlooked in e-mentoring. (Week 4 Memo).

This excerpt illustrates how reflection helped me sort through Kara’s difficulties in the classroom. Reflection was also a means for generating new ideas as it related to my e-
mentoring practices. After helping Kara and Dan deal with the chaos of their first few weeks of teaching, I reflected on how I could better motivate them:

It [school visit] is a good opportunity to see their classrooms and schools. In addition, these visits provide an opportunity to give them something to lift their spirits. Gifts can also help build the e-mentoring partnerships. These tokens don't need to cost anything. (Week 3 Memo)

Dialogue was another key strategy for helping me overcome the problematic nature of voluntary online induction. While following the S-STTEP methodological approach, I met regularly with my critical friend, Susan, to gain a deeper understanding of my e-mentoring practice. Furthermore, dialogue with others can help self-study researchers to develop better understandings of the teaching practice under investigation (Beck, Freese, & Kosnik, 2007). These meetings provided me with an opportunity to receive feedback from a colleague who challenged and supported my decisions, interpretations, and findings. Additionally, my Critical Friend Journal and Weekly Memo reflections helped me process what was discussed during our meetings.

My meetings with Susan afforded me the opportunity to share my ideas regarding how I wanted to e-mentor my mentees following the period of adjustment at the beginning of the school year. During one critical friend meeting in early October, I asked Susan if “try-its” would be a good strategy to use with my mentees. As described in the “Mentee Vignettes” section, a try-it involves planning and implementing a new strategy in the classroom and then reflecting on it afterwards. Try-its is a strategy that one of my professors used in a master’s degree course in classroom management. In that class, we were required to plan and implement a classroom management try-it once a week. Following each try-it, students in the course reflected on the experience in an online discussion forum. On a personal level, I found that engaging in try-its was a
valuable learning experience. Some of my try-its included planning and implementing weekly class meetings with my students to help build a democratic classroom environment. I also started to include periodic student evaluations of my teaching.

Susan supported my idea and after that meeting, I began using try-its with all my mentees. I started rolling out the try-its with Nancy. The following is an excerpt from a mid-October video conference where I introduced try-its to Nancy:

And then, we can just take one little thing, try it, you know just try it once, you know, during, and it won't take any time. It's just... maybe using a new tool or... trying a new engaging idea science activity for that one class that you felt like needed a little bit more engaging science activities. Then, we can talk about how it went the following week. Does that sound good?

By week 10, I was convinced that I had made the right decision to use try-its with my mentees. In the following Week 10 Memo, I reflected on the success of the try-its:

I felt like try-its are the way to go with e-mentoring. I had such a great experience with Nancy. She told me before the interview how well her Glogster activity went. Students were engaged and it seemed like this one tool opened up many possibilities for her in her curriculum.

Later, Nancy provided validation for the try-its during the final interview. I asked her, “When you received e-mentoring support, what seemed to facilitate or help your learning during the process?” She stated, “I really liked those because it made me do them and then... being able to put them into my calendar and having a specific date of when to do it makes you actually follow through with everything.”

My meetings with Susan also helped to alleviate many of my concerns and boosted my self-confidence. The following excerpt from one of my Critical Friend Journal entries illustrates how Susan counseled me through some of the trepidation I was feeling related to working with Kara on her PBL unit:
Susan told me that taking on this challenge shows that I have a commitment to continuous improvement. Also, it was hard to ask her to pick a different teaching strategy because she was so jazzed about practicing PBL. I realized from talking with Susan that I will not always have all the answers. However, what I can do is effectively help mentees find the appropriate resources. (10-3-16 Critical Friend Journal Entry)

I learned from Susan that I do not have to be an expert on all teaching practices to be an effective e-mentor. Furthermore, I learned from Susan that e-mentoring requires some negotiation to determine how I can best help my mentees despite my own weakness areas. The following reflection illustrates how essential a critical friend is to the work of an e-mentor:

I learned that Critical Friends Groups are "critical" for self-study research. I have been able to bounce my ideas and concerns off of Susan, and her support and insights have been invaluable. I think it is important to have a critical friend or critical friend group that is comprised of members who are scholars in teacher education. (Week 10 Memo)

Entering the teaching profession is hard, especially in high-poverty contexts. The same could be true of e-mentoring beginning teachers who have low SES students. Mentors need support as do beginning teachers. A critical friend might have been that type of support for me. It is unclear how this self-study would have turned out if I had more than one critical friend. As I continue to develop an inquiry stance toward my own work in teacher education, it seems advantageous for me to seek counsel from more than one critical friend during the self-study inquiry process.

Reflection and dialogue with a critical friend did not help me solve all challenges that I experienced while e-mentoring. However, these practices were useful for managing the decisions that I had to make. Furthermore, I was able to develop strategies to address each challenge that I was faced with.
Challenge #2: E-mentoring Using an Online Induction Platform Means There is no Face-to-Face Interaction to Build Rapport

The e-mentoring I provided was designed to supplement, not replace any existing face-to-face mentoring the novices were receiving from their schools or school districts. However, I quickly realized that not having face-to-face time with my mentees was going to make building rapport a challenge, but what I didn’t realize until later was that there were also benefits to being virtual.

Kara, Dan, and Nancy were assigned mentors during their first year of teaching. However, that was the only component of their teacher induction program. Interestingly, the mentors all held different roles within the school or school district. Kara’s mentor was her principal. Dan, on the other hand, was assigned a mentor teacher from his school. His mentor was an experienced teacher who taught another science subject. Nancy did not have a mentor for her second year, but during her first year she was assigned a district mentor who worked with first-year teachers. She met with her mentor on a weekly or bi-weekly basis. His background was English language arts, not her teaching area in science.

All three participants discussed some of the ways in which virtual mentoring provided challenges as compared to face-to-face mentoring. It seems difficult for an e-mentor to develop the same level of rapport with mentees without face-to-face interaction. For example, Dan said, “I eat lunch with her and Mike every day. We can talk about things there . . . after school she comes in and asks if I need anything, or I can go over there” (Interview 1). During the initial interview, Nancy described some of the instructional support that she received from her first-year mentor that would not be possible through online induction:
I taught with him . . . or sometimes he would teach one of my class periods and then I would see what he was doing and I would teach the next class period. So, I feel like I learned a lot just watching him teach too because I don't get to observe the teachers especially when they are with my students that I struggle with sometimes.

I learned from my mentees that there were some similarities between e-mentoring support that I was providing and the face-to-face mentoring support that they were receiving at their schools. Dan described both types of mentoring partnerships as “someone who is there that has been around the block and can give me advice on things” (Interview 3). In the initial interview, Kara described how her traditional mentor was “encouraging” and “supportive”. During the second interview, Kara described our mentoring partnership similarly as “the feeling like someone else cares about what I am doing.” Nancy liked that because it was “cool to look at certain strategies and see how they played out and how they worked” (Interview 1). Nancy also had the opportunity to try engaging science learning activities and integrate technology in the curriculum during online induction.

Through communication with my mentees, I learned that traditional mentoring and e-mentoring partnerships both provide professional and emotional support. Furthermore, traditional mentors and e-mentors provide novice teachers with an opportunity to learn, implement, and receive feedback on new strategies. The lack of face-to-face contact with e-mentoring was limiting. It is much more difficult to develop mentoring relationships. There are also things that e-mentors cannot do including modeling and co-teaching. I knew this was a challenge I would need to address, but I also learned that virtual mentoring has benefits.

The lack of face-to-face contact also made it challenging to for my mentees to interact with each other on the “Online Induction Community”. I used this collaboration
group solely for posting announcements that applied to the aggregate group of mentees. The collaboration group was also meant to be a designated space on the platform for mentees to collaborate with one another, pose questions, and share concerns.

Overall, the “Online Induction Community” was ineffective. None of my mentees posted a comment for the others to see on the collaboration group. Only on a few occasions did a mentee “Like” or reply to one of my postings. During this self-study, I reflected on this lack of involvement:

My mentees teach in different cities and did not know each other. In addition, I have one mentee that teaches in a high school setting, while the other two teach in middle schools. That is why I think there is not a lot of collaboration or sharing of resources on that discussion forum. (Week 14 Memo)

Based on the lack of involvement, my mentees were either too busy to use it, or they did not really value collaboration across schools. It is even possible that the lack of involvement could have been a combination of both.

My lack of experience with online learning communities could have also contributed to the lack of activity on the “Online Induction Community”. Initially, I created the community because the Florida STEM TIPS platform had this capability. During the short period of online induction, I made only eight posts in the “Online Induction Community” collaboration group. These posts mostly consisted of announcements, upcoming conference/training opportunities, or articles that applied to all my mentees. It seems that my ineffective facilitation of this community could have been contributed to inactivity on the “Online Induction Community”, rather than my mentees’ busy schedule or lack of interest to collaborate across schools.
Addressing Challenge #2: E-mentoring Allows for Increased Opportunities for One-on-One Support, but when Possible, Consider Adding in some Face-to-Face Time at the Start and Establishing an Engaging Online Induction Community to Build Rapport

The Florida STEM TIPS platform afforded me the opportunity to provide increased levels of support to my mentees, who had assigned face-to-face mentors, but were not always receiving a great deal of support from them. E-mentoring through the platform proved to be convenient for video conferencing and asynchronous communication that allowed me to interact with the teachers more often than typical mentors do. Kara video-conferenced with me weekly during her planning period. Nancy and Dan chose to schedule their weekly video conferences outside of the scheduled school day. In addition, the asynchronous private collaboration groups that I created on the platform allowed me to pose questions, post questions, provide encouragement, and upload resources at any time of day. The Florida STEM TIPS platform also provided flexibility while e-mentoring. I was able to reschedule video conferences at times that worked best within my mentees' busy schedules.

The CMC tools on Florida STEM TIPS also allowed me to structure regular meetings with my mentees during online induction. Establishing a specific day each week for a video conference may have held my mentees more accountable for following through with action items discussed from previous video conferences or asynchronous discussions. During the third interview, Dan discussed how video conferencing held him accountable during online induction:

To be honest, just the fact that we had a weekly meeting or some checkup. Like there is some accountability there probably helped the most. Because if this was something where you just laid it all out at my feet and said ok do this stuff, I probably wouldn't have done it just because I have so many other things I have to constantly worry about.”
I also felt that video conferencing held my mentees accountable to looking at my postings on the platform. On September 26th, I wrote in my Critical Friend Journal, “I feel like I am posting things to help mentees with their immediate needs and/or two teaching strategies, but they do not seem to be looking at anything until right before the next video conference.” Although there was a delay in them reading my comments, the platform allowed me to track their activity and confirmed that they were reading them.

Early in the self-study, I realized that some face-to-face interaction would be beneficial and would even be possible, considering my mentees taught in schools located within two hours of the University of Florida. I determined it would be important to make at least one face-to-face visit with my mentees during the self-study. These visits were scheduled to further build the mentoring relationship and to help me understand their teaching context. In this Running Journal entry, I detailed my experience visiting Achieve Middle School:

What an amazing visit! . . . First, she took me on a tour of the school. The building was once a greyhound track. . . . After the school tour, Kara took me to her classroom...I was enthused to see that every desk had a Chromebook sitting on it. She also had plenty of board space and an LCD projector. Kara showed me how she used Chromebooks in her class. Primarily, Kara used the Chromebooks to administer exit slips with the help of a learning management system. There seems to be a lot of potential for incorporating Chromebooks in the curriculum. I was impressed that the principal stopped by Kara’s classroom to meet me. . . . He seemed very supportive of Kara and online induction. . . . Mr. Johnson wants outside institutions and organizations to be involved with his school, and he encouraged me to visit any time and observe classes. (9-13-16 Running Journal)

Although Kara described her teaching context during interview one, I gained some valuable insights from the visit that I did not expect. I did not realize that Kara had a class set of Chromebooks to use with her students. This opened more possibilities related to the two teaching practices that we were going to work on during online
induction. Furthermore, after speaking with the principal of Achieve Middle School, I learned my e-mentoring partnership with Kara was supported.

I also gained more perspective related to Dan’s challenges when I visited his classroom at Opportunity High School. Following Dan’s visit, I reflected on what I learned from my visit:

There were also little details that I would never have known unless I visited his classroom. For example, I noticed a counter with approximately 10 sets of worksheets for his physical science class. It was easy to understand why Dan identified needing engagement strategies for his physical science class for one of the two teaching practices that he wanted help with this fall. I would like to work hard on weaning him off the use of worksheets for that class. The lack of engagement may be another factor why attendance is poor in his physical science class. (9-12-16 Running Journal)

While visiting Dan’s classroom, I also noticed that he had his own laptop cart. This opened a new world of possibilities to boost student engagement and achievement.

I visited Nancy at Achieve Middle School a few times in the past when I observed UFTeach students lead classroom lessons. When I was there for that purpose, I dropped by Nancy’s classroom to check-in with her. Therefore, I did not learn anything new from my visit during online induction, but it did help in building that mentoring relationship. She also took some time to show me her classroom. During the video conferences and interviews, my mentees never mentioned how my visit helped them, nor did I ask specifically. However, I believe that my face-to-face visit helped build rapport with each mentee, because it helped me understand them so much better.

Although I did not overcome the challenges of my “Online Induction Community”, I did learn how to make these communities more engaging for mentees. Most importantly, it seems like I should have waited until there was a perceived need from my mentees before developing an online learning community (OLC). Also, I learned some
other uses for the community through dialogue with my mentees. In the final interview, Nancy described how her mentor during her first year would periodically email strategies to her when she stated, “he sent more common strategies that I would be more aware of as a second or maybe even a fifth-year teacher, but didn't really know of as a first-year teacher.” This concept of sharing strategies could be applied in the online community, and might boost participation if mentees found the tips valuable or helpful.

Effective facilitation on an OLC is critical. My eight announcement posts on the “Online Induction Community” were not engaging, nor did they stimulate collaboration. A major part of facilitation on an OLC is building rapport among the mentees. Kara, Dan, and Nancy were all students in the UFTeach program; however, they did not know each other prior to online induction. I missed opportunities to build rapport such as setting up introductions. This is a practice that I was very familiar with having completed an online graduate degree program in 2013. I was naïve to think that my mentees would collaborate with each without having met or being introduced to each other. Engaging mentees and building rapport among mentees on an OLC may also require that I initiate dialogue by pose questions or group challenges.

**Challenge #3: The Timing of E-Mentoring May Need to be Adjusted So Beginning Teachers Can Acclimate to Teaching and Online Induction**

My mentees had to deal with numerous challenges at the beginning of the school year. The first-year mentees struggled to adjust to teaching full-time. Most of my efforts during the first month were spent advising them with classroom management and providing emotional support. These challenges caused me to reevaluate the focus of my mentoring activities with them. Initially, I planned to work with each mentee on two
teaching strategies that they identified as needing improvement, but this was delayed until October so that I could assist them with their most immediate needs.

Kara, had difficulty adjusting to the fast-paced school environment and adjusting to unanticipated changes in the school schedule. She mentioned during the final interview that in her school, “Things literally change in like two seconds.” She seemed to struggle the most with the emotional stress of teaching. For instance, Kara admitted during the third interview that she underestimated how difficult teaching full-time would be. She referred to her experience as “being in shambles all the time.” At the beginning of the semester, it seemed that Kara was on an emotional rollercoaster. Kara mostly experienced challenges related to parents and students. During one of our early video conferences, Kara explained how a parent showed up at her room and confronted her about an issue related to her child:

I cried at school yesterday. . . . Luckily, there were adults around and they like swooped into my room. Another one swooped me into an empty room. And then I just broke down. It’s a very low class. And they don't get along. . . . I don't know how to handle that. I just broke yesterday. (9-1-16 Video Conference)

Although Kara gained a wealth of teaching experience in the UFTeach program, she often experienced frustration because things did not always turn out the way she expected them to. By interview two, Kara realized that it was unrealistic to be a perfectionist in the classroom:

Overall, it has been going really good, but it has been very hectic. . . . I feel like there is a lot that I didn't expect coming in to it. There has been a lot more challenges than I thought there was going to be, but I made it. I am alive. . . . I think also just resetting at the end of every day. So, like realizing that what happens here needs to stay here and like work really hard, and even if things don't turn out the way I wanted them to turn out, that doesn't mean that I am doing anything wrong. . . . so like going through that like mental like process has been difficult. . . . and I am still learning, but it is better than it was at the beginning of the year.
Like Kara, Dan also seemed to have difficulty adjusting to the unexpected changes during the school day. During the final interview, Dan stated “everything is always unexpected.” Dan managed to keep his emotions in check, but he did have some other challenges to contend with. During interview two, Dan stated that “a lot of the struggles I have been having are not things that I can directly affect, so either it is just mandates given to me by my higher ups or students not coming to class.” Dan’s “Physical Science” classes primarily consisted of underperforming low SES students. In the initial interview, Dan discussed how he was faced with a challenge related to enforcing the dress code for students in that course:

Today, we were supposed to enforce the dress code, and I noticed that some of the kids were out of dress code, but not by much. . . . Some of these kids do not have other outfits. So, they can't even afford to go into dress code. So, I don't knock them for it unless it's a big problem. That was a pretty big indicator for me that it was a poor demographic.

In another example, Dan complained to me about a time-consuming task that he was feeling pressure from his administration to complete. He stated, “I have to examine how I have been doing and what has been working, but within that um Marzano framework. . . . it is more tedious than difficult. I just got to sit there and do it” (9-28-16 Video Conference).

The challenges experienced by Nancy, who was in her second year of teaching, were different from those faced by Kara and Dan. Nancy seemed more confident and optimistic going into her second year. Toward the beginning of online induction, she stated, “It definitely feels better going into year two. And feeling a little more organized. And I like having new kids. I kind of feel like it's a fresh start again” (8-31-16 Video Conference). By the second interview, Nancy’s frame of mind had not changed:
It has been going well. I think it also... there is also that part of how it is still the beginning of the school year. You know, but I have enjoyed having new kids and having that fresh start. That has been fun to you know I guess start over and have better procedures and have kids that so far I don't have a whole bunch of like really large behavioral issues like I did like last year. So, it has been nice. And it has just been fun like implementing new things. Trying new things as well.

Most of Nancy’s challenges dealt with individual students. For example, after the school year started, a new student who did not speak any English was placed in her class. Nancy was at a loss because she had no experience with students who were English language learners. During a video conference, Nancy explained her challenge:

I don't know what I am going to do with her... I give her some vocab to do today, but the thing is she's not really understanding what she's writing... I am trying to figure out how I can slowly do it... Ideally, I would like her to be learning science, but I mean I feel like I have to start with just basic English first or something. I mean I feel better at least you know there is a student that speaks Spanish so he can help translate things for her and things like that... well, do I give her things that are fully in Spanish every once in a while, to help her learn some science and also try to help her learn English a little bit. Or, is there like... I am just wondering like there is one specific thing I should be working on at this point. English or science? (9-21-17 Video Conference)

Based on the data that was collected, my first-year mentees were struggling to adjust to their new teaching positions. For the first time, they were teaching on a full-time basis and were implementing their own classroom procedures, adapting to the school culture, and developing relationships with a new group of students. Conversely, Nancy had already survived those first-year challenges.

Early in the self-study, I realized that it was not practical to launch into professional learning right away because my mentees needed at least a month to adjust to the new school year. My first-year mentees required additional guidance with their most immediate needs. Therefore, it took longer than expected to use Torsh TALENT for video analysis on teaching. In early October, I sent individual posts to Kara and
Nancy regarding the use of Torsh TALENT for video analysis on teaching. I was not able to use this tool with Dan because his school district restricted us from videotaping students. It took longer than expected to get Nancy acclimated with Torsh TALENT. Kara seemed to stall with registering for the tool. In addition, I did not get the sense that she was going to follow-through with videotaping a lesson. She had to receive principal approval, register on Torsh TALENT, and receive permission slip from the parents of every one of her students. Despite the slow start, though, Nancy could see the benefit of this tool, and wished we had begun sooner. Nancy explained in interview three:

I guess maybe just having me record my lesson earlier. It would be nice to have you observe one of my classes . . . but just to give feedback on specific things. So, if I like recorded my worst class and then you could go through and see like what I am doing wrong or what I could fix or you know things I am not seeing.

Using a comprehensive online induction platform proved to be more challenging for the teachers to navigate than I initially anticipated. Early in the self-study, I realized that just because my mentees were millennials, does not mean that they can quickly master new technology tools. After week three, I reflected on this challenge:

I also learned that it is necessary to spend time orienting mentees on how to use a comprehensive online induction platform. I was amazed that it was week 3 and they did not know how to use all of the features. Although twenty-year-olds are digital natives, they still need some guidance. I believe that if it takes too long to figure it out, they are not going to use the platform. That is why it is important for e-mentors to show them how easy it is. (Week 3 Memo)

During the final interview, Dan shared with me his concerns with the online induction platform when he stated, “It is kind of cumbersome to use sometimes and like there is no way the e-mentor can do anything about it.” Besides the CMC tools for collaboration, Florida STEM TIPS provided a vast collection of resources for STEM
teacher. It was discouraging that my mentees did not take advantage of this one-stop shop for lesson plans, videos, teaching strategies, and articles.

**Addressing Challenge #3: E-mentoring on a Comprehensive Online Induction Platform Requires Ongoing Support, Planning for Upcoming Video Conferences, and Time for Mentees to Become Proficient with the CMC tools used for Online Induction.**

Based on the struggles that Dan and Kara experienced during their first few months of teaching, the timing of e-mentoring may need to be adjusted so beginning teachers can adjust to their schools, students, and curriculum. It was evident that Kara and Dan needed more emotional support and help with immediate problems, rather than professional learning related to teaching practices. Although I originally planned to use video analysis on teaching tools for instructional coaching early in online induction, it was apparent that the short duration of this self-study was not suitable for introducing this tool. In retrospect, it was ambitious to introduce instructional coaching through Torsh TALENT in the fall. According to Moir (1999), new teachers experience the survival and disillusionment phases between September and December which is not the optimal time period for professional learning. Based on what I learned about the challenges of preparing to use this tool and the challenges teachers face when beginning a school year, ideally, the second half of the school year could be used for video analysis on teaching.

Limiting myself to a four-month period for online induction meant that I needed to be strategic with planning to meet the diverse needs of my mentees. At the onset of online induction, I learned the importance of planning my e-mentoring procedures. Below is an example of how I planned an agenda for online induction in my Week 2 Memo:
This week, I plan on doing the following:

- Email twice
- Focus on encouragement and helping my mentees with their immediate needs.
- Tell my mentees that I plan on visiting them in the next few weeks. I am going to provide them with a date that I will be visiting. I plan on visiting them after school and looking at their classrooms and schools. In addition, I would like to bring them a gift bag filled with University of Florida College of Education freebies.
- Finish setting up the profile pages for Dan and Nancy during the video conference.
- Prepare questions for each video conference

The weekly reflection memos were critical to the planning process. Within these weekly memos, I detailed next steps for planning.

I also used a Running Journal to jot down my ideas throughout each day. In this segment from my 9-5-16 Running Journal, I followed up with my reflection notes and prepared questions from the Week 2 Memo. I listed the questions that I was planning to ask Nancy during our next video conference:

Nancy:
- Last week, you told me that you were going to attend a training today. How did it go?
- Technology can be integrated in your curriculum through collaboration, assessment, presentation, and student products. If you were to pick one area of instruction to try new technology tools, what would it be?
- Show her some tools. See which one she is most interested in. How do you see this apply to your classroom? Have her "Try it" over the next week somewhere in a lesson. Encourage her to record her thoughts and questions.
- How did the resources I provided related to engagement help you? How do you think it influenced student learning?

In the future, I think it would be helpful to develop a template that could be used for e-mentoring video conferences. The template could include a space for an agenda,
probing questions, notes, and next steps. This simple solution would help streamline the organization of the video conferences.

Four months of online induction is also not enough time for mentees to adjust to using an unfamiliar online induction platform. My mentees primarily used the Florida STEM TIPS platform for accessing the Zoom tool for video conferencing. It was obvious that some of my mentees did not want to invest too much time on familiarizing themselves with the platform. Early in the study, I stated, “Email seems to be a better form of communication with Dan. He always seems to respond to that” (9-21-16 Running Journal). Following that reflection, I began emailing Dan more frequently. In the final interview, Nancy admitted why she preferred email over the platform, “I am not the best at checking that all the time . . . so maybe email every once in a while, or something like that could help as well just in case I forget to get on to STEM TIPS.” Emailing is a method for ensuring that mentees read information that was posted on the platform, at least for a while until use of the platform became more routine. These emails could include a summary of what was posted in the platform, as well as reminders for future meetings and tasks. It may be beneficial to introduce mentees to all the tools and then tailor use based on their preferences. Based on my experiences, it seems that e-mentors should differentiate the tools based on the mentees.

**Self-Study Reflections of My Own E-Mentoring Facilitation**

Throughout the self-study, I developed insights related to my own facilitation of e-mentoring. I documented what I learned while e-mentoring when I answered the reflective prompt, “What did I learn this week about how to mentor novice teachers?” I responded to this prompt in each of the 17 weekly memos. For example, in the Week 3 Memo I wrote, “This week, I learned that e-mentors need to be empathetic. Sometimes
mentees need a listening ear. During video conferences, active listening skills are essential for ensuring that mentees know that you are concerned about their issues.”

Later in the self-study, I wrote:

I learned that it is important to listen to video conferences right after they occur so that I don’t forget anything that they told me. In addition, it will help me figure out what I need to do to improve interpersonal communication. I learned that I have a tendency to use too many filler words. In addition, I tend to frequently repeat myself (Week 13 Memo).

The weekly memos that were used for self-reflection facilitated learning of my own e-mentoring practices.

Early in my work with the mentees, it was also evident that I was not as proficient with the platform as I originally thought. During a video conference with Kara, I fumbled around when trying to familiarize her with the platform:

Click on the red writing. Oops. . . . maybe there is nothing there. Um, that’s weird. Never mind on that one. The next thing is go to your dashboard and you can go down and you can go to. Go up a little bit and view. I wonder why. Go to View Friends. It won’t let you do collaboration groups will it? OK, never mind. Just go to Christian Legler and go down, and I guess yours appears a little different than mine. (8-27-16 Video Conference)

When training my mentees on how to use the Florida STEM TIPS online induction platform, it was evident that I was overconfident in my skill level with the platform.

My biggest technology blunder occurred halfway into online induction. A setting was accidentally changed within Kara’s platform settings which resulted in limited access. It took me approximately one month to fix Kara’s problem. During interview three, I seemed very apologetic to Kara about what had transpired:

I felt really bad because I thought I knew how to use STEM TIPS really well . . . going into this, but it has been a learning process for me too. And it was just a simple setting that I could not find. I tried looking and looking and looking several times. When you told me about the problem with STEM TIPS and it was like my fourth time looking and I finally figured it
out and I just feel really bad about that, but you know, I guess that is technology for you, you know?

As the self-study progressed, I discovered an issue related to one of the tools on STEM TIPS. I was using the Docs tool which has similar capabilities as Google Docs when I was assisting Dan with the development of a unit plan on forces within his physics course. In my Week 9 Memo, I reflected on the problem with this technology tool:

This week, I realized not all tools can work as anticipated. Both Dan and I were having issues with the Docs tool on STEM TIPS. Periodic error messages would appear resulting in us having to refresh the page to continue working. This was a problem I did not foresee until creating a product with the Doc tool.

In the previous section, I discussed how my mentees needed more time to adjust to the online induction platform. I also learned that I needed more time for hands-on practice with the online induction platform prior to initiating a formal online induction program with novice teachers.

**Summary of the Findings**

This self-study, guided by S-STTEP, provided a systematic methodology for me to examine the processes that I was involved in while e-mentoring novice science teachers in a university-sponsored online induction platform. Through this process, I know more now about the induction of beginning teachers then when I started, thus answering my first self-study research question, “How has e-mentoring on a university-sponsored comprehensive online induction platform informed my understanding of the induction of novice teachers?”

The induction of novice teachers in a university-based comprehensive online induction platform allows for more opportunities for one-on-one support than traditional
mentoring partnerships. I also learned that online induction should be stretched beyond four months. Based on my experiences, online induction should last at least through the first year of teaching. Online induction programs should be flexible and the focus should be adjusted as e-mentoring proceeds.

I also came away from this self-study with several useful strategies for e-mentoring novice teachers through a comprehensive online induction platform. These strategies provided answers to my second self-study research question, “How has e-mentoring novice teachers on a university-sponsored online induction platform informed my practice as a teacher educator?” Self-study gave me a structured approach for understanding the e-mentoring role in teacher education working toward continuous improvement. The need for reflection and dialogue with critical friends was critical for maintaining my focus and e-mentoring relationships. I also learned that initial face-to-face visits with mentees at the beginning of online induction builds rapport. Furthermore, establishing an engaging online Induction community may encourage collaboration among mentees. E-mentoring also requires careful planning for upcoming video conferences and more time should be allocated for mentees to get acquainted with the CMC tools used for online induction.

In this chapter, I identified the assertions for action and understanding described in terms of the challenges and how I overcame, or learned from those challenges. During this self-study, the voluntary nature of the online induction support that I was providing competed with my mentees’ time. To manage my way around this challenge, I engaged in reflection and collaboration to determine how to best help my mentees handle issues. Another challenge that I experienced with online induction is that it was
difficult to build rapport with my mentees due to less face-to-face contact. However, I learned that e-mentoring allows for more opportunities for one-on-one support than traditional mentoring partnerships. I discovered that initial face-to-face visits with mentees at the beginning of online induction can help in building rapport. Furthermore, I learned that careful planning must go into and establishing an engaging online Induction community. This strategy can build rapport among mentees and can add an extra layer of support. Finally, the short online induction period was found to be ineffective. The timing of e-mentoring may need to be lengthened so that mentees can become adjust to both the classroom and the online induction platform. Online induction requires ongoing support, planning for upcoming video conferences, and time for mentees to acquainted with the CMC tools used for online induction.

In Chapter 5, I will discuss how the findings are situated in teacher educator practice and connected to other research. The next chapter will also address the second part of the reconsideration process of S-STTEP methodology. Finally, Chapter 5 will include recommendations for university-sponsored online induction e-mentors and teacher education programs that plan to, or are currently partnering with, school districts to provide teacher induction support.
CHAPTER 5
DISCUSSION AND IMPLICATIONS

This dissertation explores the experiences and the knowledge that I gained while e-mentoring three first- and second-year science teachers on a university-sponsored online induction platform over a period of four months. To better understand the process of e-mentoring, I engaged in self-study research. Self-study is a research approach that enabled me to investigate questions related to my own teacher education practice. From the initial planning stages of topic identification, to connecting my findings to the literature in this chapter, I employed the self-study of teaching and teacher education practices (S-STTEP) methodology. S-STTEP allowed for me to apply a systematic approach to my self-study inquiry (Pinnegar & Hamilton, 2009).

Except for an early visit in person to each of my mentees’ schools, all mentoring activities and communications took place on the Florida STEM TIPS university-sponsored online induction platform. Video conferencing and asynchronous discussion forums were the primary modes of communication with my mentees. Transcriptions from mentee interviews and textual data from online communications constituted the bulk of the data collected. In addition, my reflections that were documented in my weekly reflective journal, Running Journal, and Critical Friend Journal were used as data for this self-study. These reflective journals provided me with valuable evidence that illustrated and documented the challenges that I experienced and the decisions that I made during this self-study.
Through S-STTEP, I methodically engaged in a process to answer two essential questions while e-mentoring novice science teachers on a comprehensive university-sponsored online induction platform. The following research questions guided my self-study: 1) How has e-mentoring on a university-sponsored online induction platform informed my understanding of the induction of novice teachers? 2) How has e-mentoring novice teachers on a university-sponsored online induction platform informed my practice as a teacher educator? By studying the processes of e-mentoring, I gained a personal understanding of the challenges involved in mentoring novice teachers during a critical time in their careers. Additionally, I learned some strategies about how to address those challenges to respond to teacher needs. This research also helped me better understand the induction of novice teachers through e-mentoring on a university-sponsored online induction platform.

In this chapter, I will discuss how my self-study findings are connected to the current literature on e-mentoring and online induction. In S-STTEP, this discussion is a component of the reconsideration process. As part of this process, the ideas that I am presenting in this chapter are situated in relation to other studies conducted on online induction and e-mentoring. Additionally, I provide implications for university-sponsored online induction e-mentors and teacher education programs.

Discussion

In Chapter 4, I described the assertions for action and understanding that emerged from my self-study research. These findings centered on the challenges that I experienced while e-mentoring, and how I overcame or learned from those
challenges. I found that the voluntary online induction support that I was providing challenging because my mentees had other things competing for their time. To manage my way around this challenge, I used reflection and dialogue with a critical friend to determine how to best support my mentees. I also found that it was difficult to build rapport with my mentees in the online environment. However, I discovered that e-mentoring allows for more opportunities for one-on-one support than traditional mentoring. I learned that initial face-to-face visits with mentees can help build rapport, and careful planning must go into and establishing an engaging online Induction community. Lastly, the short online induction period was found to be ineffective. Therefore, the timing of e-mentoring may need to be lengthened so that mentees can adjust to both the classroom and the online induction platform. Online induction requires ongoing support, planning for upcoming video conferences, and time for mentees to become acquainted with the technology used for online induction.

In the following section, I will discuss how my self-study assertions for action and understanding are connected to current literature that focused on specific aspects of online induction including the video conferencing and the duration of e-mentoring partnerships. Connections are also made between the reasons behind mentee inactivity in my study and online induction research that reveal similar findings.

My self-study research suggests the use of multiple computer-mediated communication (CMC) tools on an online induction platform contributed to increased opportunities for one-on-one support even though the lack of face-to-face contact threatened relationship development. Prior research centers on e-
mentoring with one CMC tool that is used for online induction (Bang & Luft, 2014; Dalgarno & Colgan, 2007; Donne & Lin, 2013; Hunt, Powell, Little, & Mike, 2013; Hwang & Vrongistinos, 2012; Killeavy & Moloney, 2010; Maxwell, Harrington, & Smith, 2010; McFadden, Ellis, Anwar, & Roehrig, 2014; Taranto, 2011). The asynchronous collaboration groups housed in Florida STEM TIPS allowed for flexible communication. This closely connected to Bang and Luft’s (2014) findings related to the flexible nature of the WebCT online platform used in that study. WebCT includes a virtual room for asynchronous communication between mentors and mentees that was used for posting comments and lesson planning. I also found that video conferencing was the most useful and meaningful e-mentoring tool. Video conferencing allowed my mentors and I to connect with audio and video that provided a more personal connection and allowed me to support learners who were several hours away from my location. The benefits of video conferencing in e-mentoring was also documented in a study by Hwang and Vrongistinos (2012) who explored the Quality Teachers for Quality Students (QTQS) project which was an e-mentoring platform designed to support beginning teachers who worked with English language learners. These researchers reported that teachers perceived video conferencing favorably because it allowed them to communicate with e-mentors at their convenience. The humanizing quality of video conferencing seems to add an element of accountability and immediacy that would probably not be present with asynchronous modes of communication. Weekly video conferences seemed to push my mentees to report on “try-its” and make progress on other initiatives. Therefore, planning for video conferences was found to be imperative.
I returned to the literature to understand more about one of my findings related to the challenge of voluntary online induction, and why my participants might be less than enthusiastic about participating. While that might have been obvious, I assumed that the support I was providing them (that they seemed to be lacking in their own schools) would be enough to motivate them to use the tools. What I found was a study by Jones, Dana, LaFramenta, Adams, and Arnold (2016) that reported the findings from a user survey of the Florida STEM TIPS platform. This was the same online induction platform that was used in this study. The survey was administered to secondary first- and second-year STEM teachers and measured their perspectives on the instructional support they received and student learning. Jones et al. (2016) found that lack of time was the primary reason why 33% of the teachers never logged on to the platform. As Howe (2006) and Hobson, Malderez, and Tomlinson (2009) recommended, teacher induction programs (TIPs) should allocate time for mentors and mentees to collaborate, but Kara was the only mentee in my self-study who was granted time during her school day to work with me.

Berry and Byrd (2012), also reported mentee inactivity in their study which investigated Teacher Leadership Network e-mentors who were partnered with new teachers who graduated from the University of Connecticut. They found that mentees’ hesitation to use the e-mentoring platform was primarily due to the mentees’ lack of experience in an online professional learning community. Binkley, Scales, Unruh, Holt, and Nichols (2013) also found that time and inexperience with the technology were primary reasons for mentee inactivity. Their study investigated why some first-year teachers participate in university-
sponsored online induction platforms and why others do not. These findings are closely connected to the reasons for mentee inactivity in the Jones et al. (2016) and Berry and Byrd (2012) studies. Furthermore, these findings corroborate the reasons why my mentees lacked participation.

To increase usage on an online induction platform, Binkley et al. (2013) suggested scheduling periodic face-to-face meetings with mentees. This connects to my finding that initial face-to-face visits with mentees can help build rapport. I found that face-to-face visits were very important because relationship building is critical. It seems possible that if I had added some more face-to-face meetings, then I could have continued to build rapport and possibly increase mentee engagement with online induction. I was fortunate that distance was not an issue for face-to-face visits. All mentees worked in schools located within a two hour drive from the University of Florida. Distance could pose a challenge for building rapport through face-to-face visits. The authors of that study also encouraged school districts and/or schools to allow release time and require attendance for these meetings. However, stronger university-school partnerships would be necessary for this to occur.

After encountering a variety of challenges related to the short online induction period that I planned for this self-study, I revisited Moir’s (1999) “Phases of First-Year Teachers’ Attitudes Toward Teaching”. During my self-study, I realized that it was not feasible to work on teaching practices with Kara and Dan because they required more support with immediate needs. Delaying professional learning was not detrimental to my self-study. I learned that actively
listening to my mentees, as well as providing advice and emotional support was what my mentees needed most during the first couple of months.

In hindsight, I should have spent the fall semester getting to know them and their contexts and providing emotional support. Then, I could have spent the spring semester focusing on helping them improve practice. Moir’s (1999) phases are closely connected to the challenges that I experienced with Kara and Dan. According to Moir’s visual representation of the phases found in Chapter 3 (Figure 3-1), I e-mentored Kara and Dan during the anticipation, survival, and disillusionment phases of a first-year teacher. During the anticipation phase, first-year teachers experience a period of excitement related to the school year that lasts through the first few weeks on the job. Beginning in September, first-year teachers experience the survival phase which is characterized by long hours of planning and pre-occupation with day-to-day teaching responsibilities. By early to mid-October, first-year teachers experience the disillusionment phase where the stress of the job begins to take a toll on them, and they begin to question their commitment and abilities. In retrospect, I should have waited until the rejuvenation phase to begin work on the two teaching practices with each mentee. According to Moir, the rejuvenation phase would have been the optimal time to support Kara and Dan with curriculum development, unit planning, and teaching strategies because new teachers tend to be invigorated following the winter holiday break. The rejuvenation stage generally lasts a few months which would have been ideal for working with each mentee on the two teaching strategies that they wanted to improve.
I also gained a better understanding about what my mentees needed for induction. My mentees were not receiving in their schools ongoing and multiple types of support that are typically found in comprehensive teacher induction programs (TIPs). I would characterize these programs as “basic” TIPs because these programs did not offer my mentees multiple layers of support (Gujarati, 2012). Dan lacked formal school-based mentoring. None of my mentees learned about and practiced reflective inquiry and teaching practices (Wood & Stanulis, 2009). Most importantly, my mentees only participated in teacher induction for one year. Comprehensive TIPs generally provide two years of support to beginning teachers (Gujartı, 2012). Although Kara’s TIP was not comprehensive, it did meet Wood and Stanulis’ (2009) definition of an effective TIP because it was goal-oriented and quality focused. Achieve Middle School provided Kara with ongoing feedback on her teaching practice.

The problems experienced by my first-year mentees was reminiscent of my own first semester in the classroom. It is my understanding that many teachers do not have the experience or training to teach in diverse school environments. However, prior to this self-study, I felt that the courses and field experiences in UFTeach sufficiently prepared my mentees to meet the diverse needs of their students. As discussed in Chapter 4, Kara struggled with classroom management and Dan was dealing with high absenteeism and lack of engagement. After closely working with Kara and Dan during their first semester, I believe that UFTeach should prioritize the teaching of culturally responsive teaching practices in coursework and fieldwork. This pedagogy can be defined as
providing students with opportunities to connect content to their backgrounds and interests (Mensah, 2011).

It may also be beneficial for UFTeach to integrate service learning in the curriculum. Service learning has not historically been a part of the curriculum in UFTeach. Ladson-Billings (2006a) stressed the importance of providing early opportunities for pre-service teachers to experience interacting with diverse children outside of the classroom. UFTeach students could then learn more about the characteristics and needs of children who come from a variety of backgrounds and cultural groups. These learning opportunities provide pre-service teachers with an avenue to learn more about other cultures while meeting a need in the local community. Topics such as culture, privilege, disadvantage, and power could be taught in conjunction with the service learning experience (Carter Andrews, 2009). These experiences would further support UFTeach students’ development of a social justice stance in education.

In order to establish and maintain a critical social justice focus in UFTeach, Barnes (2006) posits that teacher education programs should develop a curriculum that is systematic, cohesive, and culturally responsive. Social justice should be a thread that runs throughout every element of a teacher education program. Darling-Hammond (2010) stated that activities in the curriculum need to be closely connected to the field experience. Therefore, the teaching of social justice should be a lens that can be used throughout a program.

Although UFTeach field-based experience are situated in diverse school contexts, it may benefit this program to develop field experiences for pre-service teachers that are both long-term and in culturally diverse urban settings. Sleeter
(2008) found that short-term field placements in culturally diverse classrooms do not adequately prepare pre-service teachers for a wide variety of cultural interactions. The culminating internship in UFTeach is only ten weeks. A long-term field experience may enable UFTeach pre-service teachers to become more knowledgeable about a wide range of social, political, and economic issues that may cause a shift from awareness to a commitment to social justice (Sleeter, 2008).

**Implications for Practice**

Although the primary purpose of this self-study was to address questions related to my own teacher education practice, the findings have implications for those engaged in, or planning to e-mentor novice teachers in a university-sponsored comprehensive online induction platform. Considerations for e-mentors and teacher education programs are discussed in this section. There are four main implications from my self-study: two of them stem from the reflections on my own e-mentoring facilitation, and the other two are related to the rich possibilities that e-mentoring can provide.

**E-mentors Should Study Their Own Practice to Become Aware of Their Foibles and Areas for Growth in the Future**

While working on my doctoral degree, I had the opportunity to teach courses in the School of Teaching and Learning. In these courses, I espoused the benefits of self-reflection with the pre-service teachers who were my students. Furthermore, self-reflective assignments, such as video self-analysis on teaching allowed my students opportunities to exercise this teaching practice.
During my self-study, I documented what I learned while e-mentoring when I answered the reflective prompt, “What did I learn this week about how to mentor novice teachers?” I responded to this prompt in each of the 17 weekly memos. For example, in the Week 3 Memo I wrote, “This week, I learned that e-mentors need to be empathetic. Sometimes mentees need a listening ear. During video conferences, active listening skills are essential for ensuring that mentees know that you are concerned about their issues.” Later in the self-study, I wrote, “I learned that it is important to listen to video conferences right after they occur so that I don’t forget anything that they told me. In addition, it will help me figure out what I need to do to improve interpersonal communication. I find that in conversation, I have a tendency to use too many filler words. In addition, I tend to frequently repeat myself” (Week 13 Memo).

After the conclusion of my research, I felt pleased with my early decision to differentiate the focus of the e-mentoring based on the needs of the mentee. Based on my experiences, professional learning seems to work best when teachers have buy-in. Early in my self-study, I had each mentee choose two teaching practices to work on. This gave my mentees choice and buy-in. I operated from a place where my mentees’ views and needs mattered. This aligns with a constructivist perspective on learning. Sometimes my mentees chose teaching practices or science topics that I was not strong in, such as problem-based learning, but I was still able to access resources. I still believe that e-mentors can support beginning teachers in some areas in which they may be weak. E-mentors could also solicit help from outside content-area experts. At the beginning of any mentoring partnership, mentors may need to be upfront with
their mentees on the specific support that they can provide and determine what types of support that mentees need. Therefore, e-mentoring requires some negotiation with mentees.

After reflecting on my self-study, I realized the importance of building trust with mentees so they can be more honest about the support they need. I am not convinced that my mentees were honest in regards to their readiness to try new things. This may have to do with the positional authority that I had over them while they were in the UFTeach program. In that context, I was a person in power telling them things that I wanted them to learn, and they were required to comply. I still felt that I had some positional authority over my mentees. For example, Nancy never really called me by my first name even though I requested that she do so.

**E-Mentors Need Training on the Online Induction Platform**

Based on my experiences, I did not have adequate training on the use of the platform prior to my work with the mentees. At the onset of this self-study, I thought that I had enough experience using the Florida STEM TIPS online induction platform. I had the opportunity to use the platform for one semester with my students in UFTeach. In addition, I conducted a research study that used the video analysis on teaching tools within the Florida STEM TIPS platform. I was confident in my ability to teach my mentees how to use the platform. However, as evidenced in Chapter 4, I was unfamiliar with all of the nuances of the Florida STEM TIPS platform. As a result of my experiences, I think it is critical for e-mentors to receive structured and comprehensive training program on the platform that will be used for online induction.
Considerations for Developing University-Based Online Induction Programs

Since voluntary online induction may present obstacles, it is essential that teacher education programs develop strong partnerships with schools and school systems that employ recent graduates of their programs. This may smooth the path for teacher education programs that are working toward establishing university-based online induction as a required component of the school-based TIPs. In addition to supporting recent graduates, university-based online induction can be relatively inexpensive to develop and maintain. Furthermore, it can be used to attract new students. Once these partnerships are established, teacher education programs should communicate with schools to ensure that the focus of online induction aligns with the needs of the school. Developing relationships with school administrators will help them know that online induction is structured in a way to help meet their goals.

Introducing E-Mentoring Platforms in Teacher Education Programs

I concur with Berry and Byrd’s (2012) assertion that platforms for e-mentoring novice teachers need to be in place well before they graduate. Students would then be familiar with the platform and will have established strong relationships with the e-mentors before they become teachers. An e-mentoring platform could also provide emotional and professional support for pre-service teachers who are completing the internship requirement of their teacher education program. These platforms afford pre-service teachers with another vehicle to communicate and collaborate with instructors, mentor teachers, and peers. In this self-study, I was at an advantage because I had
established relationships with my mentees when I was a graduate assistant and instructor in the UFTeach program. However, my mentees lacked familiarity with the platform which may have contributed to mentee inactivity on the platform.

**Implications for Future Research**

The findings of this self-study inquiry and dialogue during the process opened new possibilities for future research. Kara’s principal, who was also her mentor, worked closely with her each week. At times, I found that I was helping Kara navigate some of the goals that her principal wanted her to focus on. I wonder what would have happened if I had collaborated with Kara’s principal so that I could extend the work that they were doing together. By doing so, this may have prevented Kara from being pulled in two different directions. E-mentors and on-site mentors working closely together to meet the needs of beginning teachers would help ensure that supplemental university-based online induction align with the needs of the school.

In this self-study, I learned that beginning teachers require ongoing support. Similar studies could be conducted that extend the duration of online induction through Moir’s (1999) rejuvenation phase. Alternatively, the processes involved in e-mentoring during university-based online induction could follow beginning teachers through their first two years. This research could also provide data that could contribute to a new model patterned after Moir’s (1999), “Phases of First-Year Teachers’ Attitudes Toward Teaching” that introduces the phases of second-year teachers’ attitudes toward teaching.

My critical friend, Susan, encouraged me during my self-study to use National School Reform Faculty (NSRF) protocols when reviewing student work
with my mentees. Although I did not employ protocols, there may be opportunities to explore the perceptions of e-mentors and mentees after incorporating discussion-based protocols during video conferences for the purposes of reviewing student work, long-range planning, or addressing issues related to equity. For example, e-mentors could use the NSRF “Equity Protocol” with mentees to examine student work with a critical lens. Through these conversations, mentees may gain a better understanding of their own work and how it relates to promoting equity. Alternatively, research could be conducted on how the use of discussion-based protocols in critical friend groups influences the work of e-mentors.

In the “Discussion” section of this chapter, I address my observation that my first-year mentees were not prepared to teach in a culturally diverse classroom setting. Additionally, I described some considerations for the UFTeach program related to addressing this preparation. Research could be conducted regarding preparing e-mentors in online induction programs to address equity in the curriculum with their mentees.

Concluding Thoughts

Through self-study, I gained valuable insight into the complexities of e-mentoring. E-mentoring through a comprehensive university-sponsored online induction platform is one more layer of support that can be used to turn struggles to successes, and improve teaching and learning which might lead to teachers feeling supported so they do not leave the profession. While it has benefits, there are still many aspects that should be explored, such as the comparison between voluntary and required online induction.
During the first mentee interview, I learned that my mentees did not have adequate teacher induction support from their school and school district. This is consistent with the review of the literature on teacher induction and mentoring discussed in Chapters 1 and 2. By the final interview, my mentees expressed the benefits of online induction and e-mentoring support. This too was not a breakthrough in educational research. However, my self-study does contribute to the limited research on e-mentoring and online induction of beginning teachers. Through my active participation as an e-mentor, I learned first-hand the need for effective methods for supporting beginning teachers within a comprehensive online induction platform. I am confident that my decisions and actions while e-mentoring increased the support that my mentees were receiving. As Smith and Ingersoll (2004) found, mentoring support and TIPs are critical for retaining new teachers. Hopefully, my e-mentoring can help keep these three teachers in the profession.

The findings presented in this self-study can provide teacher education programs and school districts with an authentic picture from the viewpoint of an e-mentor of how university-sponsored online induction can supplement their own TIPs. Furthermore, teacher education programs that are developing partnerships with school districts can use this research to better understand how to overcome the challenges of these relationships. The realities and processes involved with e-mentoring in a university-sponsored comprehensive online induction platform have implications for teacher educators or mentor teachers who are trying to navigate the role of an e-mentor to support beginning teachers. E-mentoring and online induction are filled with obstacles and challenges. By no means should
they take the place of traditional TIPs. I concur with the assertion from Maxwell, Harrington, and Smith (2010) that online supports should be supplemental to face-to-face mentoring and traditional TIP supports.

Studying e-mentoring through S-STTEP was an enriching learning experience for me, both professionally and personally. Teacher educators engage in self-study to learn what we do, how we do it, and how we improve it (Pinnegar & Hamilton, 2009). Based on my findings, I feel that I accomplished that. E-mentoring was a new role for me. I did not have the luxury of following a guide for e-mentors since this is a growing trend using new technologies. S-STTEP afforded me the opportunity to study in-depth a teaching practice that I needed to better understand (Hamilton & Pinnegar, 2014). Upon graduation from my doctoral program, it is unclear whether I will continue e-mentoring within a new teacher education position at another institution of higher education. However, the e-mentoring skills that I learned are invaluable for understanding the needs of first- and second-year teachers. Moreover, this e-mentoring experience has implications for my future work with pre-service teachers. Developing a platform like Florida STEM TIPS for my future teacher education students could provide them experience with an e-mentoring platform and support their efforts through their practica.

The final component of S-STTEP methodology is the presentation of my work. By publicly sharing my self-study through mediums such as conference presentations and publications, I hope to elicit conversations centered on e-mentoring and online induction. Additionally, presenting my work will build
knowledge of the intimate experience of e-mentoring novice teachers (Hamilton & Pinnegar, 2014).

In Chapter 1, I shared my difficulties as a beginning teacher at William M. Raines High School. My experiences led to questions that followed me through my doctoral studies. I wondered: Why should new teachers have to struggle for so long to be effective in the classroom? I also wondered how new teachers could be better supported through strong mentoring. Ongoing e-mentoring support through my second year would have been transformational in my development as a new teacher. More importantly, it is likely to have contributed to the success of my students.

There are vast opportunities for university-sponsored online induction featuring e-mentoring. These programs are critical for supporting beginning teachers and helping schools meet their goals. Furthermore, teacher education programs can be instrumental in helping school districts train e-mentors and develop online induction programs. The strategies detailed in this self-study can be used to help e-mentors better understand their roles during this process.
APPENDIX A
FRAMEWORK-FOR-INQUIRY

What am I interested in exploring? What do I identify as problems in my practice, where my actions do not seem to match my values (living contradictions)? What issues do I want to further understand? What do I want to learn about these interests, issues, and concerns?

In my doctoral program, I have had three years to hone my skills related to college teaching and mentoring pre-service teachers during their field placements. While there are many aspects of my teaching practice that I want to investigate, I am drawn to e-mentoring. This interest started when Florida STEM TIPS provided all students and instructors in UFTeach with access to the Torsh TALENT video annotation and feedback platform. In several of the UFTeach courses, students use video annotation and feedback for reflective assignments. Later, I decided to do a pilot study on providing video annotation and feedback. This study explored the experiences of two peer mentors in UFTeach after providing lesson video annotation and feedback focused to student teaching pairs. The results indicated that video annotation and feedback was perceived as a supportive technological tool for pre-service teacher learning. As a result of my pilot study, I am encouraged and optimistic about the potential of video annotation and feedback in teacher education and teacher induction.

I also have written some papers as part of my coursework on teacher induction programs and mentoring. These topics are important to me because I was an alternatively certified teacher who struggled during the first few years in the classroom. I felt like I did not receive effective teacher induction or mentoring support during those years. Based on the literature that I have reviewed, the process of online induction seems relatively unexplored. Online induction intrigues me because it can provide new teachers with another level of support. This is a research area that I would like to further explore. In my doctoral studies, I have had the opportunity to mentor pre-service teachers during their field experiences in local secondary schools. However, I have not yet had the opportunity to work with new teachers. Research on online induction could provide me with that experience.

How could I explore these concerns and issues? What contexts might be most fitting? Who are the most appropriate participants – me? My students?

To explore this issue, it might be best to recruit former students of the UFTeach program. These new teachers would probably be open to being mentored by me because many are familiar with me. I would probably only work with former science UFTeach students due to my background as a high school science teacher. Also, they are taking an alternative or non-traditional route (teaching minor) and may need extra support in the classroom. Also,
since they are STEM teachers, they may not have a content-specific mentor assigned to them in their HS. They might need connections and support.

<table>
<thead>
<tr>
<th>What methods might I use? What would count as evidence?</th>
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<tbody>
<tr>
<td><strong>Possible Sources of Evidence</strong></td>
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<tr>
<td>• Field notes</td>
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<td>• Mentee interviews</td>
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<tr>
<td>• Journaling</td>
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<tr>
<td>• Online asynchronous communication data</td>
</tr>
<tr>
<td>• Online synchronous communication data</td>
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<tr>
<td>• Teacher developed instructional plans</td>
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<tr>
<td>• Student work</td>
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<table>
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<tr>
<th>What work in teacher education research (or other research fields) will guide my inquiry? What beliefs are embedded in my questions? What values do I embody in my practice and research? How will I hold myself accountable? What do I expect to contribute to the knowledge base?</th>
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</thead>
<tbody>
<tr>
<td><strong>Beliefs embedded in my question</strong></td>
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<tr>
<td>• Constructivism</td>
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<td><strong>Values</strong></td>
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<td>• Trustworthiness</td>
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<td>• Transparency</td>
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<td><strong>Accountability</strong></td>
</tr>
<tr>
<td>• Thematic analysis</td>
</tr>
<tr>
<td>• Critical friends</td>
</tr>
<tr>
<td>• Multiple types of data</td>
</tr>
<tr>
<td><strong>Contribution to Knowledge Base</strong></td>
</tr>
<tr>
<td>• Process of e-mentoring</td>
</tr>
<tr>
<td>• Use of multiple CMC tools in online induction</td>
</tr>
<tr>
<td>• Self-study using technology</td>
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</table>
## Purpose

What is the purpose that you identify for your study?

The primary purpose of this S-STTEP inquiry is to examine my own development in my role as a university-sponsored online induction e-mentor using a comprehensive platform. Additionally, this research will help me better understand how online induction e-mentoring contributes to the development of teaching practices of novice science teachers.

## Definition of Self-Study

What definition of self-study do you use in the work you undertake? Where is the self situated in this study?

**Definition**

"The study of one's self, one's actions, one's ideas. . . . It is autobiographical, historical, cultural, and political . . . it draws on one's life, but it is more than that. Self-study also involves a thoughtful look at texts read, experiences had, people known and ideas considered" (Hamilton & Pinnegar, 1998a, p. 236).

The self situated in this study
- My self-study is self-focused/self-initiated (LaBoskey, 2004a).
- I will take responsibility for implementing, understanding, reframing, and improving the teaching practice of e-mentoring (Pinnegar & Hamilton, 2009).

## Definition of Self-Study Methodology

When describing your methodology, how is it apparent that you are engaged in self-study? How do you describe your methodology?

I describe my methodology as S-STTEP that was developed by Pinnegar and Hamilton (2009). This approach was specifically designed for teacher educators who want to research their own teaching and teacher education practices. The eight components that guide S-STTEP research include:

- **Provocation**
  - An idea within one’s teacher education practice that evokes interest. An exploration of the
issues, relevance, and relationship of this idea as it relates to practices and experiences.

**Exploration**
- Potential resources, ideas, and knowledge.
- Ideas are connected to relevant research literature.

**Refinement**
- Connecting background and experience to build a case for the topic of the S-STTEP inquiry.

**Identify Focus**
- The focus of the topic for the S-STTEP inquiry is introduced. In this stage, the purpose of the self-study is discussed including how the study will contribute to my own work, teacher education research base, and the greater teacher educator community.

**Design of the Study**
- Data Collection
- Data Analysis

**Reconsideration Process**
- Throughout data collection and analysis, I will undergo a process of developing understandings based on the data and my dialogue with “critical friends” who will challenge my perspectives.
- Ideas will be situated in teacher educator practice and literature.

**Ethical Action**
- This stage includes a discussion of how the S-STTEP inquiry was implemented with integrity and transparency.

**Presentation**
- Dissemination of the S-STTEP research to the public.

| **Rigorous Research Practice** | What data collection and data analysis tools do you use? How are the aspects of your methodology | Data collection – multiple sources of data (triangulation) Data Analysis - Miles, Huberman, and Saldana (2013) data analysis approach |
| Explicit Evidence | In what ways do you connect the data collected with the assertions made in your study? For example, if you said that you interviewed people, how do you display the data collected? Will the evidence you collect allow for the insights you claim? | The data collected is connected to the assertions that I made in my self-study because I used quoted evidence from the data to support each theme. |
| Authority of Experience | How do you situate the authority of your own experience in the study? How do you situate yourself in the study so that the readers (when you are ready to present your work) will accept your work as trustworthy? | • Between 2005 and 2013, I taught history and science courses at a high school located in a low-income section of Jacksonville, Florida. The student body was 99% African American and 85% of the students receive free or reduced lunch. I know the challenges involved in working in a high-poverty school and how difficult it is to adjust to a full-time teaching position. • Over the last three years, I taught undergraduate STEM teacher education courses in the UFTeach program at the University of Florida as part of my graduate assistantship. Since the UFTeach minor is an alternative teacher education program, I am deeply concerned about my students’ continued success in the classroom upon completion of the |
program. Some of the teachers that I will recruit for this self-study may have had me as a UFTeach instructor or I may have advised some of them when they served as UFTeach peer mentors. Prior to the onset of the study, it will be important for me to clearly communicate the roles and responsibilities of each party so that my mentees understand the nature of the partnership.

### Story of Self

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>In what ways is the self portrayed in the study?</td>
<td>• The self is portrayed as the participant.</td>
</tr>
<tr>
<td>Where is the self in relation to others?</td>
<td>• The other are referred to as mentees.</td>
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<tr>
<td>How is the self evident?</td>
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### Situate in Larger Literature

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
</tr>
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<tbody>
<tr>
<td>Within what research literatures do you situate your work? How do you bring depth to your understandings of your field of focus?</td>
<td>• The asynchronous collaboration groups in Florida STEM TIPS may provide flexibility and aide in the development of pedagogical content knowledge. Bang and Luft (2014) found that asynchronous communication had benefitted science teachers during online induction.</td>
</tr>
<tr>
<td></td>
<td>• Hunt, Powell, Little, and Mike (2013) found that a &quot;one size fits all&quot; approach to online induction is not effective. I may need to personalize the e-mentoring plan for each mentee.</td>
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<td></td>
<td>• The results from Taranto (2011) and Dalgarno and Colgan (2007) indicated the need for the development of an OLC. I may need to create opportunities for group collaboration to help reduce isolation and for sharing ideas.</td>
</tr>
<tr>
<td></td>
<td>• Hwang and Vrongistinos (2012) found that the use of videoconferencing in online induction benefitted instruction. The Zoom videoconferencing tool</td>
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</table>
is available for use on Florida STEM TIPS.
- McFadden, Ellis, Anwar, and Roehrig (2014) found that novice teachers do not have that skillset when using video annotation and feedback tools. I may need to ensure that I work with my mentees on their reflection skills during the duration of the self-study if I choose to use the Torsh TALENT video analysis tools on Florida STEM TIPS.

<table>
<thead>
<tr>
<th>Questions Raised in/by Study</th>
<th>In this category, you ask yourself questions that arise as you review your own work and/or engage in your study.</th>
</tr>
</thead>
<tbody>
<tr>
<td>• What is the best way to ease into online induction with my mentees?</td>
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<tr>
<td>• What are the benefits of a face-to-face visit?</td>
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<tr>
<td>• How can I motivate my mentees to frequently check Florida STEM TIPS for posts from me?</td>
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</table>
APPENDIX C
FIRST PARTICIPANT INTERVIEW PROTOCOL

Participant #: ____
Date: ___________

First Participant Interview Protocol

1. Tell me a little bit about your school.

2. Tell me a little bit about your classroom – what do you teach? What are your students like?

3. How prepared do you feel to teach?

4. What do you still need to learn?

5. How did your preparation help you become ready to teach?

6. Did you have a mentor? Did that person help you learn anything about teaching?
   a. (PROBE) If yes, ask for an example.

7. Do you have a mentor assigned to you now in your school? Describe that relationship to me.
   a. (PROBE) Can you give me an example of how you two work together?

8. What do you know about your district induction program?
   a. (PROBE) Can you describe how it works to me?

9. Prior to this interview, I asked you to think about two specific teaching practices that you felt needed improvement based on your district’s instructional framework. These teaching practices are going to be the focus of the e-mentoring. What were the two teaching practices that you identified? Why did you choose these two teaching practices?
Second Participant Interview Protocol

1. How has teaching been going for you so far this fall?
   a. (PROBE) What are some challenges you have experienced?
   b. (PROBE) What are some successes you have experienced?

2. What is working for you related to our work together?
   a. (PROBE) How do you know it is working?

3. What is not quite as helpful?
   a. (PROBE) What else might be helpful to you?

4. Describe the teacher induction supports that you are currently receiving from your school and school district.
   a. (PROBE) What is helpful to you?
   b. (PROBE) What is not quite as helpful?

5. In our first interview, we developed an action plan based on two teaching strategies that you wanted to improve during the course of the online induction that I would provide. So far, you and I have _______. Did that help you _____?
   a. (PROBE) What else do you think you need in order to get better at _____?
   b. (PROBE) How can I help you get that support?
   c. We also did ______. Tell me about that….
   d. (PROBE) What else do you think you need in order to get better at _____?
   e. (PROBE) How can I help you get that support?
Final Participant Interview Protocol

1. In general, how did e-mentoring work out for you this fall?
   a. (PROBE) What are some challenges that you experienced?
   b. (PROBE) What are some successes that you experienced?

2. Did you experience any unexpected challenges? Explain.

3. When receiving e-mentoring support, what seemed to facilitate your learning during the process?
   a. (PROBE) Can you give me an example?

4. What suggestions do you have for how e-mentors should use an online induction platform like Florida STEM TIPS in the future?

5. Can you talk a little bit about how this e-mentoring was similar to or different from your district’s induction supports?
   a. (PROBE) Can you give me an example?
## APPENDIX F
### SAMPLE OF FIRST AND SECOND CYCLE CODING

<table>
<thead>
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LIST OF REFERENCES


BIOGRAPHICAL SKETCH

At the time of this study, Christian Legler was a University of Florida College of Education doctoral candidate specializing in curriculum, teaching, and teacher education. In the spring of 2013, Christian earned a M.Ed. degree from the University of Florida. He participated in the job-embedded online Teacher Leadership for School Improvement program. Christian also holds a B.S. degree in recreation from the University of Florida.

From 2005-2013, Christian taught a variety of science and social studies courses at William M. Raines High School in Jacksonville, Florida. He worked diligently with his colleagues to transform the school out of failing status. Prior to becoming an educator, Christian served as a district executive for the Flint River Council, Boy Scouts of America in Griffin, Georgia and a volunteer program and training manager for the Jacksonville Zoo and Gardens.

Christian accepted a faculty position at Wayne State College in Wayne, Nebraska following graduation, and looks forward to a long career working with both pre-service and in-service teachers as they improve their own professional practice.