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Web 2.0 Tools and Communities of Practice: Bridging Gaps in Novice Teacher Training

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Walden University

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Stacey Donaldson

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2016

Abstract

Web 2.0 Tools and Communities of Practice: Bridging Gaps in Novice Teacher Training

by

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Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

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Educational Technology

Walden University

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Abstract

Novice teachers do not have sufficient opportunities to troubleshoot real-world teaching situations prior to having their own classrooms. Antiquated professional development (PD) models lack the collaboration element that provides authentic application of concepts. This qualitative case study was conducted to fill a gap in research on novice teachers' voluntary participation in an online community of practice. The study explored how the situated learning in this virtual community addressed the cognitive and social needs of early career teachers as they made the theory to practice connections. The community of practice framework and the social learning theories supported socialization as essential in early career teachers' growth. Research questions in the study examined five teachers' beliefs about collaboration in promoting community engagement, the influence of voluntary participation on the quality of teacher engagement, and teachers' perceptions of the use of Web 2.0 technology to build community. A priori codes were created using the theoretical frame and research questions to guide the analysis of audio, transcriptions, observations, and other coded artifacts to find themes and patterns promoting internal validity. Findings revealed teachers' belief in collaboration impacted their level of engagement virtually. While voluntary participation motivates teacher participation, it does not guarantee high quality engagement without accountability. Since attrition is a continual threat to the teaching workforce, study results validate recommending the use of virtual resources to facilitate CoPs to remedy the mentoring and coaching void for early career teachers. Also, innovative use of Web 2.0 tools should be used to expose new teachers to diverse experiences that bridge theory to practice gaps and encourage teacher leadership, which promotes retention.

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Dedication

One cannot undertake a project of this magnitude without the support of great family, friends, and colleagues. I thank my husband, Johnny, and my children, Camaryn and Cailyn, for sharing me. They have been my cheerleaders throughout this process. My mom, dad, and siblings have been a major support system. I will always appreciate their encouraging me to keep going.

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Chapter 1: Introduction to the Study

As technology has evolved, so have the various opportunities for teachers to learn (McConnell, Parker, Eberhardt, Koehler, & Lundeberg, 2013). For early career teachers to thrive in the classrooms, they must continue to build their pedagogy. Induction in a community of practice is essential to support novice teachers in transitioning into effective teaching professionals. Research supports the use of online professional communities as an effective resource for teacher cognition and collaboration. This is a solution to the problem of inconsistent professional development (PD), irrelevant training not applicable to real class challenges and expectations, and isolation, all of which contribute to teacher attrition (McConnell et al., 2013).

Chapter 1 offers an introduction to this case study research on voluntary participation of early career teachers in the Teacher Leadership Initiative (TLI) virtual community of practice to learn about teacher leadership. The National Education Association (NEA), National Board of Professional Teaching Standards (NBPTS), and the Center for Teaching Quality (CTQ) are partners in facilitating the TLI. TLI provides accomplished teachers with an opportunity to advance their careers and the education profession through teacher leadership. Teachers attend blended meetings, which provide information that helps them advance toward completing a capstone project. This study could have the potential to change ineffective and inconsistent professional learning practices on school campuses and offer suggestions on the role of voluntary participation in motivation and engagement.

Background

Regardless of a teacher's path of entry into the education profession, attrition has long been a continual threat to K to 12 education (National Center for Education Statistics (NCES), 2015; Thomas & Reith, 2011; Timms & Brough, 2012). There are several factors that stand out in current literature as causing discontent for novice teachers. Isolation has manifested in the absence of connection, lack of support, and disconnection of theory and practice (Cavanaugh, 2012; Falloon, 2011; He, 2014; Petty & Farinde, 2013; Smith & Greene, 2013; Thomas & Reith, 2011). Constructivism is a theory that suggests people learn through constructing knowledge from experiences. To address these problems, educators have embraced learner-centered measures grounded in a constructivist worldview to promote retention (Beach, 2012; Thomas & Reith, 2011).

Educators have tried different techniques to prevent teachers from leaving the profession: Providing supports for teachers to create community (He, 2014; Lee & Tsai, 2010; Weil, McGuigan, & Kern, 2013; Wright, 2014), building pedagogy (Ajayi, 2010; Pella, 2011; Petty & Farinde, 2013), and connecting theory to practice are some examples (Cavanaugh, 2012; Falloon, 2011; Petty & Farinde, 2013; Smith & Greene, 2013). Teacher education programs stress the importance of professional experience, but there must be other avenues created for novice teachers to apply in their practice the guidelines established by theory (Cavanaugh, 2012; Nervanti, 2012). Learning in a community helps novice teachers more easily transfer or connect theory to practice because of the opportunity to experience real world (Cavanaugh, 2012; Petty & Farinde, 2013; Thomas

& Reith, 2011). This socialization is essential for novice teachers to become competent teachers (Chou, 2012).

For years, mentoring has been a method used in schools to support novice teachers, but it was not always expedited effectively and consistently (Butler, Whiteman, & Crow, 2013; Dominguez & Hager, 2013). Online technology allows for e-mentoring, which helps the mentor and mentee connect virtually to overcome geography and time constraints (Butler et al., 2013; McLoughlin & Alam, 2015). Virtual collaboration offers flexibility but can be challenging as participants learn to use new technologies and facilitators try to sustain teacher interaction (Nerzanti, 2012; Tsai, 2012). When considering the mode of delivery, asynchronous or synchronous, participants preferred the asynchronous platform (Petty & Farinde, 2013). Though limitations exist, connecting with a community via online alternatives may help to fill current gaps in PD (Duncan & Barczyk, 2012; Nerzanti, 2012; Tsai, 2012).

When early career teachers can supplement face-to-face interactions with online discussions, they are able to post questions and reflect on discussions among the community that promote reflection and motivation (Cavanaugh, 2012; Hudson & Hudson, 2013; Nerzanti, 2012; Strycker, 2012). When considering means to keep preservice and early career teachers in the classroom, use of virtual collaboration tools is a viable solution (Cavanaugh, 2012; Hudson & Hudson, 2013; Nerzanti, 2012; Strycker, 2012; Tsai, 2010). For this reason, conducting this study has potential to change the way districts structure professional learning communities for early career teachers, which may keep teachers in the profession longer and benefit their students (Pella, 2011).

The goal of this study was to fill a gap surrounding the need for more research on voluntary participation in an online community of practice and explore how this professional learning community meets the cognitive needs of teachers to enhance students' learning (Baran & Cagiltay, 2010; Pella, 2011). Baran and Cagiltay (2010) conducted a study of using an online community to help teachers develop cognitively and share tacit knowledge. Conducted in two phases, the study compared teachers participating under mandatory terms and teachers' participation under voluntary terms. In the past, teachers were mandated to attend online PD. Few researchers have explored environments that encourage the voluntary discussion of topics (Baran & Cagiltay, 2010). There is still a need for research on developing community in blended and online environments that use Web 2.0 tools (Cui, Lockee & Meng, 2013; Kucuk & Sahin, 2013). Web 2.0 tools are innovative and still not widely used in many educational settings for promoting community among new teachers. In this study, I explored how early career teachers created knowledge about teacher leadership and made connections in the online community that were transferred to improve classroom practice and school environment.

Problem Statement

For preservice and early career teachers to flourish in their professional teaching careers, participating in a community is essential (Cavanaugh, 2012; Stenborn & Hrastinski, 2012; Strycker, 2012). The reality is that teachers who matriculated through traditional, online, or alternate route programs do not get sufficient opportunities to connect theory to practice prior to teaching (Cavanaugh, 2012; Hudson & Hudson, 2013;

Sela, 2013; Weil et al., 2013). Adding to this problem is shallow and inconsistent PD that does not meet the needs of teachers (Bustamante & Moeller, 2013; McConnell et al., 2013). Use of asynchronous and synchronous technologies is a viable option in traditional, online, and alternate certification programs to connect preservice teachers with other teachers, mentors, and instructors (Cavanaugh, 2012; Nerzanti, 2012; Petty & Farinde, 2013; Strycker, 2012; Weil et al., 2013). There is a need for more research on how online community of practice facilitated through Web 2.0 tools can assist early career teachers in learning about teaching and transferring that cognition to impact student outcomes (Hrastinski & Jaldemark, 2012; Lave & Wenger, 1991; Strycker, 2012).

Purpose of the Study

The purpose of this qualitative case study was to explore how early career teachers built community during blended learning that included the use of Web 2.0 tools. Blended community of practice is generally defined as practice groups that share a concern or interest in something they are learning how to do better by interacting regularly in person and virtually using Web 2.0 tools. Web 2.0 is the second generation of the World Wide Web, which improved the functionality of the Web and allowed for increased levels of interaction for free. Blogs, wikis, and social networking are examples.

Research Questions

Research Question (RQ) 1: What influence does belief in collaboration have on early career teacher engagement in a virtual community of practice?

Research Question 2: How does the voluntary participation of early career teachers in a virtual community of practice impact the quality and extent of their involvement in community activities?

Research Question 3: What are the perceptions of early career teachers regarding the use of Web 2.0 tools to collaborate virtually with other teachers?

Conceptual Framework

This research study was framed using the lenses of Bandura's (1977) social learning theory and Lave and Wenger's (1991) community of practice (CoP) framework. Bandura (1977) argued that humans learn through observing others and through the consequences of personal actions. Consequently, modeling plays an important role in teaching and learning and is essential in teacher training (Bandura, 1995; Butler et al., 2013). As noted in Figure 1, socialization has an impact on a teachers' satisfaction promoting retention (Stryker, 2012).

Social learning is the essence of Lave and Wenger's (1991) CoP, which challenged learning as a collaborative activity instead of an individual accomplishment. Lave and Wenger argued in the model of situated learning that learning is a social process and results from one being engaged in a community of practice. As shown in Figure 1, both theories support the socialization that is necessary for early career teachers to grow in their practice. Virtual tools have become a promising means of providing such support.

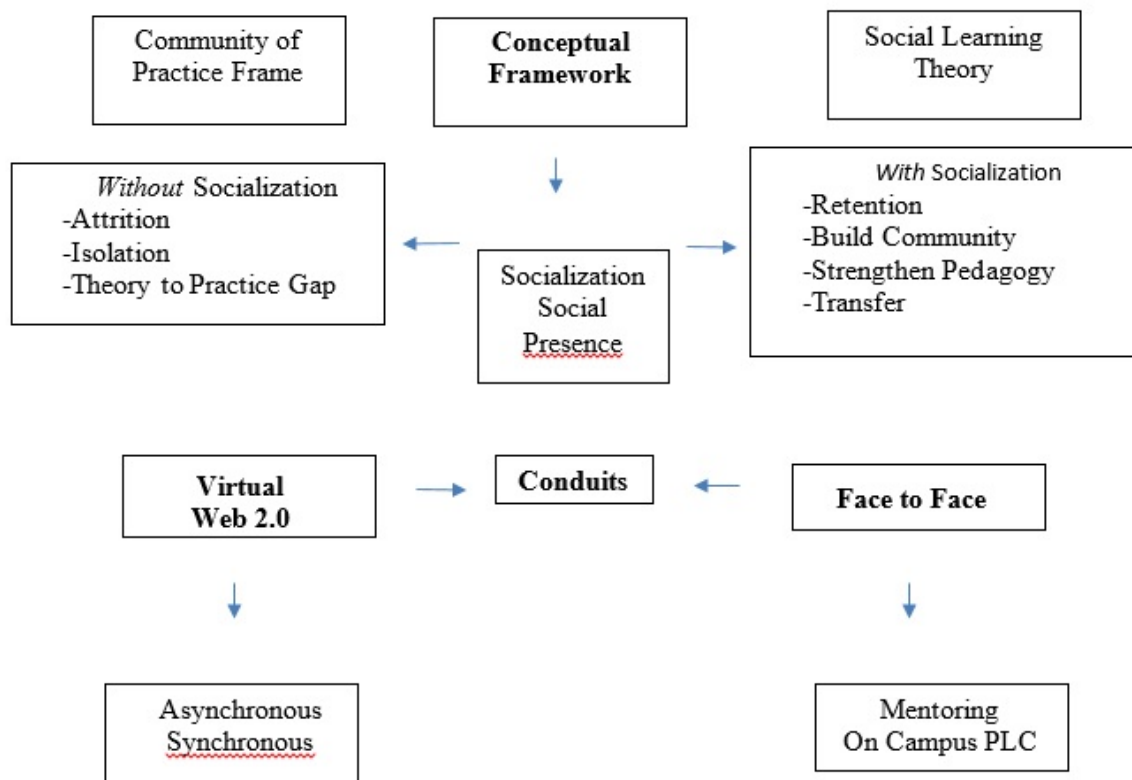


Figure 1. Conceptual map. This is a representation of the CoP and social learning theory, which are both grounded in socialization, the pros and cons of new teacher socialization, and conduits of socialization in education.

Social Learning Theory

In this study, I used the lens of social learning theory to emphasize the importance of socialization such as modeling and mentoring as cognitive processes for adult learners (Bandura, 1977). The social learning theory places emphasis on the importance of modeling in social learning. Bandura (1977) argued that humans learn by watching others and by observing the positive and negative consequences those models might experience. The new teacher experiences social learning through observing the teacher's classroom practices and interaction with students. Social learning can also be experienced as teachers collaborate virtually and share and receive information through synchronous

means such as videoconferencing or asynchronously via blog or Blackboard (Petty & Farinde, 2013; Nerzanti, 2012).

Community of Practice

The framework for this study was centered on the CoP theory. Early career teachers need opportunities to interact collaboratively with peers to build community but are less apt to voluntarily participate in PD designed for this purpose (Caudle, 2013; So, 2012). CoP theory provides an explanation of how learning occurs when considering the structure of communities.

Because it promotes collaboration, encourages reflection of practice, and builds knowledge, creating community is a trend in the world of PD (Caudle, 2013). Research supports improvement in teacher instruction and student learning when teachers are engaged in PD that provides instructional inquiry via professional learning communities over an extended period of time (Caudle, 2013; McConnell et al., 2012). Virtual professional learning communities (PLC) have also increased in popularity (Stryker, 2012). Use of the CoP framework provides an effective underpinning for this study to explain how early career teachers learn and strengthen their pedagogy through collaboration in virtual PLC (Cavanaugh 2012; Lave & Wenger, 1991).

The definition of CoP was the first consideration that signaled appropriate framing of the study. CoPs are groups of people with a common concern or passion for something they do or are learning how to do better as they collaborate regularly. Also considered were the following assumptions that frame communities of practice: feelings

of belonging help to shape one's identity in the group, and changes in learning prompts change in one's identity and relationship with the group (Lave & Wenger, 1991).

Nature of the Study

Research Design

The qualitative case study methodology was chosen for this study because that it aligns most effectively with the research questions. The design of the study was also representative of the small number of teachers available to participate in the study. Because of the small sample size, quantitative and mixed method designs were not appropriate for this study. The strength of quantitative design is quantifying data from larger populations to generalize findings. A mixed method design by definition would require descriptive data and quantitative data. Description can be achieved, but a larger population would be necessary for statistical power to generalize results to other situations. The qualitative approach provided data concerning behavior trends, participants' needs, and the use of a case.

Of the five qualitative traditions of inquiry, the case study approach was selected for this study. The focus of the study was on early career teachers who voluntarily participated in the TLI. This PD was designed to share best practices for teacher leadership. The group of teachers was the primary unit of analysis. The case study approach offered detailed analysis of this particular case. Use of multiple theories also helped in interpreting the case study data, which is characteristic of processes inherent in case study preparation (Yin, 2009).

In this study, I explored the experiences of early career teachers participating in TLI to build community using Web 2.0 tools. The case study approach supplied descriptive details and exploration of the issue through a single case (Maxwell, 2005; Yin, 2009). This approach facilitated answering the why and how questions that emerged about a phenomenon in a real-world context in which the researcher has little or no control of the events (Yin, 2009). Using the case study design, I explored what actually occurred and what participants experienced during the single lived event of the TLI. Through this framing, I knew the intention of my study and the reason for conducting the study, which confirmed I had selected the appropriate tradition and methodology (Wolcott, 1994).

Methodology

Participants. The participants in this qualitative case study were selected because they were members of the TLI. The following criteria were used to select participants: participation in TLI, early career teachers with fewer than 5 years of teaching experience, being employed as teachers during the study, and actively participating in community activities. These criteria were designed to gather data on the impact of voluntary participation and collaboration on engagement when using Web 2.0 tools.

TLI participants were learning about teacher leadership via blended participation in the TLI. Participants from Arizona, Colorado, Iowa, Massachusetts, Michigan, and Mississippi represented the 2014 pilot year. These teachers' years of teaching experience varied. They attended biweekly virtual sessions to learn various aspects of teacher leadership to be applied to a teacher leadership capstone project.

Data collection. In this study, three data sources were used: interviews, observations of webinars recorded in real-time, and other artifacts such as the discussion posts and webinar prework. Interview procedures were used to guide this process and properly inform participants of research expectations. As shown in Appendix B, the interview questions listed in the interview protocol were aligned with the research questions and design of the study. Since I was the collection tool, a reflective log was used to assess personal perspectives and guard against bias. I used personal journaling to help assess myself and my perceptions to guard against bias.

Data analysis. Use of the CoP framework, social learning theory, research questions, and a priori codes were used to identifying patterns and themes that emerged. This helped in drawing conclusions that may add to current research (Miles, Huberman, & Saldana, 2014; Patton, 2002). Atlas.ti was the qualitative research tool used for data analysis. This program aided in managing documents and coding data. The use of a number of data analysis strategies like creating codes, checking for patterns, and listening to interviews before transcriptions occurred led to more effective data dissemination. Taking these steps also assisted in interpreting trends in the data.

Definitions

Blended learning: This is a hybrid of classroom and online learning providing convenience of online with face-to-face contact (Kucuk & Sahin, 2013).

Community of practice: This is a group that shares a concern or interests in something they learn how to do better by interacting regularly (Lave & Wenger, 1991).

Domain: This is what a group does or cares about (Wenger et al., 2002).

Early career teacher: This is a teacher who has taught school less than 5 years (Cornu, 2013).

Preservice teacher: The label given to a college education student participating in a school-based field experience with a cooperating teacher. Prior to graduating and becoming a teacher, the preservice teacher learns about every aspect of teaching in this apprenticeship type training (Kato, 2010).

Protégé: This is a person who receives professional support and protection from an influential patron. An example would be a junior faculty member or a graduate student (National Head Start Association Dialog, 2011).

Social presence: This is the degree of salience or prominence the communicator exhibits to other participants using computer-mediated communication in an online community (Smith & Tirumala, 2012).

Teacher leadership: Teacher leadership encompasses leadership roles of teachers outside of the classroom setting, beyond the traditional role of classroom instruction (National Education Association, 2014).

Vicarious learning: This is also known as observational learning (Bandura, 1969).

Web 2.0: This is the second generation of the World Wide Web, which improved the functionality of the Web by allowing users increased levels of interaction for free. Blogs, wikis, and social networking are examples (O’Brannon & Britt, 2012).

Assumptions

Three assumptions were made about the early career teachers in the TLI virtual community of practice prior to initiating this research study. The first assumption is that

due to their voluntary participation and interest in learning to be teacher-leaders, participants are motivated to meet the curricula and time requirements of the initiative. The goal of a single case study is to elucidate results of typical circumstances. The next assumption is the TLI community of practice exemplifies a virtual community of practice facilitated via Web 2.0 tools to promote teacher leadership, and results are generalizable to conventional virtual professional learning communities. The final assumption is that participants would have experienced technology training and expertise leading to proficiency, allowing them to successfully collaborate in an online environment.

Scope and Delimitations

When considering delimitations, I looked at early career teachers instead of exclusively preservice teachers. I have chosen not to focus on preservice teachers because this case leaves few opportunities to interview participants who can speak about the phenomenon of establishing community in a school. Because preservice teachers are starting their practice, they have not established relationships with other teachers. They also do not have the knowledge needed to provide rich details to answer questions I asked asking interactions with colleagues. I chose not to use veteran teachers because I did not think the data would be as rich because they have found their own way of building community through years of experience.

Limitations

The first limitation is in the qualitative design itself because the sample size is normally small, which removes the trait of generalizability (Miles et al., 2014; Patton, 2002). This can be overcome through purposeful sampling, which minimizes bias and

nets more meaningful data (Patton, 2002). However, smaller samples allow the qualitative researcher better control over the data. Fifteen or more cases are burdensome in the qualitative realm and amount to thinner data. This minimized the depth of description, which is the power of qualitative design (Miles et al., et al., 2014).

There is also a limitation since my study is a single case study. A multiple case study is a more powerful strategy. This can be resolved by continuing the study at a later date and include another case for comparison. However, the use of strategies such as data triangulation, recording and transcriptions, and coding and theme development grounded in a conceptual frame add quality and promote reliability regardless of the single case status.

Another limitation is the connection I have with TLI. I was a state coach in the first cohort year in 2014. I have a thorough understanding of TLI; however, I needed to take measures to ensure objectivity and prevent bias. My connection with this initiative may have helped to build relationships with participants to encourage participation in the study and comfort while sharing personal experiences.

Significance

To sustain the teacher workforce, improving retention and teacher quality is essential (Schaefer, Long, Clandinin, 2012). Helping early career teachers connect theory to practice while building community is one way to fight attrition (Shaefer et al., 2012). Use of asynchronous and synchronous technologies to promote community building among preservice teachers is promising though more research is needed to determine how virtual

PD help teachers to learn make changes to their practice that impact students' learning (McConnell et al., 2013).

This research on the method of participation that best facilitates building a community of practice for novice teachers can advance the profession in educational technology by adding to the body of research. More research is needed to provide a model of synchronous or asynchronous activities that can be used to engage novice teachers, especially when PLCs on campus are not effective. Many districts use very little technology to facilitate learning. This study promotes the use of educational technology to possibly revive failing PLCs.

Summary

Chapter 1 offered an introduction of online CoP, a rationale for the study and use of the qualitative research method, problem statement, and research questions. Chapter 2 provides a comprehensive review of current literature. In chapter3, a description of the research methods including data collection forms, data analysis plan, validation and reliability strategies for the study, ethical concerns, and the researcher's role and background are included. Chapter 4 presents the results of the study following data collection and data analysis. Chapter 5 provides a discussion of the findings, presents conclusions and provides recommendations based on those findings in the study.

Chapter 2: Literature Review

Teacher attrition is the single most significant threat to education (Shernoff et al., 2011; Stryker, 2012; Thomas & Reith, 2015; Timms & Bough, 2012). Novice teachers are leaving the classroom sometimes as quickly as they enter, which means teachers are exiting the profession faster than they are entering, posing a real retention problem (Erikson, Noonan, & McCall, 2012). This can be attributed to a plethora of issues beyond the following: isolation prohibiting the creation of social presence in a new field (Hager, 2011; He, 2014), shallow educational pedagogy that makes it difficult to solve real classroom problems (Anderson & Matkins, 2011; Beach, 2012; Chou, 2011; He, 2014), and disconnection of theory and practice (Cavanaugh & Garvey, 2012; Falloon, 2011; Nervanti, 2012; Petty & Farinde, 2013; Smith & Greene, 2013; Thomas & Reith, 2011).

In this study, I explored how early career teachers build community during blended learning using Web 2.0 tools (Thomas & Reith, 2011). This collaboration helps protégé teachers learn how to be their best selves in a new profession (Cavanaugh & Garvey, 2012; Petty & Farinde, 2013; Wenger et al., 2002). While building community, novice teachers also have an opportunity to deepen their education pedagogy needed to make good decisions in difficult situations in the classroom (Cavanaugh & Garvey, 2012; Duncan & Barczyk, 2013; Lave & Wenger, 1991). Synchronous and asynchronous technologies can be used to foster collaboration among novice teachers and connect them with more experienced teachers, mentors, and instructors (Anderson & Matkins, 2011; Nervanti, 2012; So, 2012; Taranto, 2011; Xiuli, 2011). Nontraditional Web 2.0

technologies can serve asynchronous and synchronous functions and remove the excuse of distance and time to allow for cross-organizational and diversified collaboration (Cavanaugh & Garvey, 2012; Falloon, 2011; Hudson & Hudson, 2013; Nerzanti, 2012; Smith & Greene, 2013; Strycker, 2012).

Literature Search Strategies

This research was derived from refereed journal articles, scholarly books, and research documents from the following Walden University Library Internet search engines: ProQuest Central, EBSCOhost, ERIC, Sage Publication, and Digital Dissertations. I also used Google Scholar to conduct Internet searches. The following terms were searched: *Web 2.0, community of practice, social learning, virtual communities, online communities, asynchronous, synchronous, community of inquiry, alternate certified teachers, preservice teacher, early career teachers, PD, mentoring, reciprocity, professional learning communities, and video conferencing.*

Conceptual Framework

This study is grounded in Bandura's (1977) social learning theory and Lave and Wenger's (1991) CoP framework. The social learning theory informed the design of this study and the CoP framework informed the analyses.

Social Learning

Bandura's (1977) social learning theory provides a foundation and explanation for how humans use socialization to learn. Bandura is cited in current literature to support the teacher's need to be connected through multiple relationships (Timms & Bough, 2012) and the satisfaction of being able to meet goals and fulfill personal expectations (Timms

& Bough, 2012). Bandura (1977) argued that cognitive, behavioral, and environmental elements contribute to social learning. The interaction of external stimuli and internal cognition allows for learning behavior predictions (Bandura, 1977). The social learning theory posits that people learn as they observe the actions and reactions of others (Bandura, 1977). Lave and Wenger's (1991) research on social learning builds on this idea with the additional notion that learning is a product of engaging socially.

Observation is not the only conduit for social cognition. Imitation and modeling also encourage social learning (Pella, 2011); when an adult models certain behaviors, the spectator is likely to repeat those behaviors. Bandura (1977) stated that for the observer, this observation could be stored as an experience. This basically means the observer takes what was seen and does not have to personally go through the action to consider it experience. Bandura (1977, 1995) showed that the same could be true as one sits on the sidelines and witnesses an interaction without actually going through the physical experience (Bandura, 1977). Novice teachers are required to spend hours observing other teachers or serving in an apprentice role to practice the work prior to becoming a teacher. In this study, I explored perceptions of early career teachers learning about teacher leadership by listening to other teachers and creating their own plan of action to improve conditions in their classrooms on their campuses. These examples indicate that social learning was used as a framework for this study.

Modeling, also known as observational learning, accounts for a variety of behaviors in social learning. Bandura (1977) argued that humans learn by witnessing the negative and positive consequences attached to behaviors. Like preservice teachers in

traditional preparation programs, alternately certified teachers are required to spend a period of time observing a teacher's practice. Though alternately certified teachers (ACTs) have not completed education classes as traditionally trained colleagues, ACTs do have degrees in other disciplines and years of work experience in industry. Because of minimal classroom experience, ACTs have to learn to operate effectively in the classroom. Observing a model or more experienced teacher is one of the most effective ways to equip novice teachers as long as certain conditions are achieved.

Attention, retention, reproduction, and motivation processes form the basis of social learning: If one pays attention to the model, he or she is likely to retain the information or experience (Bandura, 1977). This gives the person the ability to reproduce that experience if there is incentive or motivation. Again, novice teachers are motivated because they are preparing to lead their own classes. Therefore, they pay attention to what their cooperating teacher does to make the class effective and use strategies retain that information. If effective, the same techniques can be used again when these new teachers get teaching assignments. Bandura (1969) created the term *vicarious influence* to describe the modeling and observation process.

Vicarious influence. Vicarious learning, also known as observational learning, is beneficial as preservice teachers observe teacher student interactions in the classroom. Since the preservice teacher cannot participate in the experience, he or she forms emotional and mental experiences while observing the cooperating teacher's experience. After witnessing the model, the learner analyzes possible new behaviors, choosing to imitate or not to imitate based on the behavior and positive and negative consequences

that followed. If a teacher acts and the students' responses were negative, it is not likely the novice teacher will imitate the action. When positive reinforcement follows imitation, learning occurs, and motivation will result (Bandura, 1969). Teachers expect then to see similar positive results when they repeat the action in their own classes.

When learners are motivated to reproduce the experiences they witnessed, observational learning is considered successful. In the case of new teachers, they know they will be teaching practice lessons in contributing teachers' classrooms that may be assessed by program evaluators. Their reproductions may determine success or failure in demonstrating mastery of educational objectives in their classes. This would be more of an extrinsic motivation, but at this stage, the protégé is also intrinsically motivated to adopt skills that will help them be successful in their own classes. Preservice teachers are required to student teach at some point in their teacher preparation program. They are observers in their cooperating teacher's classroom and witness every aspect of the learning environment. Both teacher and student behaviors are on display, and the preservice teacher looks to see how both respond in a wide variety of situations. Based on Bandura's (1977) definition of experience, preservice teachers are storing experience via social learning that occurs through a reciprocal interaction of cognitive, behavioral, and environmental influences (Bandura, 1977). From this observation, the preservice teacher stores the reactions or responses and later chooses to imitate or not to imitate.

Socialization. Socialization is at the heart of teacher preparation (Gasson & Waters, 2013; He, 2014; Tsai, 2012). It is also a crucial element in knowledge conversion within an organization (Chou, 2011; Tammets, Pata, & Laanpere, 2012;

Wenger et al., 2002). In the context of education, Chou (2012) defined socialization as the way a teacher accepts the expectations and teaching culture. Chou found that the use of blogs to share topics and provide feedback allowed for an exchange between novice and in-service teachers. This exchange is a socialization strategy that promotes social learning, allowing for reflection and higher-order thinking to learn about educational practice content (Chou, 2012).

It is valuable when teachers have an opportunity to collaborate with other teachers inside their schools and outside their buildings. Researchers have supported socialization of implied or tacit knowledge among preservice and in-service teachers being developed during close physical proximity as colleagues interacted across organizations (Tammets et al., 2012). This active exchange of ideas produces intrinsic motivation among group members to gain knowledge in an authentic context for effective learning (Bandura, 1977; Tammets et al., 2012). The researchers discovered that the learning and knowledge building model was effective in determining individual and organizational learning that connects teachers via PD (Tammets et al., 2012). One example is the occupational identity development of undergrad music majors during a year-long authentic context learning experience in a PD school. Four themes surfaced during the study: self-awareness, pedagogical knowledge, performer-teacher symbiotic outcomes, and professional perspectives (Hasten & Russell, 2011). Both studies confirm that the formation of a teacher's identity is socially linked to peer interaction and growth. However, Hasten and Russell (2011) argued that this socialization occurs prior to post-secondary experience. Tammets et al. (2012) included a diverse sample of preservice,

induction year, in-service teachers, and teacher trainers, which allowed for comparing, contrasting, and drawing conclusions across categories of teachers. Though the small size of Tammets et al.'s study introduces limitations, the triangulation of data added reliability, validity, and more relevant application to the population I studied.

Community of Practice

Lave and Wenger's (1991) CoP framework provided a foundation for the analysis of this study. A CoP is a group of people who have the same concerns or interest in a topic and learn from each other through continual interaction (Lave & Wenger, 1991; Wenger et al., 2002). Community of practice does not specify one type of group or address one profession but frames community through a sociocultural lens (Caudle, 2013; Lave & Wenger, 1991). Though I focused on early career teachers who entered the field of education via traditional and alternate certification routes, CoP can be represented by engineers, mothers, clergymen, or artists (Lave & Wenger, 1991). Each group comes together with their concerns and passions aligned to form relationships that help them to solve problems while brainstorming ideas and discussing issues—building community. Before Lave and Wenger challenged learning as collaborative activity, learning and education had been described as an individual accomplishment. Learning was often considered decontextualized--having a start and finish that resulted from teaching (Wenger, 1998). Lave and Wenger argued in the model of situated learning that learning was a social process and resulted from one being engaged in a community of practice (Lave & Wenger drew conclusions from observing apprenticeships of different groups: meat cutters, Yucatec midwives, and Vain and Gola tailors. Lave and Wenger determined

that learning results from participation in the practice of social communities. The first step is joining the community and learning from the sidelines or periphery (Lave & Wenger, 1991). As members became more proficient in the activities of that community, Lave and Wenger posited that members advanced from legitimate peripheral participation to full engagement. From this point, learning is recognized less as acquisition of knowledge but more as a process of social participation (Lave & Wenger, 1991).

Situated learning. Situated learning is learning that happens when one is placed as a full participant in an activity that aids in generating meaning (Lave & Wenger, 1991). This type of learning asserts that knowledge is not decontextualized, and new knowledge and learning occur when one is engaged in a community of practice (Blankenship & Kim, 2012; Lave & Wenger, 1991). This theory also provides a foundation to explain why preservice and early career teachers may strengthen their pedagogy while teaching and learning through reciprocity (Cavanaugh 2012; Lave & Wenger, 1991). These scholars agree that preservice and early career teachers are able to reflect on personal practice while sharing information that may help other members of the community (Cavanaugh & Garvey, 2012; Lave & Wenger, 1991).

Situated learning is significant because it offers a solution for new teachers to learn pertinent knowledge that equips them in their new roles as teachers. In a school with a weak professional learning community, novice teachers enter a system and participate in the first days of PD designed to get all teachers acclimated for a new school year. After those PDs, teachers go to their perspective classrooms, and in most cases may not have any other interactions with their team. Pella (2011) argued that when situated

learning is used in the context of PLCs, teachers acquire knowledge as they engage socially. Blankenship and Kim (2012) agreed with Pella's stance but added that the value of virtual training through Second Life and Skype in the place of face to face trainings that are considered impractical. Pella's study was framed using the situated learning theory, CoP framework, and social learning theory and is more convincing because of the theoretical foundation.

Mentors help move new teachers toward full participation in community practices (Lave & Wenger, 1991). Mentoring support, a form of situated learning, exposes new teachers to the realities of teaching (Butler et al., 2013). Districts may or may not have a mentoring program in place to nurture new teachers. In some cases, individual schools assign mentors to new teachers, but effective guidelines are not always provided for how the mentorship will occur. There may also be no monitoring of how closely the mentor/mentee follow the guidelines of operation for support, also known as management of knowledge in an organization (Wenger et al., 2002). It is not surprising that Butler et al. (2013) reported a gap in research on mentoring outcomes.

Knowledge is the key to success in any organization. Cultivating communities of practice is a means of managing that knowledge (Wenger et al., 2002). In the teaching community, preservice teachers have gone through a system of preparation. Once they have completed their programs, they are knowledgeable and theory-rich, but many lack the experience prior to their teaching assignment to practice applying that knowledge (Smith & Greene, 2013; So, 2012; Thomas & Reith, 2011). A community of practice that is socially situated allows members to construct knowledge while engaging and

interacting with others (Pella, 2011). This interaction in the PLC affords continual support for novice teachers by providing resources and information that help them address situations beyond their experience.

Early career teachers would benefit from cross organization and diversified advice, which are traits of CoPs (Tammets et al., 2012; Wenger et al., 2002). Communities of practice connect people from different schools and teaching levels; this interaction brings knowledge to life (Tammets et al., 2012; Wenger et al., 2002). When face to face interaction is not possible, technology like Second Life and Skype offer training alternatives that expose teachers to situations they may encounter in an authentic setting (Blankenship & Kim, 2012). Knowledge like an organism is not static but dynamic and can be found in skills, comprehension, strategies, documents, and relationships among members (Wenger et al., 2002). Communities of practice offer novice teachers entering education multiple avenues to construct and share knowledge learn through collaboration.

Model structure of CoP. There are three elements that make up the basic structure of CoP: Domain of knowledge, which defines the common interest; community of people, who all care about the domain; and the practice they are developing for efficiency in that domain (Wenger et al.2002). When a group of people has common concerns or issues (domain), they have commonalities that help them to value members and the purpose of the group, which makes participation easier. This domain inspires contribution from members because they share these issues. Novice teachers initially do not feel comfortable sharing what they know among veteran teachers (Chou, 2012; Weil

et al., 2013). Chou (2012) also uncovered a need for more research on teachers' trust and engagement in teacher blogs and education practice. Weil et al. (2013) and Chou both use focus their research in the online setting, but Weil et al. illuminated results that show teachers have confidence in sharing thoughts and opinions via the online discussion.

Community is a thread that connects members, socially binding them through respectful and trustworthy relationships (Lave & Wenger, 1991; Wenger et al., 2002). A community, however, does not make a community of practice. Members must be willing to share and expose their vulnerabilities, allowing them to learn and feel connected to the group (Wenger et al., 2002). These three elements must achieve a structural balance for CoP to flourish (Wenger et al., 2002).

If members are not committed to the domain, community is just a group of associates (Wenger et al., 2002). Lack of a domain removes accountability to the knowledge and purpose, which drives the practice (Wenger et al., 2002). When the aims of organization are coupled with aspirations of community members, communities of practice thrive (Wenger et al., 2002). Community of practice is deeper than a website or strategies. Through interaction, fellowship, and relationship, members develop a sense of belonging (Wenger et al., 2002).

Finally, practice can be a noun or verb. For instance, a teacher's classroom practice is the application of beliefs, ideas, and methods for classroom operation, and this practice goes beyond theory. Practice as a verb is continual repetition of a skill to gain expertise as a student practices a skill for an assessment. A community of practice can be both. Practice allows the community to establish a baseline of knowledge on which all

members agree. Members collaborate through this practice, inventing and applying methods to solve problems and improve their learning (Wenger et al., 2002).

Early career teachers need opportunities to interact collaboratively with peers to build community but are less apt to voluntarily participate in PD designed for this purpose (Baran & Cagiltay, 2010; Caudle, 2013; So, 2012). Baran and Cagiltay (2010) argued the need for more research on web-based and supported learning environments in education that are not mandated or reinforced with a grade. This environment would allow participants to voluntarily discuss topics. One of the goals of this study is to provide qualitative data that fills this gap.

Alternate Certification: The Education Game Changer

Current research lauds the use of virtual technology to develop communities of practice as an effective way to support novice teachers (He, 2014; Weil et al., 2013; Wright, 2014). Novice teachers have different experiences whether they achieved certification via traditional or alternate pathways. Approximately 30 years ago, traditional routes of teacher preparation were the norm. Career changers have changed the face of teacher preparation (McCray, 2012). In education, career changers are alternately certified teachers with three or more years of experience in another profession prior to entering the education profession. This social change also ushered in the need for innovative support and PD (Hager, 2011). Hager (2011) argued web conferencing is a good technology to support social interaction between students and instructors and promote effective mentor/teacher relationships especially in rural areas.

Career changers go through a social process to create their identities as student teachers (McCray, 2012). For alternately certified (AC) teachers, this process can be unpleasant because their new identities conflict with former professional identities. Though traditionally certified preservice teachers do not have this challenge, they do struggle to fit in their new profession as new teachers (Tammets et al., 2012). This is one reason creating a solid community of practice is essential not only for AC teachers but also for traditionally certified early career teachers (Caudle, 2013; Duncan & Barczyk, 2013; Falloon, 2011; Hager, 2011; Kucuk & Sahin, 2013; Stenbom & Hrastinski, 2012; Tsai, 2012; Wright, P. 2014). Moving forward in this study the mention of early career teachers includes traditionally and AC teachers.

The influx of teachers entering the education profession through alternate pathways of certification became a solution to veteran teacher attrition caused by retirement and job dissatisfaction (McCray, 2012; Stryker, 2012). However, the saving grace of alternate certification has been threatened because attrition among alternate route teachers averaging 40% to 50% by the fifth year. Feelings of isolation from peers (Hager, 2011; He, Y. 2014), disconnection of theory and practice (Cavanaugh, 2012; Falloon, 2011; Petty & Farinde, 2013; Smith & Greene, 2013) and lack of support (Stryker, 2012) are some of the reasons for novice teacher discontent. This introduced a tremendous need to address support issues and provide solutions that meet the needs of novice teachers (Cudahy and Clayton, 2011; Hager, 2011).

Improving Retention of Teachers

Having a healthy teaching workforce is the life of education, and for this reason educators must be proactive in their efforts to retain teachers. One positive step noted in research is scaffolding the transition from observation to participation (Thomas & Reith, 2011). Other professions like law and medicine provide opportunities for novices to participate in apprenticeships or hands-on training prior to professional service (Stryker, 2012). Many preservice teachers are placed in very demanding teaching positions for their first assignments. Making more obvious for preservice teachers the curriculum and management supports that already exist but maybe overlook to an inexperienced eye (Thomas & Reith, 2011). Ongoing PD that enables novice teachers to experiment with and learn ways these supports are best applied would be helpful in such a performance-based occupation as teaching. Furthermore, having the opportunity to learn with others in a community to co-construct knowledge by making meaning through activities and shared experiences (Lave & Wenger, 1991; Pella, 2011). Research cited the rate of retention in urban schools was 30% and higher because teachers felt a lack of support, isolation, ill preparation--all problems that challenge educators in efforts to retain preservice teachers (Hager, 2011; Stryker, 2012). Use of Beginning Teacher Programs that allow new teachers to find a middle ground known as the “third space” between district mentor and university support that aids novice teachers in building community (Cudahy and Clayton, 2011; Hager, 2011). This allows protégés to share experiences and classroom management strategies while listening to constructive feedback that supports

formation of identity in the learning community and improve retention rates among cohort members (Cudahy & Clayton, 2011; Lee & Tsai, 2011; Thomas & Reith, 2011).

Historically, the education system has struggled to develop a sustainable means of developing teachers beyond undergraduate preparation. One reason is training that comes in the form of PD has been shallow and inconsistent (Bustamante & Moeller, 2013; Thomas & Reith, 2011). To sustain long-term learning within PD projects, establishing a community of practice is crucial (Simon & Ferguson, 2012). Because teacher education programs stress the importance of professional experience, other avenues must be created to help early career teachers learn while becoming indoctrinated in a community (Cavanaugh and Garvey, 2012).

Many studies in this literature review were conducted using lens of Community of inquiry theory, which stems from Lave and Wenger's (1991) idea of community of practice (Caudle, 2013; Kucuk & Sahin, 2013; So, 2012; Stenbom & Hrastinski, 2012; Wright, 2014). Community of inquiry theory posits critical thinking is the product in communities when reflection and discussion are grounded in contexts that support social presence, teaching presence, and cognitive presence in online situations (Caudle, 2013; Wright, 2014). So (2012) did use the community of inquiry and community of practice frameworks. Though there was a presence of these frameworks in the study, there was not a heavy emphasis place on these frameworks undergirding the study. The reader would have to make this assumption. So based this study on the Structure of Observed Learning Outcomes (SOLO) taxonomy. Stenbom & Harastinski (2012) and Caudle (2013) share a focus on mentoring and coaching in the online setting. Stenbom &

Harastinski's study was the only mixed method study, which provided the most thorough inquiry about the need for community to bolster new teacher growth.

Connecting Theory to Practice Virtually

Digital technology has become an increasingly popular way of assisting teachers in making tighter connections that bridge the theory to practice gap. Learning in a community helps novice teachers more easily connect theory to practice since they have the opportunity to experience and co-construct meaning through real world applications (Baran & Cagiltay, 2010; Cavanaugh & Garvey, 2012; Falloon, 2011; Petty & Farinde, 2013; Smith & Greene, 2013; Thomas & Reith, 2011). Each of these studies share the argument that use of videos of classroom practice helps online communities by giving teachers a realistic view of classroom situations. Baran and Cagiltay, (2010) cited a gap in research concerning online environments in which teachers voluntarily participate in discussions. Teacher Leadership Initiative cohort members were not mandated to participate. I conducted research using TLI's virtual environment to make inquiries that may help to fill the gap in literature. Co-teaching is another form of collaboration that encourages teachers to share and learn from a partnering teacher. Current research emphasized novice teachers made connections through observation, co-teaching, and reflection (Cavanaugh & Garvey, 2012). Cavanaugh and Garvey (2012) argued one benefit of co-teaching was reciprocity, which participating teachers make changes to their practice (Cavanaugh & Garvey, 2012). Teachers struggled when reflecting on their practice (Anderson & Matkins, 2011; Chou, 2012). However, when reflection activities

were high quality and connected to follow-up activities and workshops, reflection was deeper and more beneficial.

Active learning also enhances teachers' learning experience. Self-reflection is an example of this type of learning. The use of blogs to explore socialization strategies, teachers' cognitive source, and content reflections. Self-reflection is essential as well as peer dialogue to enhance learning (Chou, 2011; Duncan & Barczyk, 2013). Chou (2011) showed student teachers' motivation and personal reflections helped them stay committed to teaching and improving socializing with peer student teachers, mentor teachers, and internet communities (Chou, 2011; Hager, 2011; Koles & Nagy, 2014). Reflection is a critical thinking skill. When teachers are able to apply what they have learned in theory they make connections that aid in making good decisions in the 21st century classroom (Neal, Reynolds, and Angle, 2013). Using Web 2.0 tools, specifically blogging, promotes interactivity and reflection for participants (Andersen & Matkins, 2011). Andersen & Matkins, (2011) hypothesized web-based journaling would increase two-way communication and facilitate positive interaction supporting critical reflection while developing participants' pedagogical content knowledge (PCK). Shallow pedagogy can hinder effective classroom instruction (Bustamante & Moeller, 2013). As teachers operate in a community of practice, they build their repertoire along with their pedagogy as they share and receive information (Lave and Wenger, 1991; Neal, Reynolds, and Angle, 2013). Neal, Reynolds, and Angle (2013) argue the value of preservice teachers collaborating globally via Web 2.0 tools to build knowledge and community that prepares them for the 21st century classroom. This case study research was most valuable because

it explored cross institutional collaboration promotion vivid description and results confirmed an increase in students' confidence using a variety of media and gaining knowledge though online collaboration (Neal, Reynolds, & Angle, 2013).

Online communities are beneficial for new teachers in many ways. Participation in virtual communities helps teachers apply theory to practice; discuss, compare, and share ideas; modify teachers' beliefs; and share new teaching topics (McLoughlin & Alam, 2014). The use of videos of classroom practice aided online communities allowing teachers to view realistic classroom situation and learn (McConnell, Parker, Eberhardt, Koehler; & Lundeberg, 2012). Web 2.0 tools like face-to-face meetings promote communication and collaboration (Duncan & Barczyk, 2013; McLoughlin & Alam, 2014; Williams, Karousou, & Mackness, 2011). These tools enabled teachers to share materials and communicate from a distance free of charge (McLoughlin & Alam, 2014; Williams, Karousou and Mackness, 2011). Virtual learning provides scaffolded engagement for participants, which improves digital literacy making it possible for users to participate in global networking (McLoughlin & Alam, 2014). McLoughlin & Alam (2014) also brought attention to the fact that student familiarity with tech tools can present challenges that prohibit effective use of strategies that would normally aid in cognition.

Transforming PD

PD has been criticized for not being effective. Current research on PD gave poor critiques citing disconnection to class reality and poor follow-up (Beach, 2012). On the other hand, high quality PD in current research is described as flexible, learner centered,

collaborative, considerate of content integration, and reflective of class practice (Beach, 2012; Erikson, Noonan, & McCall, 2012). In many instances, PD is not ongoing, does not promote active learning with teaching methods, and lacks the integration of specific subject matter (Beach, 2012). To sustain the effect of PD, creation of communities of practice facilitates novice teacher engagement. Preservice teachers then can share their expertise and learn from others long term (Stryker, 2012).

The creation of professional learning communities (PLC) is one way to foster effective PD in a school setting. Educators form PLCs and are able to share and have discussions in the school setting to plan, development curricula, and tackle issue for the good of students (Dufour, Dufour, Eaker, & Many, 2006; Shernoff, et al. 2011). However, busy teachers' schedules threaten adoption of face-to-face PLCs (Beach, 2012). One way to address this obstacle is through creating online professional learning communities (Beach, 2012). Current studies show online support communities are used for long-term PD and can provide support and continued interaction with colleagues to share stories, challenges, and successes (Stryker, 2012). Beach (2012) argued PD must change to reflect the type of digital technologies currently used by students. This would encourage teachers to incorporate current technologies into their practice and encourage collaboration (Beach 2012).

Virtual support is also a way to keep teachers from leaving the classroom. Synchronous and asynchronous tools, social media, and file sharing space are all viable digital options that make virtual community collaboration possible. Connection, conversation, content, and context of information are four possibilities of supporting

online community building (Hoadley & Kilner, 2005). Connection refers to linking members who share certain practices and is particularly important for peripheral participants (Hoadley & Kilner, 2005; Lave and Wenger, 1991). This is possible through the use of Web 2.0 tools like blogs, wikis, and online discussion (Beach, 2012; Duncan & Barczyk, 2013).

Assuring there is a repository of information for community members to access is another technique of support, which addresses content. Use of wikis would be ideal allowing novice teachers a means of reading their peers' work (Hoadley & Kilner, 2005). Blogs and other Internet based technologies like Second Life are innovative possibilities for improving conversation and communication among community members opening the door for sharing information relevant to their practice. Finally, providing the informational context of multiple resources supports community of practice with technology. Providing recommendation where one might find additional books or articles read by more advanced members of the community (Hoadley & Kilner, 2005).

Web 2.0 and Teacher Training

Advances in technology have introduced limitless opportunities for distance communication. The Internet has made possible social interactions that allow members to fulfill social needs attained through traditional face-to-face relationships (Severino & Messina, 2011; Yeh, Huang, & Yeh, 2011). Web 2.0 tools represent an emergent technology born out of the Internet and World Wide Web innovative ideas. Web 2.0 tools give users the freedom to reshape data and harness collective intelligence (Glassman & Kang, 2011). Blogs, wikis, Google Docs are examples of Web 2.0 tools that transform

the relationship of human cognition and processing information making hypertext accessible (Glassman & Kang, 2011).

Research supports PD delivered to teachers via online or virtual resources as an alternative to face-to-face/in person interaction, and this instructional technology promoted retention (Erikson, Noonan, & McCall, 2012; He, 2014; Yeh, Huang, & Yeh, 2011). Erikson, Noonan & McCall (2012) compared rural and non-rural educators and found that ongoing virtual PD promoted retention and improved educators' expertise. (Ostashewski, Reid, & Moisey, 2011) argued online PD for teachers encourages collaboration that is convenient and helpful in building relationships and identity. Use of the constructionist theory made for solid design to explain the social construction of knowledge. Ostashewski, Reid, & Moisey (2011) reported the following benefits of using the online social networking frame as delivery platform: flexibility of location/ time; innovative features of social networking sites and Web 2.0 tools are new for some but accepted by the majority; scaffolded nature of instruction was effective encouraging relationships beyond course activities (Ostashewski, Reid, & Moisey, 2011). Because a large number of preservice teachers have had varied online learning opportunities during undergraduate studies, virtual technology is a feasible means of continuing training in a community provided that all users have been trained to use the technology (Caudle, 2013; Cosmah & Saine, 2013; He, 2014; Neal, Reynolds, & Angle, 2013; Severino & Messina, 2011)

Virtual community members and instructors/mentors need PD to know how to be successful in an online environment (He, 2014; McLoughlin & Alam, 2014; Tur &

Marin, 2015). This would also make teachers comfortable with teaching their students who will be online learners. Knowledge of how to provide instructor presence and consistent feedback are essential elements that make an online experience effective (Caudle, 2013; He, 2014). Teachers must also reflect on their instructional practices and be prepared to share with their students. Participants need time to practice working with the content and technology tools (He, 2014). Through training, users' confidence and self-efficacy improved (Neal, Mullins, Reynolds, & Angel, 2013).

Technology challenges must be addressed as online collaboration becomes a more popular avenue for community building (Nerzanti, 2012). Limitations were introduced in studies implementing exclusively online via Web 2.0 tools (wikis, blogs, Elluminate, Skype) (Nerzanti, 2012). Limitations developed as a result of participants not being familiar with the technology. Research on Web 2.0 tools lack theoretical grounding because most research is focused on wikis and blogs, which introduces limitations when considering other tools like Facebook and Twitter (Wang & Vasquez, 2012). However, when participants are trained to use technology and facilitators incorporate scaffolding to allow for learner autonomy and satisfaction, outcomes are different (Nerzanti, 2012). When participants thought the tools were easy to use, they also considered the technology more useful and satisfying (Tsai, 2012).

E-mentoring

Mentoring has been a way to expose new teachers to the realities of teaching (Butler, Whiteman, & Crow, 2013; Dominguez & Hager, 2013). Through mentor/mentee a relationship, retention is improved since preservice teachers are able to work in

classrooms with mentors a year before teaching, allowing novices to build pedagogy and motivation (Hudson & Hudson, 2013). Some schools do not do as good of a job of providing this support as others. One way to correct this void is through digital e-mentoring. E-mentoring via technology is an innovative way to achieve the same results as face-to-face mentoring (Butler et al., 2013; McLoughlin & Alam, 2015). McLoughlin & Elam (2015) acknowledged the fact that technology can be added workload for students and teachers, which was a sobering point. E-mentoring can be facilitated exclusively through the use of electronic communication; computer mediated communication primary (e-mentoring including face-to-face interaction and telephone use); CMC-supplemental (traditional mentoring with some electronic communication (Butler et al., 2013). Butler, Whiteman, Rodney, and Crow (2013) cited the need for more research on mentoring outcomes,

Mentoring plays a key role in participant satisfaction in research-based teacher training. Virtual learning environments are obstacle courses for many students who perceive they do not have support. This perceived deficit contributes to decreased collaboration of online learners and an increased dropout rate. The results of the study found that mentoring played a vital role in participants' understanding of course content and their ability to construct knowledge that helped them to complete projects and apply prior knowledge toward completing that goal (Dorner & Karpati, 2010, p. 74).

Pros and Cons of e-Mentoring

Use of distance technology for mentoring has been beneficial for mentors and mentees. Research suggested the benefits the mentor experienced were different from

mentee experiences but helpful all the same (Caudle, 2013; Wenger, 1991).

Geographical and timing constraints that become obstacles with face to face mentoring were alleviated for both parties when technology was used to connect. Studies also pointed out mentees learned how to best form the context of teaching with a mentor (Caudle, 2013; Obura, Brant, Miller, and Parboosingh, 2011).

Advantages. Flexibility is a first benefit of e-mentoring noted in research compared to face-to-face mentoring (Aaron, Whiteman, Rodney, & Crow, 2013). The use of real time/ synchronous technology or asynchronous/delayed response technology also provides users with a choice of communication, which provided new teachers the freedom to collaborate with their mentors or other peers (Aaron, Whiteman, Rodney, & Crow, 2013; Dominguez & Hager, 2013). This also minimized the protégé's anxiety linked to insecurities about other's perceptions. Novice teachers were able to more comfortably share things they would not share during face-to-face mentoring.

Secondly, through e-mentoring, mentees were able to experience more reciprocal mentoring relationships. Mentees were able to share and receive using their personal experience, which they are less likely to do in face-to-face environment with in-service teachers. Distance technology reduces social cues that break down communication between mentor and mentee or experienced and protégé teacher resulting from status differences (Aaron, Whiteman, Rodney, & Crow, 2013).

Protégés also profit from having a communication trail inherent with computer-mediated communication (CMC). E-mail, blogs, discussion boards, and wikis produce long-term communication records that can be accessed at any time (Aaron et al., 2013).

The delayed feature of electronic communication allows mentors and mentees the freedom to reflect on messages with time to process their thoughts. They also have more time to critique themselves by reflecting on responses (Aaron et al., 2013).

Disadvantages. Though e-mentoring provides the same effect as face-to-face communication, there are shortcomings (Butler et al., 2013; Severino & Messina, 2011). With e-mentoring, participants do not have the same benefit of visual and auditory cues inherent in face-to-face communication. Gestures through facial expressions and body language (head nod) are lost through electronic communication (Aaron et al., 2013). This increases the risk of misunderstanding between parties (Guo, Chen, Lei & Wen, 2014). A mentor/mentee relationship is not easily built via electronic communication as with face-to-face communication (Butler, Whiteman, Rodney, and Crow, 2013). Tracking a learner's cognition can also be challenging when mentoring from a distance (Guo et al., 2014). Caudle (2013) and Obura, Brant, Miller, & Parboosingh (2011) highlighted the importance of mentors being trained to facilitate effective communication. This is a great point because the mentor is considered to be the expert in the mentor/mentee interaction. Mentors should be trained to ensure successful-mentoring outcomes (Hudson & Hudson, 2013)

Technology can also present obstacles when it malfunctions. This can be aggravating to mentor and mentee, especially those who are not as tech-savvy. Obura, Brant, Miller, & Parboosingh, 2011 argued the barrier of technology weaknesses for the mentee have been illuminated as obstacles. (Obura et al., 2011).

Those less confident with technology also are more concerned about the compromise of confidentiality and privacy (Butler et al., 2013). E-Mentoring cannot use the traditional model of mentoring for electronic implementation because each form of delivery has different attributes; the mentor/mentee relationship must be conceptualized using the constructivist perspective of mentoring to ensure participants' needs are addressed. Butler et al. and Hudson and Hudson took a similar stance in support of mentor training to improve mentee learning outcomes.

Social Presence

Social presence has been the focus of much research and is the way one identifies with a community to communicate, relate, and share their personal qualities in mediated communications (Caudle, 2013; Cui, Lockee, & Meng, 2013; Smith & Tirumala, 2012; Stenbom & Hrastinski (2012). One must feel comfortable and trust the environment to communicate openly using their lived experiences as expertise to make and share meaning in their community (Caudle, 2013; Hudson & Hudson, 2013). One example is a study using a hybrid model of face- to-face and online interactions to determine how social and teaching presence are established in a community of practice. Four mentor teachers and educators in a blended environment struggled sustaining community without social presence (Caudle, 2013). Mentors also needed to be able to identify with the community to effectively support and make learning meaningful (Caudle, 2013). This point addresses teacher presence. Observing online blog posts using CoI components to gauge online design and its effect on educators' experience and successful e-learning. Wright (2014) found that online students were dissatisfied with their engagement with

teachers expressed through feedback and encouragement. This confirms the importance of sound online design and teacher presence (Wright, 2014).

Emotional connection should be included in the definition of social presence especially in online environments (Cui et al., 2013). The lack of physical presence in an online setting makes the existence of social presence thus a legitimate concern. In TLI, a virtual community organizer (VCO) leads the Teacher Leadership Initiative community and facilitated asynchronous and synchronous discussions. State coaches also worked with the VCO to support teachers on a more intimate level. This support varied based on the needs of the participants. Instructional design is necessary to ensure social presence is factored in. A community member's sense of presence when engaged in computer mediated or online communications is equally important (Smith and Tirumala, 2013). Twitter has gotten positive reviews from student. Though students enjoyed using Twitter as a social media tool, their perception of its value for learning did not improve.

Online Collaboration

Virtual collaboration can be facilitated through the use of synchronous or asynchronous technologies (Nerzanti, 2012). Synchronous communication occurs in real time, which means participants are communicating at the same time. Examples are phone call, chat, and Skype. Asynchronous communication does not occur at the same time allowing participants to respond to messages online at the different times. Examples of asynchronous technologies are email, weblogs (blogs), video blogs (vlogs), discussion board, podcasts, and forums.

Asynchronous communication. Online asynchronous communication promotes the social construction of knowledge (Lee & Tsai, 2011). Lee and Tsai (2011) adopted the idea of transition community, which focused on collaboration among learners. A transition community resembles a community of practice that helps to translate or transform social practice between collaborators and professional community. Ostashewski, Reid, & Moisey (2011) confirmed this point arguing the value of convenient collaboration. Disadvantages of asynchronous communication are the lack of immediacy; low post rate; off-topic response; incoherent structure in corresponding messages; and lack of visual cues. Positive attributes include the promotion of problem-solving, deep reflection, self-regulation and pacing; with no geographical or time constraints (Lee and Tsai, 2011; Nerzanti, 2012).

Researchers have questioned the effectiveness of online learning when students are passive in their learning (Gasson and Waters, 2013). Students in this category do not actively participate but lurk and engage more in what Bandura (1977) described as vicarious learning. Assessing passive learning can be challenging (Gasson and Waters, 2013). For this reason, this dissertation study highlighted non-mandatory participation in virtual community building. Motivation to participate will allow for observing how participants use the experience despite their activity or passivity.

Current research has evaluated the value of Facebook in promoting learner engagement asynchronously (Cui et al., 2013; Guo, Chen et al., 2014; Kucuk & Sahin, 2013). Results showed when Facebook feedback was an effective way to engage participants cognitively through online discussion. Guo, Chen, Lei and Wen's (2014)

found a correlation between high quality the feedback and participant cognitive engagement. This mixed methods study was comprehensive and significant encouraging mentor/teachers to give information, ask deep and thought provoking questions, and promote reflective discussion to engage online learners cognitively. Providing encouragement, posting questions, and facilitating dialog during discussions were positive attributes teachers appreciated as high quality. Those who exhibited deeper thinking in posts were more cognitively engaged in peers' later responses, and high-quality responses encouraged more profound thinking (Guo et al., (2014).

Through asynchronous communication, learners benefit from having to think critically through reflection and communicating their ideas to others (Weil et al., 2013). Asynchronous discussion forums have been used to engage learners in case-based online discussions creating a community of practice and promoting social learning (Weil et al., 2013). Preservice and early career teachers are sometimes afraid to share their ideas among veteran teachers (Tammets et al., 2012). Participants in asynchronous discussions were able to think independently and share their thoughts and opinions via the online discussion that increase their confidence. They were also able to analyze what others thought and relate them to personal ideas (Weil et al., 2013). Asynchronous discussion board is not a new form of technology but is effective in engaging novice teachers in social learning of content and pedagogy (McLoughlin & Alam, 2014; Tur & Marin, 2015). Benefits included using technology to prepare literacy teachers and to promote extended PD (Tur & Marin, 2015).

Synchronous communication. Synchronous collaboration has been used to promote real-time interaction among users allowing them to share through discussion (Kumarappan, Hostetler, & Angles, 2014). Users preferred video conferencing when considering traditional lecture/instruction (Kumarappan et al., 2014; McConnell et. al., 2013).). Use of the Technology, Pedagogy, and Content Knowledge framework (TPACK) to discuss implications of students in the US and India collaborating through video conferencing technology is an example. Students generated content using cloud technology such as Google Drive, which allowed students to share as they learned. McConnell et. al, (2013) conducted this qualitative study and highlighted the benefits for video conferencing: the geographical and time constraints. Data analysis showed video conferencing was an effective means of facilitating professional community building (McConnell et al., 2013).

There are pros and cons to using synchronous technologies (Kumarappan et al., 2014; McConnell et al., 2013; Sela, 2013; Weil et al., 2013). Petty and Farinde (2013) preferred the asynchronous platform, but there is still need for research to determine which platform is more useful and beneficial in the online environment. Synchronous formats provide less time for participants to gather and reflect on their thoughts/postings (Weil et al., 2013). Web based conferencing is similar to face-to-face, but time zone differences presented challenges that could be eased through blended learning (Kumarappan et al., 2014; Wagner, Garippo, & Lovaas, 2011).

Blended learning. Blended learning levels out imperfections of computer mediated communication and face-to-face interaction by joining them. This integration

helps novice teachers manage their knowledge and self-efficacy through socialization and collaboration (Yeh et al., 2011). Research shows participants spent more time on task via virtual conferencing but were subject to have interruptions that are common for the home setting (phone, pet, and children). These distractions were not present in the face-to-face setting. Synchronous formats provide less time for participants to gather and reflect on their thoughts/postings (Weil et al., 2013). Social learning is necessary for preservice teachers, but it is equally important that cognition is diversified (Sela, 2013). This variety can be accomplished via face-to-face interaction, blend learning with face-to-face and online communication, and total online interaction with synchronous and asynchronous tools. Sela (2013) used four cycles of action research via face to face interaction, blend learning with face to face and online interaction offering multiple perspectives to support conclusions.

Motivation, creation of peer relationships, achievement, and collaboration were some positive results of synchronous mediated communication (Kucuk & Sahin, 2013; Koles & Nagy, 2014; Roseth, Akcaoglu & Zellner, 2013). Motivation is an essential element that encourages one to learn and think critically (Bandura, 1977; 1995). Motivation is also what encourages the formation of learning communities in blended and online settings (Kucuk & Sahin, 2013; Lave & Wenger, 1991; Wenger, et al., 2002). Though research offers varying perspectives for asynchronous and synchronous forms of communication (Kumarappan et al., 2014; McConnell et al., 2013; Sela, 2013; Weil et al., 2013), the use of both types of technology allows designers to integrate elements of

technology, content and pedagogy to meet the needs of learners and the demands of the context (Roseth et al., 2013).

Conclusion

Overall, there is overwhelming support for novice teachers needing time to build their professional identity during the first years of teaching through a community of practice (Hasten & Russell, 2011; Ostashewski et al., 2011; Severino & Messina, 2011). Complaints that PD has been inconsistent and sometimes ineffective in meeting the needs of new teachers has made the creation of online professional learning communities a necessity to guard against attrition (Thomas & Reith, 2011; Timms & Brough, 2012; Tur & Marin, 2015).

Virtual community building is a way to overcome the obstacles like busy teaching schedules, poor timing and geographical constraints hinder consistent face-to-face meetings. A choice of synchronous or asynchronous technologies offers flexibility and encourages higher order thinking as participants interact, ask questions, share ideas, and evaluate comments. Web 2.0 tools are innovative, free, and commonly used by many teachers, professionally and personally (O'Bannon & Britt, 2012). However, there is still need for research on developing community in blended and online environments that use Web 2.0 tools, especially when participation is voluntary (Baran & Cagiltay, 2010; Cui, Lockee & Meng, 2013; Hudson & Hudson, 2013; Kucuk & Sahin, 2013). For this reason, this study addressed specific elements of early career teachers' voluntary participation in an online community using Web 2.0 tools to become more effective teachers.

The majority of the research analyzed in this literature review used the qualitative design, which was helpful in providing models for creating this study and informing this analysis with descriptive data. Multiple quantitative and mixed method studies were also included to balance the research making room for generalizing results to varying populations.

Chapter 3: Research Method

The purpose of this qualitative case study was to explore the phenomenon of how early career teachers build community using Web 2.0 tools that help them to bridge theory and practice. Communities of Practice can be defined as groups of people who share a concern or interest in something they are learning how to do better by interacting regularly. Web 2.0 is the second generation of the World Wide Web, which improved the functionality of the Web and allowed for increased levels of interaction. Blogs, wikis, and social networking are examples Web 2.0 tools.

Research Design and Rationale

This qualitative study is based on the following research questions:

RQ 1: What influence does belief in collaboration have on early career teacher engagement in virtual communities of practice?

RQ 2: How does the voluntary participation of early career teachers in virtual communities of practice impact their involvement in community activities?

RQ 3: What are the perceptions of early career teachers regarding the use Web 2.0 tools to collaborate virtually with other teachers?

Central Concept

The virtual collaboration of early career teachers in a CoP was the central concept explored in this study. The CoP is a common framework used to explain groups of people who share a concern or a passion for something they do. Through regular interaction, group members learn how to perform the skill better (Lave & Wenger, 1991). Early career teachers need opportunities to interact collaboratively with peers to build

community but are less apt to voluntarily participate in PD designed for this purpose (Caudle, 2013; So, 2012). The CoP theory provides a knowledge structure that is responsible for creating and sharing knowledge (Wenger et al., 2002). This framework is appropriate because it provides a foundation to explain why early career teachers may strengthen their pedagogy while sharing and learning in a CoP (Cavanaugh, 2012; Lave & Wenger, 1991).

I also used the lens of social learning theory to emphasize the importance of socialization that can be achieved through modeling, mentoring, and social learning in the cognitive processes for adult learners (Bandura, 1977). It is assumed that learning is a social phenomenon, and the learning outcome is the product of one's interaction in a social community. The shared values, beliefs, languages, and processes help to form knowledge; learning processes and community membership are inseparable. Learning is connected to community membership. A feeling of belonging helps one to shape personal identity in the group. As learning changes, one's identity and relationship with the community also changes (Lave & Wenger, 1991).

Research Tradition and Rationale

Qualitative methodology has been chosen for this study because it aligns with the research questions and takes into consideration a small sample size. Of the five qualitative traditions of inquiry, case study approach was used for this study, which focused on early career teachers as primary units of analysis. The qualitative method also allowed for descriptions and details that help to provide insight into this issue and possibly provide answers to my research questions (Chenail, 2012).

A qualitative researcher should attempt to understand the participant's context or setting, which in this study centers on the concept that meaning is generated through social interaction with a human community (Wenger, 1998) Taking in consideration theory, the conceptual framework, and the gaps in research, this approach provides more evidence of the alignment of all of the research elements. The case study approach is interpretive and is designed to reveal how people understand their experiences that help them to make meaning of their worlds (Merriam, 2009).

In this study, I sought to explore the phenomenon of how early career teachers build community during blended learning that included the use of Web 2.0 tools. The use of the case study approach enabled me to explore an issue through one or more cases within a context or setting and answer the why and how questions that emerged about a phenomenon in a real world context (Yin, 2009). The case study tradition is appropriate as it allows for discovery of what happened and what participants experienced during the single lived experience of the TLI (Maxwell, 2005; Yin, 1994).

Case studies enable the researcher to provide in-depth explanation through descriptions of real-world situations (Yin, 2009). This versatility is also characteristic of the phenomenological, grounded theory, narrative, and ethnographic approaches. As I considered the best approach for my study, I also had to consider these approaches. The phenomenological approach was the second choice for my study because a phenomenon was being observed. The goal of phenomenology is to describe an individual(s) lived experiences taking into consideration the phenomenon, the person's experience, and comparison data for several who have experienced the phenomenon

(Moustakas, 1994). Grounded theory is an approach that can be used with qualitative and quantitative designs. Since the goal of this study was not to create a new theory, grounded theory was not used. The narrative approach was also appropriate for my study. Description is a characteristic that case studies, narratives, and phenomenology share. The narrative approach helps a researcher analyze the lived experience of a respondent. Stories or narratives written chronologically help to support the researcher's analysis of the theoretical framework in a narrative study. Since I was not looking to tell a story from one participant's perspective, this approach was not a good fit for this study. In considering the tradition of ethnography, one seeks to experience a different culture by observing or living it. Since this was not the aim of my study, the ethnographic tradition could not be used. The case study uses other data sources that enable interpretation. In this study, I explored a case of early career teachers to provide understanding using the words of the participants, artifacts of their involvement in the community of practice, and observations. Qualitative methodology was chosen for this study because it aligns with the research questions and takes into consideration a small sample size. Of the five qualitative traditions of inquiry, the case study approach was used for this study, which focused on early career teachers as primary units of analysis. The qualitative method also allowed for descriptions and details that help to provide insight into this issue and possibly provide answers to my research questions (Chenail, 2012).

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conceptual framework, and the gaps in research, this approach provided more evidence of the alignment of all of the research elements. The case study approach is interpretive and is designed to reveal how people understand their experiences that help them to make meaning of their worlds (Merriam, 2009).

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The phenomenological approach would have been the second choice for my study because I was exploring a phenomenon. The goal of phenomenology is to describe an individual(s) lived experiences taking into consideration the event, the person's experience, and comparison data for several who have experienced the phenomenon (Moustakas, 1994). Grounded theory was an approach that I could have used with the qualitative and quantitative designs. Since the goal of this study was not to create a new approach, I did not use grounded theory. The narrative approach was also appropriate for

my study. Description is a characteristic that case studies, narratives, and phenomenology share. The narrative approach helps a researcher to analyze the lived experience of a respondent. Stories or narratives written chronologically contribute to the researcher's analysis of the theoretical framework in a narrative study. Since I was not looking to tell a story from one participant's perspective, this approach was not a good fit for this study. In considering the tradition of ethnography, the researcher seeks to experience a different culture by observing or living it. Since this was not the aim of my study, I did not use the ethnographic tradition. The case study uses other data sources that enable interpretation. In this study, I explored a case of early career teachers to provide understanding using the words of the participants, artifacts of their involvement in the community of practice, and observations.

Role of Researcher

In a qualitative study, the researcher plays a valuable role. Ultimately, the researcher is the data collection instrument using skills to gather and report the information that determines the richness of the data (Denzin & Lincoln, 2003). In quantitative data collection, the researcher may use questionnaires or programs to mediate data. A qualitative researcher must be familiar with the human instrument by describing personal characteristics such as biases, expectations, or explaining reasons for conducting the study (Greenbank, 2003).

Two years before carrying out the study, I mentored teacher leaders from several states. The professional relationship between researcher and participants is one of shared experience in the TLI community and knowledge of the competencies.

During this study, I had no supervisory power over the participants. While I was a coach during the pilot year, I was not in the second year. To eliminate the idea that I was a supervisory figure, the Interview Protocol Form (see Appendix A) explained my role as the researcher and provided participants with a choice to participate without the fear of negative consequences. To guard against research biases, I kept a journal and wrote reflections on the decisions I made in every aspect of design, data collection, and interpretation. I shared these thoughts with qualitative researcher and faculty mentor Dr. Jennifer Smolka.

Procedures detailed in the interview protocol (see Appendix A) were used to guide this process and adequately inform participants of research expectations. Use of a reflective log to assess personal perspectives is one mechanism I used to guard against bias. Unless there is deep self-assessment, a researcher may introduce biases in the research (Yin, 2009). One way to test for bias is by one's acceptance of contrary findings (Yin, 2009). I reported preliminary findings during data collection to my mentor Dr. Jennifer Smolka for alternative suggestions or descriptions produced contradictions thereby reducing bias (Yin, 2009).

Journaling was used to promote researcher self-assessment to guard against bias. My background as a minimally supported, alternately certified teacher who is passionate about supporting early career teachers could have introduced bias. Strategies for self-assessment and objectivity were used to counter this bias. Thinking intently about what the respondents stated and disregarding personal judgment in data interpretation prevented bias. Peer review also guarded against this type of bias. Finally, the use of

digital management software for organizing data helped to bolster quality in data analysis.

Methodology

Participants

The participants in this qualitative case study were early career teachers who participated in the first and second cohorts of the TLI. At the time of the study, the participants had less than 5 years of teaching experience and lived in different states across the nation. Teachers participated in the TLI through blended modes of delivery that included virtual small group meetings, online discussion threads, webinars, and occasional face-to-face meetings. Participants for this study were selected based on their membership in the TLI learning community and active participation in synchronous and asynchronous communications throughout the leadership experience. These participants were to have participated in at least one of the bimonthly webinars and contributed to asynchronous discussions that occurred between webinars. Data were collected to determine how these activities impacted their practice.

Sampling

Because I used qualitative methodology and targeted a small sampling size of 8 participants for effectiveness (Miles & Huberman, 2014; Patton, 2002). Participants were chosen based on the following criteria: less than 5 years teaching experience and voluntary participation in the TLI blended community building experience. The participants were members of the TLI Year 2 or Year 3 cohort groups. The actual sample size for this study was 5 participants.

I selected the teachers in this case through purposeful sampling. The National Education Association had determined 30 participants from Year 1 were early career teachers. Twenty-two teachers were invited to participate in the study; the target sampling size was 8 participants. Saturation is a consideration when determining a sample size. However, standards for justifying saturation in qualitative research are not concrete and lack rigor (Marshall, Cardon, Poddar, & Fontenot, 2013). A minimum of 15 interviews is the suggestion for a single case study (Marshall et al., 2013). This size also takes into consideration attrition. I also did not want to have too many participants, making it difficult to manage the mass amount of collected data (Miles & Huberman, 2014; Patton, 2002; Yin, 2009).

The sampling strategy used in this study was homogeneous sampling. I chose this strategy because the research focused on people with similar social characteristics early career teachers (Miles et al., et al., 2014). Through a limited focus, qualitative researchers are purposed to determine the logic and processes using a small sample selected purposefully, which is why I chose this type of sampling. This minimizes bias and nets more meaningful data (Patton, 2002). Unlike quantitative sampling, larger sample sizes allow for generalizability (Miles & Huberman, 2014; Patton, 2002).

Instrumentation

The qualitative case study approach offered many opportunities for data collection. The case study method uses other data sources that enable interpretation. In this study, I explored a case of early career teachers to provide understanding using the words of the participants, artifacts of their involvement in the community of practice, and

the recorded Blackboard Collaborate webinars, which show discussions recorded in real-time. In this study, I used interviews, observations of discussions during webinars, synchronous discussions among teachers from the same state, and artifacts derived from participants' prework for webinar discussions and asynchronous posts. These regional groups were more intimate than the cohort group and provided a better description of members. The examination of data from these sources triangulated data and helped justify themes adding to the validity of the study (Maxwell, 2005; Yin, 2009). In this study, interviews, observations of synchronous interactions, and artifacts that include synchronous and asynchronous postings completed during and between webinars made up the sources for triangulation.

The interview protocol (see Appendix A) consisted of informing interviewees for the project, time, date, and location, and estimated the length of the interview (Appendix A). Interviewees were also aware of the plan for the interview, the purpose of the interview, pertinent definitions, an explanation of how the information was used, and the option of not answering questions that made them uncomfortable. I aligned the interview questions with the research questions and qualitative design. They focused on following notions: participants' ideas on the link between collaboration and engagement, the impact of the status of participation (voluntary/mandatory) on their motivation, and their understanding of using Web 2.0 tools for building community.

I conducted interviews via telephone and recorded conversations for later transcription allowing the researcher to make judgments about gestures and hear vocal inflections that may lead to interpretations and descriptive data (Patton, 2002). The

interview questions helped provide answers to all of the research questions as participants were asked to talk about their views about collaboration in RQ 1, the impact of voluntary participation on personal engagement in RQ 2, and their perception of using Web 2.0 to collaborate with more experienced colleagues in RQ 3. At the end of the interview process, participants were asked an open-ended question to share information that may not have been referenced during the interview creating a door of opportunity for future questioning, if deemed necessary.

I made observations in the study in the natural setting primarily through viewing real-time recordings of Blackboard Collaborate webinars. The benefit of making direct observations of these real-time recordings was my presence was unobtrusive. My comments helped inform RQ 2 since they show the quality and extent of participants' involvement in community activities (see Table 1). Observations helped me observe participants' behaviors in the virtual community, which verified or nullified information obtained during the interviews.

Artifacts used in this study were the products of asynchronous communications, such as Collaboratory discussion thread and independent study pre-work designed for reflection and planning. Participants created and responded to posts in the CTQ Collaboratory thread, a virtual space for sharing ideas through asynchronous posts. This data source was helpful in RQ 2 as indicated in Table 1 by the frequency of responses and whether the replies added value to the discussion. For RQ 3, the artifacts provided supplemental information to connect to interview data regarding participants' perceptions

of Web 2.0 tools used for virtual collaboration with experienced colleagues. These recorded interactive posts clarified inferences made about participants' perceptions.

Table 1 shows which data sources answer the research questions.

Table 1

Research Questions and Data Source Alignment

| Research question | Interview | Observations | Artifacts |
|-------------------|-----------|--------------|-----------|
| RQ 1 | X | | X |
| RQ 2 | X | X | X |
| RQ 3 | X | | X |

During this study, I used the following applications for the research process: ATLAS.ti (qualitative data analysis program), Smart Record (recording interview), and Notes HD (storing articles to be annotated). Having all of these applications on the same iPad made it easy to access and transition between apps. This use of technology was necessary because it saved time it takes to access software on multiple devices. It also was easier and more efficient for organizing information safely in one place. I decided not to pay for transcriptions and used Smart Record to record the interview for easy review in transcribing. Use of the ATLAS.ti matrix to compile interview data allowed for an efficient organization for analysis.

Data Analysis

For the research process to be effective, qualitative researchers must consider data analysis prior to collecting, reviewing, and analyzing the data (Yin, 2009). I consulted

the CoP framework and social learning theory to ensure alignment (Miles et al., 2014; Patton, 2002). Matrices for data compilation helped to organize mass amounts for interview data and discover patterns and themes that may emerge during data analysis. This was also a more systematic approach to synthesizing the data to form interpretations (Miles et al., 2014; Patton, 2002).

Creating a priori codes for precoding before data collection started the first stage of organization and analysis (Patton, 2002). When data were classified and coded, it became easier to describe and organize observation data (Patton, 2002). These data were obtained systematically from interviews, observations, and artifacts. Initial codes (see Table 2) were created from theoretical frameworks and take in consideration the research questions (see Appendix B) to ensure there is alignment. Following each interview, transcription occurred immediately to keep the results fresh for more accurate coding and analysis (Maxwell, 2005). Manual transcription was the most cost effective route and allowed me to become more familiar with the content. This improved observance of the trends prior to storing data in ATLAS.ti.

Table 2

A Priori Codes

| Word/Concept | Code |
|-------------------------|-------------|
| Collaboration | COLLB |
| Engagement | ENGMT |
| Voluntary participation | VOL PRTCP |
| PD | PROF DEVL P |
| Community | COMMTY |
| Motivation | MOTVN |
| Web 2.0 | WB2 |
| Belief | BLF |
| Perception | PRCPT |
| Face to face | F2F |
| Mentor | MNTR |
| Community of Practice | CoP |
| Virtual(ly) | VRTL |
| Computer mediated | CMC |
| Reflection | RFLN |

Data Interpretation Plan

Developing codes sets the stage for qualitative analysis. I used the CoP framework and social learning theory along with research questions (see Appendix B) to create codes. Once transcribed, I stored interview data in ATLAS.ti for further analysis of codes and detection of emerging patterns and themes. Use of ATLAS.ti provided a visual of the codes apparent in each interview. As shown in Table 2, codes created before testing the data collection tool helped with organization. I derived these codes from the

research questions (see Appendix B) and based them on CoP framework and social learning theory. To achieve internal validity, audio, transcriptions and other coded documents was triangulated in this study.

Before transcribing interview data, I listened to the interview to set the stage for analysis. As I transcribed interviews, I also wrote memos about what I was hearing; I created possible ideas about relationships and categories (Maxwell, 2005). The creation of notes helped capture the analytic thoughts about the interview data, which led to other ideas or interpretations (Maxwell, 2005). Other options for analysis included creating categories and themes to more deeply analyze descriptive data.

Braun and Clarke's (2012) step-by-step guidelines directed the thematic analysis in this study. The steps included (1) becoming familiar with data, (2) generating initial codes, (3) reading each transcript for immersion, (4) reviewing themes, (5) defining and renaming themes, and (6) producing the report. Using this process allowed for thorough analysis. The goal was to ensure the evidence was detailed and believable through analysis that was reflexive and iterative (Braun & Clarke, 2012).

Issue of Trustworthiness

To ensure trustworthiness in this qualitative case study, I used strategies to confirm the rigor and promote quality in the research (Patton, 2002; Shenton, 2004). Being objective and remaining neutral are traits that promote a balanced and fair perspective. I used a self-assessment before collecting data and used a reflective log during data collection to develop reflexivity. This technique helped to establish trustworthiness in my data collection and how I interpreted and presented those

interpretations. Qualitative researchers should consider theoretical soundness and use credibility to promote internal validity, transferability to promote external validity, and confirmability to promote objectivity (Lincoln & Guba, 1985).

Credibility

Credibility is one of the most important elements in establishing trustworthiness (Lincoln & Guba, 1985; Shenton, 2003). This study explored teachers' perspectives on virtual participation in a CoP as truthful. I used rigorous methods for systematic analysis of the data; I accurately recorded responses of the participants to describe their experiences with vivid details. Using naturalistic inquiry to minimize manipulation on my part also enhanced credibility and purposeful sampling. I carefully reviewed documents to ensure the interpretation and analysis of data are credible.

Using integrity in the analysis by assessing my predispositions and biases toward findings was one strategy used to make findings reliable. I listed and discussed my dispositions and prejudices with a research colleague (Patton, 2002). I also used the reflective journal regularly to guard against bias. Use of matrices allowed me to organize data inductively to find alternative patterns, themes, and competing explanations, which also improved credibility (Patton, 2002).

Triangulation

Triangulation is the use of multiple methods of data collection and analysis to strengthen confidence in the conclusions and validate analysis (Shenton, 2004; Patton, 2002). Most of the data collected resulted from individual interviews, observations, and artifacts that provided diverse ways of observing the same phenomenon (Patton, 2002;

Shenton, 2004). This study used interviews, observations of synchronous interactions, and other artifacts such as the discussion posts and webinar pre-work to show participants' involvement in the community of practice, and observation data to verify the results of the study.

Transferability

The extent to which one can apply the findings of a study to other situation relates to transferability, which is a critical factor in qualitative research. Transferability is important in establishing external validity (Merriam, 1998). Because of the small sample size in this study, it would be impossible to draw conclusions to be applied to other populations. However, providing sufficient contextual information for this case study helped the reader make the determination for transferring results and conclusions to other situations (Shenton, 2004). To lend to the external validity of this study I provided the following information: the number of organizations participating in the study; restrictions in the type of people participating in the study; number of people involved in synchronous interaction; data collection methods; number and length of data collection sessions; time period of data collection (Shenton, 2004).

Dependability

For reliability, positivists use techniques to ensure comparable results would be attained if the work was repeated with the same context, participants, and methods (Shenton, 2004). Lincoln and Guba (1985) argued the close connection between dependability and credibility. I used descriptive details to address the issue of

dependability, which would assist other researchers in future replication of this research (Shenton, 2004).

Two techniques I employed to ensure dependability were triangulation and audit trail. I used an audit trail to provide a detailed explanation of data collections techniques, application of methods, and justification of research findings. I also used evidence from numerous studies to support the findings in this study. These techniques ensured trustworthiness and rigor, which also promoted validity.

Confirmability

To further confirm the objectivity of the finding, confirmability was used as validation (Wahyuni, 2012). Confirmability is the degree to which one can endorse the findings are representative of the participant's experiences and not the researcher's preferences. This was one reason a reflective journal was used to share personal predispositions and reduce investigator bias (Miles & Huberman, 1994). Triangulation of data sources also reduced the effect of investigator bias. I shared the underpinnings supporting my method and decision-making. I included the reasons I favored one approach over other approaches and explained weaknesses in techniques that cause limitations (Miles & Huberman, 1994). This step also elucidated data collections procedures to promote ensure trustworthiness (Merriam, 2009).

Ethical Concerns

The proposal and other relevant information were submitted to Walden University's Internal Review Board (IRB) providing evidence of the ethical nature of my study. IRB issued number 02-24-160254223 to this study. Participants received an

interview protocol form (See Appendix A) detailing informed consent. Participants received fair disclosure prior to agreeing to the interview, which detailed the voluntary nature of the study; risks and benefits of participating in the study; no compensation guidelines, confidentiality agreement (See Appendix B); and university contacts for further questions.

Considerations were made for ethical use of participants' time in participating in interviews. Member checks were conducted to give participants freedom to check the data analyses to ensure interpretations align with original statements. This technique confirmed objectivity leading to more reliable results. I followed IRB regulations through each stage of the study.

Precautions were taken to store and protect data. Interviews were recorded using Atlas.ti on iPad. Audio was recorded on Smart Recorder iPad app and logged. Transcriptions of interviews were processed manually and saved on a jump drive. Data were organized by folders and stored on one jump drive and backed up on a second jump drive.

Summary

The purpose of this qualitative case study was to explore the phenomenon of how early career teachers build community during blended learning that included the use of Web 2.0 tools. I analyzed the influence of teachers' perception of collaboration on their engagement in virtual communities of practice. The study also examined how early career teacher's voluntary participation in virtual communities of practice impacted their

teaching pedagogy. I also factored in teachers' perceptions of building community using Web 2.0 tools in this analysis.

Empirical data were collected using an individual interview and focus discussion as 5 participants shed light on building community through blended learning PD for teacher leaders. I triangulated data using multiple sources for analysis and theme development.

I contributed to the knowledge and literature about early career teachers' voluntary participation virtual PD to build community and improve their practice. Implications for this study could benefit K-12 teachers, administrators, PD trainers, and students.

Chapter 4: Results

The purpose of this qualitative case study was to explore how early career teachers built community during blended learning that included the use of Web 2.0 tools. I investigated how the voluntary participation of early career teachers in a virtual community of practice and their perceptions of collaboration impacted their motivation to engage in community activities. I also focused on how effective the virtual medium was in helping teachers connect their learning to their practice. The study was guided by the following research questions (RQ):

RQ 1: What influence does a teacher's belief in collaboration have on their engagement in a virtual community of practice?

RQ 2: How does an early career teacher's voluntary participation in virtual communities of practice impact their level of motivation to meet TLI guidelines for participation?

RQ 3: What were early career teachers' perceptions of building community and learning using Web 2.0 tools (Skype, Zoom, blogging, social media, and Google Hangout)?

RQ 1 was designed to explore teachers' beliefs about collaboration and how those beliefs influenced engagement in a virtual community of practice. In RQ 2, I examined how the participants' voluntary participation in a virtual community of practice impacted the quality and extent of their involvement in community activities. The goal in designing RQ 3 was to explore teachers' perceptions of using Web 2.0 tools to collaborate virtually with other teachers.

Chapter 4 addresses the setting, participants' demographic information, and method of data collection. The research questions provided a methodical organization for the research findings that highlighted teachers' beliefs in collaboration that motivate voluntary participation in a virtual community of practice facilitated using Web 2.0 tools. Outlined are themes that elucidate the impact of virtual social learning on teachers' engagement in community activities, their motivation to collaborate, and application of their learning.

Research Setting

Participants in the study learned about TLI through their association. In many cases, teachers were recommended based on positive attributes observed by school or association administration. They were offered a small stipend of \$1,500 dollars for participating in the year-long obligation. Initially, only Cohort 2 early career teacher participants who completed the Capstone Project were asked to participate in the study. However, when only one of 22 teachers responded to the request, participants from Cohort 3 were asked to participate. This also included several teachers who did not complete the capstone. NEA, the sponsoring organization, sent out three requests, which netted four early career teachers and one veteran teacher over a 12-week period. No teachers were turned away because the initial goal was to secure eight participants. For this reason, the veteran teacher was accepted in the sample to speak of community building from a veteran teacher's perspective. The TLI is a collaborative partnership among National Education Association (NEA), the NEA, the CTQ, and NBPTS. Participants in the study learned about TLI through their association, NEA. The initiative

was a three-pronged experience exposing teachers to innovative leadership, providing knowledge of content strands related to teacher leadership in policy, instruction, and the association, and helping teachers develop a capstone portfolio. In many cases, teachers were recommended for this year long professional learning opportunity based on positive attributes observed by school or association administration. Participants received a \$1,500 stipend as compensation for their time commitment, which included the following components: biweekly Blackboard Collaborate webinars, CTQ Collaboratory discussion thread, face-to-face meetings with TLI participants in their state, Zoom small-group meetings to discuss content strands, independent study for prework and planning, and completion of a capstone portfolio.

When I considered who would make up the study sample, I invited NEA, the sponsoring organization, to brainstorm. TLI was a 3-year program, and each year a new cohort of teachers was engaged in activities. Since the first year was experimental, and the third year was still in progress, we settled on the second year participants, Year 2 Cohort, as being the best group to include in the sample since they had finished their obligation and might be more willing to participate in the study since their term was finished. We thought these participants would have more time to spare than Year 3 Cohort participants, who were active in the initiative when I was conducting this study. For these reasons, the Year 2 Cohort early career teacher participants who were capstone portfolio completers were invited to participate in the study. However, only one participant responded to the request. Following several weeks with no other responses from potential participants, NEA, the sponsoring organization sent out three additional

invitations. These efforts netted three early career teachers and one veteran teacher over a 12-week period. Because the research proposal included eight participants, all teachers who responded to the invitation were accepted in the study. A total of five participants responded to the invitation to participate.

Demographics

Interviews were conducted with five practicing K to 12 teachers who live within the United States. Two teachers were from the same southern state, one was from a northeastern state, and two teachers represented a midwestern state. Four of these teachers were members of TLI's Year 2 Cohort, and one teacher was a Year 3 Cohort participant. To ensure privacy, I assigned participants pseudonyms: Lauren, Stephanie, Dan, Micah, and Katie.

The intent of this study was to explore how early career teachers build community through blended learning using Web 2.0 tools. Initially, the focus was the perspective of early career teachers, which is why Cohort 2 participants with less than 5 years of teaching experience were invited to participate. However, the unresponsiveness of participants to the invitation prompted NEA to expand the outreach outside of only Cohort 2 participants who were capstone project completers.

The sponsoring organization, NEA, sent out a follow-up e-mail to remind participants of the initial request. I did not have access to contact information. This effort netted one more teacher, which was still too few participants for the study. The next effort was a targeted invitation to two teachers who did not complete the culminating

project for TLI. Another teacher was a Cohort 3 participant. A veteran teacher also responded to the invitation, as well as a lead teacher.

For a 3 or 4-week period, only one teacher agreed to participate. In the face of participant unresponsiveness, the NEA leadership came up with more ideas that would net participants in considerations of IRB guidelines and invited the early career teachers from Cohort 3 to participate. This recruitment resulted in Dan, a veteran teacher, volunteering to participate. After discussing this change with the NEA and my dissertation committee, Dan was included in the study because he offered a unique perspective of the virtual experience as an internal observer by revealing how veteran teacher perspectives differed from early career teacher perspectives. Teachers' experiences with Web 2.0 tools varied from no experience to very little experience to common use and familiarity with the virtual collaboration. The schools represented in the study included public schools with diverse characteristics. One school was located in a suburban area with affluent families. Another was an international school with all ELL learners. Also represented were two Title 1 schools in rural, low socioeconomic settings in the Midwest and in the South.

When these teachers participated in TLI, they were practicing classroom teachers. Though their levels of experience using Web 2.0 varied, administrators considered each participant a high quality teacher with leadership traits, who would benefit from the TLI experience. Some worked in schools with rich professional learning contexts while others were intent on helping to improve the PLCs in their schools with what they learned from TLI. Table 3 describes the overall demographics of the participants.

Table 3

Participant Demographics

| Teacher | Gender | Age | Years of experience | Teaching level | Cohort year | Web 2.0 experience |
|-----------|--------|-----|---------------------|----------------|-------------|--------------------|
| Lauren | F | 49 | 4 | Elementary | Year 2 | Minimal |
| Stephanie | F | 36 | 4 | Elementary | Year 3 | Some |
| Dan | M | 39 | 12 | High school | Year 2 | Some |
| Micah | M | 30 | 4 | Elementary | Year 2 | Extensive |
| Katie | F | 30 | 4 | High School | Year 2 | Extensive |

Data Collection

The data collected in this study were representative of a variety of evidence sources for the purpose of triangulation (Merriam, 2009). Interviews, observations of synchronous Blackboard sessions, asynchronous in-session chatter data, and archived TLI artifacts in the Collaboratory were the data sources used to inform the study. Data were collected from four early career teachers and one veteran teacher, all of whom were participating in TLI.

Interviews

I conducted a semistructured interview with each of the five participants. Four interviews occurred via phone, and one participant interview was conducted face-to-face. This participant preferred I interview her in her classroom after school. I accommodated the schedules of each participant and conducted the other four interviews by phone. Interviews lasted between 20 and 45 minutes and were recorded using the iPad app Smart Recorder. Before ending the interview, I asked for additional thoughts or ideas to

incorporate perspectives that may not have been considered during questioning. The interviews were conducted between late March 2016 and early May 2016. Each participant answered the same questions. The probing questions helped to lay a foundation to support an understanding of the research questions (see Appendix B). The interview protocol (see Appendix A) used in the phone interviews was also applied to the face-to-face interview.

There was only one variation in data collection from the plan presented in Chapter 3. It turned out that one participant and I lived in the same city. This participant was still active in the TLI process and preferred being interviewed in person. This arrangement allowed her to keep her schedule clear since she was still participating in TLI webinars from home. I traveled to the participant's school to conduct the interview at the end of the school day. The interview protocol (see Appendix A) guided the same process used in the phone interviews.

Other data included observation data retrieved during review of the Blackboard sessions. I listened to and transcribed audio conversations. I also observed correspondence from the in-session chatter interactions. My observations of each participant lasted around 90 minutes, and they helped me synthesize interview data with participant responses. I shared the transcribed data and my interpretations of those data with participants for member checking, which helped to add another layer of accuracy. I created a matrix ordered by the semi structured questions. Participants could see their response to each question captured in the boxes under the question, and my interpretations of their responses were included in that matrix. Each participant sent me a

response evaluating the transcribed data for objectiveness and ensured what they said during the interview was correctly interpreted. Each step in this triangulation of data added quality to the analysis (Yin, 2009).

Observation of Blackboard Sessions

Blackboard Collaborate was the Web 2.0 tool used to facilitate synchronous communication among TLI participants. Participants also used Zoom for small group video conferences. TLI facilitators and TLI participants were involved in six modules, which also included guest speaker presentations that complemented discussions. The modules were designed to help teachers become comfortable with each other and discuss teacher leadership content related to instructional, association, and policy leadership. I observed a total of 30 webinars intently looking and listening for each participant's activity in the web conferences.

Though I observed the interactions asynchronously, the recorded modules were an authentic representation of what happened during the synchronous interactions because they were recorded in real-time with no alterations. I used the period of time following IRB approval to access Blackboard Collaborate sessions and conduct observations of each participant in all six Blackboard sessions, which was 30 viewings. I was observing participants' activity and inactivity while they attended the sessions. I listened to the audio recordings of the Blackboard sessions first and then created a transcript of each participant's response during the discussions. While listening in Blackboard Collaborate, teachers were able to make comments asynchronously via the in-session chatter. The chatter is a space that allows participants to asynchronously chat and participate during

webinars without disrupting discussions. Data from the in-session chatter were also recorded with the time stamp for each module's Web conference. Sessions varied in length from 1 hour to 1 hour and 30 minutes. I accessed the 30 sessions over a period of 5 days and listened to sessions, pausing and fast forwarding as necessary to hear participants' responses. Responses were transcribed manually.

TLI participants also attended synchronous sessions discussing the following content strands: Common Core, school redesign, teacher evaluation, or diversity. Each teacher chose one of the four content strands, which would be the focus of their Capstone Portfolio. They then formed subgroups with other teachers interested in the same content strand and had meetings to become familiar with content and share portfolio ideas. These subgroup meetings occurred later in the TLI experience after the six modules were completed.

In-Session Chatter Data

During the Blackboard sessions, TLI participants also used asynchronous technology that added an extra dimension to their collaboration. The chatter is a text-based area, located in the margin of the screen during all synchronous sessions where attendees in the session can type comments and participate in in-session conversations connected to the discussion as needed throughout the session. For example, if a teacher had trouble understanding a concept, he or she could type the question and the facilitator and/or members of the community responded simultaneously while the presentation continued. The chatter dialogue, similar to texting, helped many first time users become comfortable with the virtual setting. Furthermore, because the chatter data from

participants in the study were in text form, it was easy to simply copy and paste, and connect this feedback to their transcribed synchronous feedback.

Archived TLI Artifacts in Collaboratory

The TLI Collaboratory is a repository of asynchronous posts that allowed community members to add a post or respond at their own leisure. In most cases, the Collaboratory stored the homework activities designed to help members become familiar with concepts and gain exposure to research that might be used for the discussions. Members would go in the Collaboratory and read posts, allowing time for reflection and response. Research participants were grouped by their cohort in the Collaboratory. I gleaned all of the posts for each module to note participants' comments. After reading participants' posts, I collected and stored this Collaboratory data in the same file for review and comparison.

Data Analysis

Qualitative analysis is a process that requires the researcher to become very familiar with the data through listening to the interviews, transcribing the interviews, and then reading through the transcripts (Maxwell, 2005; Yin, 2009). While reading and listening to interview data, the researcher should be making notes about relationships and categories (Maxwell, 2005). Analysis can then be achieved in three groups: coding, memos, and connecting strategies like narrative analysis (Maxwell, 2005). I considered all three options in this study. As I collected and analyzed data, I paid close attention to participants' perceptions and beliefs about collaboration and the use of virtual resources

to build community. Analyzing the data also help me to highlight participants' ideas about the impact of voluntary participation on their motivation and engagement.

Data mining is the process of looking at data using multiple perspectives and summarizing that information, which may lead to discovering patterns in the information. Looking at multiple sources of data allowed me to observe how participants' responses were aligned and sometimes misaligned to the story they shared during interview. I was able to find patterns of behavior that were similar among participants. For example, some participants said they appreciated collaboration but may not have contributed in the discussion. This behavior did not match the interview response. The Blackboard discussions were also coded and enabled making comparisons between the interview data and the Blackboard data.

The circumstances I encountered during data collection required persistence and patience. Though there was a huge gap of time between conducting the first interview and the rest of the interviews, I used this time to start coding the data and becoming familiar with ATLAS.ti, which I used to analyze coded data. I had to be consistent in contacting interviewees, who had agreed to participate. Even after several participants had agreed to be included in the study, I had to contact them multiple times to get their signed releases. I used text messaging as a method of gently reminding participants to turn in this form and also to reschedule interview times. Texting promoted convenience and timeliness for all of us. I started and finished all interviews in the same setting.

Coding is the main strategy used in qualitative research for categorizing data (Maxwell, 2005). This categorization of data helped to facilitate comparing and

contrasting interview data to develop patterns and themes. I started out with organizational categories, which were created before interviews and observations (Maxwell, 2005). As I worked with the data, substantive categories emerged that were more descriptive in nature. Theoretical categories I found during analysis were derived from CoP framework and the social learning theory, which framed this study.

I recorded interviews via a Smart Recorder on my computer; then, I listened to each interview before transcribing the interview by hand. After handwriting the first interview and typing it, I found that this process was quite time-consuming. For the second interview, I used the speech-to-text feature of Google Docs and created the transcript. This technique eliminated my having to write out each interview, which saved time without compromising accuracy. I adjusted the procedure for the remaining three interviews. Data were stored in digital folders on my personal laptop, in a folder in my personal email, and in additional cloud storage afforded by Google Docs. This format also made it easy for member-checking. Participants received an invitation to view their transcription and provide comments or corrections.

Following transcription, I used the iPad version of Atlas.ti to apply codes (see Table 2) to the interview data. I read and coded each participant's responses to the interview questions. In most cases, responses were multi-coded. I also wrote memos during open coding and created a matrix to organize the memos connected to the participants' quotations, matching codes and code frequency. I later downloaded the full version of Atlas.ti to my laptop and was able to use the software to make word clouds based on word frequency. I could also see the data more effectively and create different

charts that helped me to understand the codes better. I noted the following theoretical categories emerged as recurring words or phrases in quotations: collaboration, community, technology, and experience. These words are linked to the theoretical frame of the study and the research questions (see Appendix B).

Prior to data collection, I predicted 15 codes (see Table 2), which I penned and later typed. After I transcribed open-ended interview data and Blackboard Collaborate recordings of participants' discussions and chatter interactions, the list of codes increased to 20. Following rounds of examining coded quotations and looking for patterns, I categorized and aligned participants' responses with the research questions (see Appendix B). The categories were collaboration, motivation, and communication. This was an important analytical step because it represented the participants' experiences during the initiative.

Figure 2 is a visual representation of the major categories that emerged during data analysis.

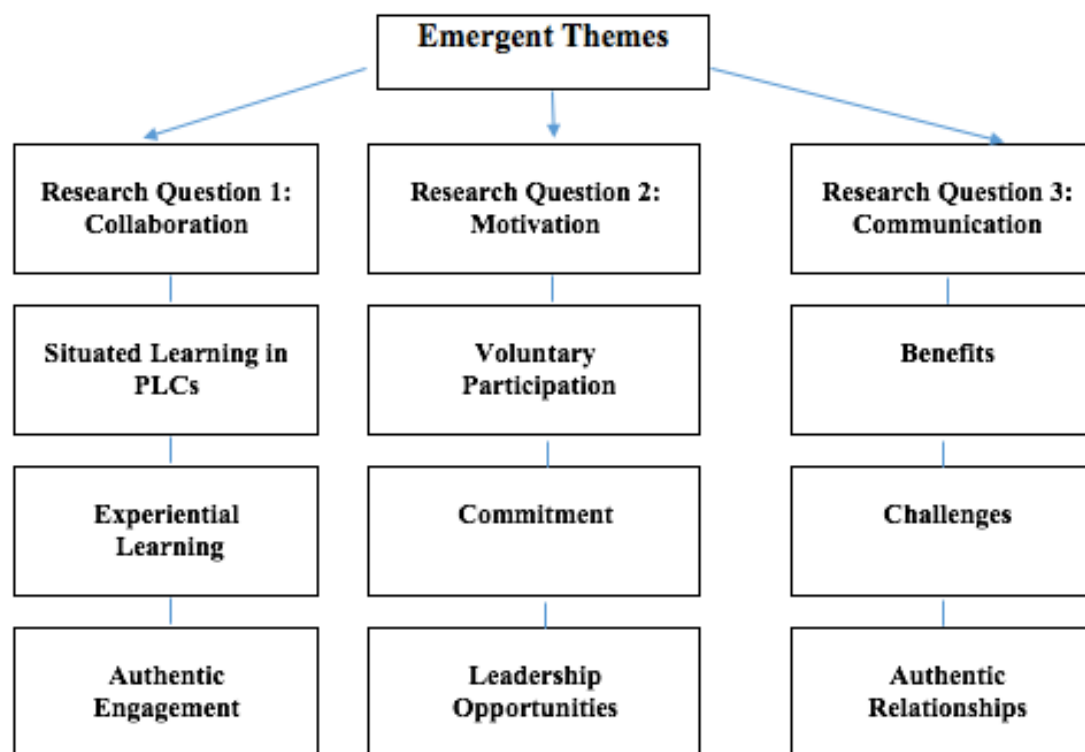


Figure 2. Research questions and emergent themes.

Discrepant Cases

There were some discrepancies between practices and beliefs for two of the five participants. Participants were both technologically savvy and members of professional learning communities in their buildings. Though both were appreciative of the collaboration, they were more comfortable with their face to face interactions in their building. Micah was very honest in calling himself an introvert. After observing the Blackboard collaborate interaction, he did not say anything during the three months of biweekly meetings. He did attend most of the meetings and typed in the in-session chatter very few times. His minimal interaction did not reflect his self-proclaimed technical

ability but did confirm his introversion. “I always felt bad because they ask questions, and I would just cross my fingers and pray I did not get called on.... I was a fly on the wall that no one paid attention to,” he said. Micah was comfortable with being passive during community activities, which hindered the quality of his engagement.

Katie, on the other hand, is a doctoral student in an online program and is accustomed to the virtual setting. Though she said she valued collaboration, she did not find the Blackboard collaborate experience offered her anything she did not know already. She blamed ineffective grouping. “I do wish that TLI did a better job of sort of putting people together that were on the same page.... We were in blogs with people who don't have at all the same professional context that I do.” However, it was apparent that Katie did not add much to the whole group discussions. Katie was more active responding to asynchronous posts in the Collaboratory. Her written responses were substantive.

Evidence of Trustworthiness

In a qualitative case study, the quality of the research is grounded in trustworthiness (Patton, 2004; Shenton, 2004). Since the qualitative researcher is the instrument, strategies to achieve objectivity must be in place to present a balance perspective. In the study, I assessed myself by answering the probing questions for the study. This was one way to encourage reflexivity by sharing researcher's perspective, which also promoted self-awareness and transparency. These factors establish trustworthiness in the collection of data, which also impacted the how the data were interpreted and presented in the research.

Credibility

As a qualitative researcher seeks to establish trustworthiness, credibility is one of the most important elements in bringing this trait to fruition (Lincoln & Guba, 1985; Shenton, 2003). Measures were taken to ensure methods for systematic analysis of the data. Through the use of vivid detail, I accurately recorded participant's responses, which described their experiences. Using naturalistic inquiry through studying real-world situation of building community virtually, there was an openness that helped to minimize manipulation on my part also enhances credibility and purposeful sampling. I carefully reviewed findings observed through virtual interactions and chatter discussions, and compared these data to interview data to ensure my interpretation and analyses of data were credible.

Pre-assessing my predispositions and biases before data collection was one strategy I used to promote credibility. Answering the same questions as the participants and listing personal dispositions and biases was also helpful in encouraging credibility (Patton, 2002). Use of the reflective journal was also used regularly to guard against biases. The methods I used to organize data also improved credibility. Use of matrices improved my ability to visually analyze and uncover patterns, themes, and rival explanations, which led to inductive analysis and enhanced credibility (Patton, 2002).

Member checks also helped to validate the research findings. Member checks were conducted to give participants freedom to check the data analyses to ensure my interpretations were aligned with their original statements. Participants were able to look at the exact interview data and my interpretations of that data to ensure the interpretations

were accurate. This technique also minimized bias and maximized the study's credibility (Merriam, 2009).

Triangulation

The use of multiple methods of data collection and analysis otherwise known as triangulation strengthens confidence in the conclusions and validates analysis (Shenton, 2004; Patton, 2002). Individual interviews, observations of real-time webinar recordings, and in-session chatter comments, and Collaboratory artifacts were examples of data collected and analyzed. These various data points provide multiple opportunities of observing the same person or phenomenon in a different way (Patton, 2002; Shenton, 2004). The interview data provided rich information about the participants' experiences and beliefs, but when I observed the participants' actions or inactions during the synchronous Blackboard collaborate sessions, their action many times supported and sometimes contradicted interview data. Participants' actions during the synchronous interactions, in-session chatter conversations, and webinar pre-work showed participants' true involvement in the community of practice when compared to what they shared during their interviews. This analysis also helped to verify the results of the study.

Transferability

Being able to apply the findings of a study to other situations is an essential trait known as transferability. Transferability in qualitative research is critical in establishing external validity (Merriam, 1998). Rich descriptions of the setting, participants, supporting details such as quotes, and research memos bolster the evidence in the study. Use of small sample sizes in qualitative research eliminates the possibility of drawing

conclusions that allow for making generalizations about populations. However, providing ample contextual information for this case study can help the reader make the determination for transferring results and conclusions to other situations (Shenton, 2004). This study focused on one community of teachers participating in the Teacher Leadership Initiative (TLI), which was a partnership between three organizations: National Education Association, Center for Teacher Quality, and National Board of Professional Standards. A sample size of five teachers offered a variety of perspectives and personal experiences about the use of Web 2.0 tools to build community, which may be relative to other communities. The TLI experience was spread over twelve months. The first quarter designated to community building and gaining information centered on teacher leadership. During the second half, participants spent time in their smaller content strand subgroups focused on completing the capstone portfolio. The webinars covered six modules. Interviews lasted between 30 minutes to 45 minutes, and data collection lasted for 10 weeks. Transferability through descriptions and diverse participant perspectives lended to the external validity of this study.

Dependability

For reliability, positivists use techniques to ensure comparable results would be attained if the work was repeated with the same context, participants, and methods (Shenton, 2004). The easiest way for a researcher to repeat the steps taken is through effective documentation. This ensures another researcher can take the same steps and achieve the same results (Yin, 2009). Lincoln and Guba (1985) argued the close connection between dependability and credibility. Using a variety of data analysis

techniques increased dependability starting with listening to audio recording of interviews multiple times prior to personally transcribing the interview. The first interview was hand transcribed, which was time consuming. I learned that I could be just as effective listening to the interview and using speech-to-text technology in Google Docs to transcribe interview data accurately. This reiterative process helped my processing the information and remembering characteristics of each participant for comparing and contrasting. These descriptive details promoted dependability and will assist other researchers in future replication of this research (Shenton, 2004).

Two techniques were employed to ensure dependability: triangulation and audit trail. I used an audit trail providing a detailed explanation of data collections techniques, application of methods, and justification of research findings. I also used evidence from participants' interviews and numerous studies to support the findings in this study. This process ensured trustworthiness and rigor, which also promoted validity.

Confirmability

Confirmability is the degree to which the objectivity of the findings can be authorized as participants' observations and experiences and not the researchers' ideas (Wahyuni, 2012). Participants' interview data reflected perceptions and in many cases, their behaviors during observations confirmed these beliefs. This is one reason my reflective journal was used to share personal predispositions, reduce investigator bias and strengthen the audit trail (Miles & Huberman, 1994). Comparing data sources also reduced the effect of investigator bias. In-depth analysis to uncover patterns and themes that may not have been evident in open-coding increased the confirmability of the study.

Results by Research Question

Research Question 1: Collaboration

The conceptual framework for the study is framed using Bandura's (1977) Social Learning theory and Lave and Wenger's (1991) Communities of Practice theory. Using these lenses, research questions (see Appendix B) were created and after reiterative code analyses, social learning, community of practice, and constructivist theoretical categories were evident. The first research question (RQ 1) was framed using teachers' ideas about collaboration relating to the level of engagement in a virtual community of practice. RQ 1 was formulated as follows: *What influence does a teacher's belief in collaboration have on their engagement in a virtual community of practice?* The following open-ended interview questions were used to support RQ 1 in the semi-structured interviews:

1. What are your beliefs about professional collaboration?
2. Prior to participating in TLI, what role did collaboration played in helping to shape your practice?
3. What are your perceptions of using virtual resources for community building?
4. How did collaborating with other teacher leaders in TLI impact your participation in this blended community?

Data analysis resulted in the production of the following categories that help to organize this discussion centered on collaboration for RQ 1: situated learning in PLCs, authentic engagement, and experiential learning. PLCs were considered during the development of A priori codes (see Table 2) and situated learning emerged through the

community of practice frame. Authentic engagement and experiential learning emerged as interview data were coded and reviewed multiple times.

Situated learning in PLCs. Participants in the study were involved in the TLI community of practice, which was designed to expose teacher to teacher leadership. Though communities were comprised of veteran and early career teachers, the focus of the study was on early career teachers' use of Web 2.0 tools to build community. There were just over 30 early career teachers that participated in Year 2 Cohort for TLI. Only four early career teachers responded to participate in the study. The fifth teacher was a veteran teacher, who was also a TLI Cohort 2 member. Situated learning challenged the idea that learning was an individual accomplishment. In the model of situated learning, Lave and Wenger (1991) maintained that learning is social process resulting from being engaged in a community of practice. Several participants experienced the first step of joining the community and were more comfortable learning from the sidelines, which Lave and Wenger (1991) called legitimate peripheral participation.

In general, Lauren, a four-year teacher, describes herself as driven by collaboration and community work. TLI was her first experience with a virtual community and had no idea what to expect. Lauren said, "I did not know how authentic relationships could be," stating in disbelief as she discovered the opposite to be true. Lauren found that the virtual climate to be safe yielding fruitful outcomes. "I learned that in a way it's safer and more productive to collaborate with people who are not in your specific situation."

Lauren also appreciated the interactivity of colleagues to make suggestions through sharing ideas. This feedback offered advice and solutions that she found to be helpful. "Finding people that will collaborate with me has really been my greatest obstacle in teaching," Lauren confessed. As she considered her intense school context riddled by mandates and pressures of learning new systems constantly, she gained insight from the community that her school was not alone. She stated:

I haven't been able to find a collaborative community that is strong as I would like for me. TLI helped me get the broader picture of what the profession is about and how we share a lot of the same issues.

Stephanie, who had just shy of five years of experience, was participating in TLI during the study. As a fourth grade teacher, she enjoyed a professional context with what she described as collaboration rich, but also she enjoyed what the virtual setting offered for collaboration. She stated:

The virtual component adds more than what you can have in a school environment like freedom to discuss things and get opinions you don't normally hear. For me and my generation, anytime anything is virtual, it's always appealing, helpful, and beneficial.

Like Lauren, Stephanie agreed with the level of safety she found in her virtual community. She said, "If I were sitting in a PLC with people I am with every day, there's no way I could share certain ideas, but in this other environment, I can get talk through."

Katie, a four-year teacher when involved with TLI, valued collaboration among colleagues as a conduit to improve the function of daily professional processes. She believes that everyone in a school plays a role in this type of progress. “I believe it’s a willingness to take feedback from other people; everybody’s feedback promotes reaching a common goal of improving the professional processes.” A self-proclaimed millennial, Katie felt confident about her predisposition to collaborate and rebuked the top-down approach of her department chair. Katie was one of two participants who was not complimentary of her collaboration experience with TLI. I believe this was because of her professional context, which she described a common ground for collaboration. When she considered her school administrators, not all collaborative efforts were positive, but collaborative planning of initiatives was present in her building. “Collaborative planning was a district initiative that everyone was expected to participate in, and this would manifest itself in a variety of ways depending on one’s understanding of collaboration.” Katie noted these different understandings may inhibit one’s ability to effectively collaborate in certain activities.

Micah also had four years of experience when he participated in TLI. Though he was a proponent on collaboration, he was more appreciative of the collaboration in his professional context. Micah appreciated how virtual tools connected him to the stories of others in other parts of the country. A self-proclaimed introvert, he said the virtual community took him out of his comfort zone. He is still not comfortable sharing his story but gained a better understanding of national events. He stated:

The beauty of the blended community was that I was able to hear stories about education in Mississippi-- we had two; people are in New York, Orange County, California...I don't have a lot of experience outside of my state.” Micah considered this exposure invaluable.

After several levels of coding and discovering patterns, emergent themes began to surface. Connection was one emergent theme that was not addressed in the a priori coding. Both Katie and Micah found it difficult to connect with the other TLI participants. Micah stated:

I really enjoyed the content. I was in the social justice strand, and it was just amazing to learn all about what's going on all over the country, but I never really felt like I really connected with any of them.

Dan is the only veteran teacher interviewed for this study. He offered interesting observation of early career teachers' existence in the virtual community as well as his experience as a veteran. Because Dan is driven by collaboration, he knew he wanted to participate in TLI and declared he could not understand how teachers could really manage without collaborating with colleagues. He stated:

It's important that we collaborate, share ideas, and reflect on things as a group.

There's a range of teaching experience that would not only help new teachers but also veteran teachers to learn new trends that may be coming out.

Lave and Wenger (1991) posited that as members become more proficient in the activities of that community, they progress from legitimate peripheral participation to full engagement. This was proven to be true with Lauren, Stephanie, and Dan, Learning is

recognized more as a process of social participation through situated learning (Lave & Wenger, 1991). However, because Micah would not participate his learning outcomes were limited.

Sharing information is one of the most valuable aspects of becoming engaged in a community. Research has shown that preservice and early career teachers can reflect on personal practice while sharing information that may help other members of the community (Cavanaugh & Garvey, 2012; Lave & Wenger, 1991). Sharing was one theme that continued to surface across interview data, and it was not an a priori code (see Table 2). Lauren connected sharing through virtual resources with building relationships that have fewer complaints. “You're more focused on a goal setting and strategizing; you share experiences, but it doesn't have the same quality that it can have when involved at your building level,” Dan said sharing virtually helps to be able to learn from others across the country to help others who need the information. “I think it's relevant that teachers become more involved in virtual meetings...where two teachers pair up from different schools and go back and forth sharing something similar and different in virtual class.”

Katie was interested in learning more about social justice since this content strand would address the diversity in her district. There is a disproportionately high percentage of students who live in my county who are in poverty and happen to be minorities.” Since she has five years of experience and is working on a doctorate, Katie is far along in her profession and does not struggle with some of the challenges that are characteristic of early career teachers. She was optimistic about learning more to support her research.

There is a possibility that Katie's focus on this rigorous project may prohibit her from connecting a deeper level with the TLI.

Mentoring support is one form of situated learning that exposes new teachers to the realities of teaching (Butler et al., 2013). Though mentoring was on the a priori code list (see Table 2), the early career teachers expressed the need for spending time with more experienced teachers. Lauren, who did not have a mentor said the benefits of collaborating in a community of older teachers validated her perceptions about the education profession. She was inspired by and respected experienced teachers for staying in the classroom and keeping their passion. "Hearing them confirmed the educational concerns that I had and kind of validated my intuition about things even though my experience wasn't as large to match," she said. Lauren visualized a graph of what some of the bigger issues were by listening to veteran teachers' stories. "I appreciate their knowledge and respect them for being in it when they saw the landscape had changed so much." Lauren found it inspiring relate to the veteran teachers' voices and passion about the work. Katie also did not have a mentor when she entered the teaching profession and said she would have loved having the support. "I didn't have anyone to talk to about my experience...Mentorship is missing, and there is a gap. Absolutely, people would benefit from using virtual tools for mentoring."

Stephanie also had a horror story about her non-existent mentoring support. She stated:

I always think of my very first year: My mentoring and coaching came in the form of a plan of improvement. And so, ever since then I have been motivated to find positive ways to become a better teacher.

Stephanie used TLI as a way to help her improve her practice and decided to create a capstone project around mentoring. “TLI has really helped form and steer how I wanted to do the Capstone, which is I centered on mentoring future teachers and young career teachers.”

Authentic engagement. The teachers who struggled most with engagement provided some of the best descriptions of what engagement was and provided thorough explanations of why they struggled with active participation. Micah said one must believe in collaboration to actively engage in this type of PLC. “It all starts with the belief that this is something important for me to participate in whether blended or in person.” Micah also felt he needed more prodding to engage. “I think if I were forced more to interact with other people, it would have had a bigger impact.” Micah, who called himself an introvert also expressed how being in a smaller group setting, even in the webinar with 20 people difficult for him. He also said the absence of making connections inhibited his engagement. “If I had seen anyone from my district I knew or connected with or someone I have collaborated with during the face-to-face meeting, that would have made it a lot easier for me,” Micah explained.

Katie was not engaged in many instances and was very honest about what prohibited her and improvements that could have been made like active partnering and technology accountability. “Collaboration is new for some,” she said. However, Katie did

not feel she encountered people with challenging conversations that led them to be more open, collaborative or willing to engage. She compared this disconnection with her current setting. “Even in my immediate work environment, I work with people all the time, and we talk about these issues. I don’t think age was an issue at all.”

Katie also complained online collaborators must be willing to work together toward a common goal. “You need to be invested and willing to listen as well as ready to share. However, sharing is one thing Katie did not do little based on her self-evaluation. “I think that while the online environment promotes an opportunity to engage with people across the country is awesome, but you also need to have a place to prevent technology from distracting you from the conversation.”

Lauren felt being committed to the task would help prepare her for discussions, which improved her engagement in activities. “When I had not prepared, it was embarrassing, and you just feel like you're wasting people's time not being engaged.” Lauren also said members had to think of the time spent in the PLC as an investment. “I get frustrated because I see it as an investment in a smooth running system..., so the investment seems worth it to me.” She acknowledged many of the people she worked with had different views.

Experiential learning. Despite the varying perspectives among participants, they were all motivated by the experiences of their TLI colleagues. Dan said the varied experiences allowed them a window into schools in different states across the country. “Collaborating with teachers across the country was really kind of with an eye-opener.

Listening to what they had to say and crafting it for my personal views or share with others was special.”

Micah was motivated by the experience of others displays in the virtual setting but was not motivated to participate verbally. He stated:

I was real hesitant just because a lot of the teachers were much more experienced than me, but after seeing the value of especially in the first meeting of the webinar, and seeing all that entailed it affected my motivation.

Because Micah stayed in the legitimate peripheral participation, He never experienced the connectedness that the other teachers experienced.

Lauren found that the experiential learning beneficial. “Hearing them validated the concerns of a profession that I had. So it validated my intuition about things even though my experience wasn't as large to match.” Micah, on the other hand, found the experience beneficial exposing him to new experiences, but it was intimidating because he felt he had less experience to share. "I kept my mouth closed, and another reason other teachers with their vast experience had anecdotes or solid understanding, and it opened my eyes to some things and ideas.”

Stephanie was also intimidated by the experience of other teachers but responded differently than Micah.

Well, some of the things I perceived as challenges, that's just a part of being a young teacher - a newbie...I know for me sometimes I feel hesitant to share and say, ‘What do you think about this?’

She said it took time to get used to that, but embraced the friendly digital environment as a learning environment for everyone, regardless of experience.

Research Question 2: Motivation

The second research question (RQ 2) investigated whether or not the voluntary status of their participating in the virtual community determined their motivation to engage in TLI activities. RQ 2 asked: *How does an early career teacher's voluntary participation in virtual communities of practice impact their level of motivation to meet TLI guidelines for participation?* The following are the interview questions that contextualize RQ 2:

1. Why did you want to be a member of this community? (What factors motivated you?)
2. What are the challenges of being an early career teacher participating in a virtual community with more established teacher leaders?
3. How motivated are you to participate in biweekly TLI activities?

Data analysis resulted in the production of the following categories that help to organize this discussion centered on motivation, voluntary participation, commitment, and leadership. I considered voluntary participation during the development of A priori codes (see Table 2), but commitment and leadership emerged as interview data were coded and reviewed multiple times.

Motivation. Motivation is one of the social learning's four legs: Attention, retention, reproduction, and motivation (Bandura, 1969). Bandura (1969) argued that the learner paying attention to a model is likely to retain information from an experience,

which the learner can then reproduce that experience if there is incentive or motivation. Tammets, Pate, & Laneri (2012) discovered an active exchange of teachers' ideas across organizations produced intrinsic motivation among group members to gain knowledge in an authentic context for effective learning (Bandura, 1977; Tammets, Pate, & Laneri, 2012). Teachers engaged in TLI were required to produce a Capstone project as a culmination of the learning experience. Early career and veteran teachers were grouped based on their interest in four content strands: school redesign, Common Core, social justice and teacher evaluation. RQ2 was designed based on the gap in research on developing community in blended and online environments that use Web 2.0 tools, especially when participation is voluntary (Baran & Cagiltay, 2010; Cui, Lockee & Meng, 2013; Hudson & Hudson, 2013; Kucuk & Sahin, 2013).

Different factors motivated the TLI participants. Micah said someone seeing potential in him and asking him to participate in TLI was the most motivating factor. Micah was also driven by the experience of others displayed in the virtual setting but was not motivated to participate verbally. He appreciated others seeing potential in him and said he was excited to participate in the initiative for that reason,

I think going into it, I was real hesitant just because a lot of the teachers were much more experienced than me, but after seeing the value of especially in the first webinar, and all that entailed it really affected my motivation.

However, Micah's actions did not confirm this motivation when considering he never made comments, verbal or written, in Blackboard collaborate.

Like Micah, Katie valued the fact that the director asked her to participate because of her ability. This compliment motivated her. “So I value and respect that they were asking me to collaborate; they cared about me is what I assumed. It was an awesome opportunity to plug in and talk about these issues.” Katie also joked that she participated because of the stipend. Participants received \$1,500 for participating in the initiative. Opportunities to apply content toward her dissertation was also a motivator. “I felt like it would be a place to drive my research forward and share with people and learn other things that I could consider and apply to my dissertation,” she said.

Dan was motivated to participate because of the collaboration and learning factors. “I try to be a life-long learner, and TLI open to new ideas and especially having an opportunity to collaborate with teachers across the state and the country,” Dan said it was all about sharing and addressing problems at his school with what he would possibly learn from colleagues across the nation.

Stephanie is active in her local association and heard about TLI through the board report and was encouraged to participate by a board colleague. “I guess they saw I had a drive or desire to be a leader and also knew that I was thinking about National Boards,” Stephanie said taking opportunities to help her improve her teaching especially in the area of teacher leadership motivated her. “I saw it as an opportunity to grow as a teacher leader and find avenues to lead ... that I did not have presented to me early in my career.” When considering advising younger teachers, she saw TLI as an opportunity that was empowering and good for learning.

Lauren was motivated to learn more about teacher leadership, which led her to pursue TLI. “Well, teacher leadership was appealing to me. I was interested in getting the experience because I saw who the partners were, and I thought, ‘Wow, that's really an opportunity to me.’” A self-directed learner, Lauren said she did it from her intrinsic motivation. She also spoke of factors that had a negative impact on her motivation. “Volunteering puts more pressure on you because of having to play catch-up in context building.... it’s difficult to be motivated when you felt like you had all of these other priorities,” Lauren said. Consequently, she felt obligated to participate and be engaged.

Voluntary participation. TLI participants were not required to participate in the initiative. As data were analyzed, I found that participants were motivated to collaboration because of their voluntary status. Since they agreed to take part in personal interest, they felt accountable to follow through with expectations. For Lauren, volunteering was a motivation to do the work. “If I had been mandated to participate I would have complained more.” Considering being mandated to participate, Lauren described her thoughts, “I would have felt like, ‘Why are you doing this to me? I already have so many things I'm trying to figure out!’” Lauren considered her participation as a way to educate herself. “My motivation was intrinsic and internalized.” Micah also appreciated not being mandated to participate in the PLC but also said he responded better to someone making him participate in the discussion; so, it is difficult to say that voluntary participation motivated Micah to be actively engaged in activities.

Dan like Lauren connected his voluntary status and link to engagement to a genuine desire to learn. “I think if you volunteer, it's something that you're interested in

and something that you would definitely follow through as opposed to someone mandating that you participate.”

Stephanie thought about how her experience might have been different if she were mandated to take part in TLI. “I would like to think I would have viewed it as a learning experience. However, if I were mandated, I may not have been as willing to put myself out there and been more reserved in the way that I participated,” she said.

Commitment and leadership. Commitment and leadership were emergent codes. To participate in the initiative, there were time, personal, and professional commitments. TLI meeting lasted from 60 – 90 minutes biweekly. Thus the theme became more evident. Lauren said, “This goes back to my statement that if I committed to TLI, I need to uphold my commitment by being prepared. When I wasn't prepared, it was embarrassing, and I just felt like I was wasting people's time.”

Leadership probably should have been one of the a priori codes (see Table 2), but its significance only appeared when data were being analyzed. TLI was designed to expose teachers to teacher leadership and give them an opportunity to apply this type of leadership in their schools and communities. Several of the teachers were driven by the idea of becoming leaders.

Stephanie saw involvement in TLI as an opportunity to grow as a teacher leader and find avenues to leadership that were not presented to her early in her career. Because she was working in a district that provided few leadership opportunities outside the classroom, she jumped at the chance to participate fearing there would be no more. It was obvious she came out of TLI feeling better about herself. Stephanie stated, “I never

thought I'd say I'm a teacher leader.” As Stephanie went through the program, she considered her strengths, weaknesses, and passions and how she could take her emotions and become a leader. “I would say that I am early stages of being a teacher leader,” she said.

It was also interesting that some teachers did not feel they had a good grasp of attaining this skill in the setting. A couple of times Lauren expressed regret that she had not learned how to be a leader, or she felt her leadership skills were not apparent. “I wish I would have built stronger leadership. I didn't really get that piece when I was going through as a participant. I don't know if our coaches really understood that.” She acknowledged that TLI was a pilot and work in progress, but she wanted a more tangible example of how to apply teacher leadership in her practice. “Some of the real explicit modeling examples would be helpful. I feel like I have this idea! It's good; the research supports it! But getting it on the ground and running, I feel really lost!”

The TLI experience offered Lauren an opportunity to practice the teacher leadership theory she was learning in her school context. Further into the interview, she acknowledged application of newly learned TLI skills came through her capstone project, which was a lesson study with her 2nd-grade team. Lauren had to work with the administration to solidify scheduling and get funding. She remarked, “That took some leadership, but during the actual lesson study, there were times the team showed a real lack of interest in continuing.” Having become accustomed to problem solving in her virtual community, Lauren sought assistance from an ELA coach who helped her reflect on ways to overcome that problem. Lauren felt that it usually came down to buy-in, and

they would make adjustments on the course of actions based on those conversations. She attributed this response to her TLI training. “Without the leadership training, I would have been much more emotionally involved and not willing to push forward; it just gave me a better perspective to understand how adult learners work,” she said. Without the TLI exposure, Lauren may not have sought support to push through difficulty she was experiencing.

Professional activities Lauren undertook after TLI were the greatest evidence of her application of teacher leadership theory to practice. Following her TLI experience, Lauren became state coach for TLI. She was responsible for mentoring other teacher leaders across the nation. In hindsight, though Lauren questioned her understanding of teacher leadership early on in her TLI experience, the evidence of leadership was illuminated in the activities in which she continued to participate.

Early in her TLI experience, Lauren struggled to relate to certain teacher leadership concepts because she was also trying to learn the virtual landscape. However, her desire to learn more about teacher leadership and engage in discussions and activities, motivated her to overcome her cognitive roadblocks and complete the Capstone project. As a result of her success in TLI, she continued to participate in teacher leadership activities after completing the initiative.

Research Question 3: Communication with Web 2.0

The third research question (RQ 3) probed teachers’ perceptions of Web 2.0 tools to learn and build community. RQ 3 was formulated as follows: What were early career teachers’ perceptions of building community and learning using Web 2.0 tools (Skype,

Zoom, blogging, social media, and Google Hangout)? The following four interview questions contextualized RQ 3:

1. What are your perceptions of using virtual resources for community building?
2. What experience have you had using Web 2.0 technologies?
3. What is your belief about use of Web 2.0 tools for learning?
4. How has use of Web 2.0 to connect you with more experienced teachers/mentors helped you connect theory to practice?

Data analysis resulted in the production of the following categories that help to organize this discussion centered on communication: benefits, challenges, and authentic relationships. I considered challenges ---- benefits emerged as a natural consideration to balance the analysis. The authentic relationship also emerged as interview data were coded and reviewed multiple times.

Opportunities for distance communications are limitless with the advances in virtual technology. Social networks made possible through the Internet empowers users to overcome barriers of time, distance, and resources that were at one time essential to communicate (Severino & Messina, 2011; Yeh, Huang, & Yeh, 2011). The product of the Internet and World Wide Web innovative ideas, Web 2.0 tools like blogs, wikis, and Google technologies are emergent technologies that equip users in reshaping data and harnessing collective intelligence (Glassman & Kang, 2011). The participants commented positively on their use of Web 2.0 tools in TLI.

Benefits. Stephanie was not new to Web 2.0 technologies in her district and thought they were very beneficial, “I think we are in a web-based society. It’s convenient;

the technology that we have has cost benefits.... I think people are getting more comfortable with putting themselves out there and discussing things via the discussion board or chatting.”

Katie, who was also proficient in virtual technologies, spoke of the positives but was quick to highlight the technologies weaknesses. If they're being using appropriately and efficiently, virtual resources can do an excellent job of building community.

Lauren had the least amount of experience with Web 2.0 tool prior to participating in TLI. Lauren also factored her age in the equation. At the age of 49, she was the eldest participant in the study. “Because I'm older, and I had no experience, I was uncomfortable.” As Lauren thought of all of the other duties that competed for her attention, the idea of learning to use the web conferencing tools effectively was overwhelming. When she became comfortable following multiple virtual interactions, her fears subsided. “I now know it’s just another set of tools I feel are available to me.”

Dan was comfortable with the using the Web 2.0 technology for learning and was passionate about catering today’s learners. “I'm always open to anything that's new especially innovative and will help me to move forward into the 21st century of students and teachers at some point we have to really move towards that way.”

Though Micah struggled socially in the webinar sessions, he was proficient in using the technology. The way he talks about virtual collaboration shows his passion for technology and technological pedagogical strength. He stated:

I think they're (Web 2.0 tools) amazing. Twenty years ago you would never have even imagined being able to see teachers in another state and what they’re

experiencing. And just some of the stories about other experiences across the country.

Micah connected his interest in the social justice content with what he could learn from the varying perspectives of veteran teachers in other states. “When there is a call to action on a particular topic, and you have not experienced that, you are not going to be very inclined to do anything about it.” He said that perspective changes when other teachers’ experience is added to the picture. “If you know it’s a real thing that real teachers are experiencing; it gives it life.” Figure 3 summarizes and organizes the benefits the participants found in working with Web 2.0 communications.

| Benefits of Web 2.0 Communications | | | |
|---|-------------------------------------|----------------------------|--|
| Social | Emotional | Technological | Professional |
| Freedom to share | Less judgmental | Time Saving | Campus application |
| Encourage Collaboration | Safety | Geographic (no travel) | Promote goal setting |
| Relationship building from a distance | Confidence builder | Cost savings | Strategizing |
| Connecting with others’ stories | Facilitate motivation among members | 24 hour access/flexibility | Appeals to 21 st Century student learning |

| |
|-----------|
| Stephanie |
| Lauren |
| Katie |
| Dan |
| Micah |

Figure 3. Participants’ perspectives on the benefits of Web 2.0 tools.

The theory to practice connection is a huge benefit that teachers of using Web 2.0 to collaborate. Because new teachers enter the classroom with no experience in applying pedagogy or the theory they have learned in the preservice programs, there must be opportunities for early career teachers to apply theory to practice. Web 2.0 technology has become an increasingly popular way of helping novice teachers in tightening the link

between theory and practice. The community provides scaffolded learning opportunities for early career teachers with a chance to share experiences and co-construct meaning through real world applications (Baran & Cagiltay, 2010; Cavanaugh & Garvey, 2012; Falloon, 2011; Petty & Farinde, 2013; Smith & Greene, 2013; Thomas & Reith, 2011).

Stephanie said the Web 2.0 made it easy to relate to theory due to hearing content in a real world context,

Considering the social justice track, I would type or say something, and someone from another state would understand what you were talking about saying, ‘I have that problem too, or I faced a different situation, and this is how I handled it.’”

Dan made the connection of using an article that he had received or studied with his group as a way to connect theory to practice. He stated:

But with TLI it allowed me to come back and utilize some of those things that we've learned, do some of those collaborations virtually, we used to get a lot of articles presented to us and information so I would always try to make sure I shared it with someone.

Micah said his school community best filled his connection between theory and practice,

We're able to take a look at data, disaggregate it, and just talk about theory and practice as far as what's going on with our students, which has been eye-opening based on their experiences and what best practices are currently used in the classroom.

The largest component TLI used to bridge this connection for the teachers was through the capstone project. Teachers were required to select a topic to focus their capstone and collaborated in multiple small group meetings with others interested in the same topic. They had opportunities to share their project ideas to receive and offer feedback. Micah and Katie did not turn in the capstone project. Dan and Lauren successfully completed their capstones. Dan was invited to present his project at a national meeting. Stephanie was in the process of completing her project during data collection.

Challenges. Teachers also mentioned the aspect of the technology that challenged them, but their struggles varied based on the level of experience and diverse uses in their professional context. Katie, who is also a doctoral student in an online program, was critical of how easy it was to be distracted in the virtual setting. “I think it's a challenge when everybody is on the opposite end of the computer and multitasking. You should make sure you're putting in quality!” Katie argued communicating virtually made it difficult to know what others were doing on the other end. “And just because someone calls, it doesn't mean that they are ready to participate,” she said. Lauren also mentioned challenges as she contrasted virtual communication to traditional face-to-face interactions. Lauren said she would reach out to the video and ask questions but was distracted by the in-session chatter, which was confusing to her. “I felt like I couldn't even hear it even though I apparently could hear, but without the facial cues, I had to learn a whole new way of listening.” This description was very realistic. Stephanie

embraced the in-session chatter and used for freedom to say what she felt she could not say in face-to-face communication.

Dan, the veteran teacher, echoed this sentiment for veteran teachers. “I think the veteran teachers may be challenged because they might not be so apt to really jump on the virtual page.” Since virtual collaboration has become popular, Dan said veteran teachers who are not tech-savvy are being pushed to adapt, causing some to retire or leave the profession. Dan also had a realistic opinion of early career teacher’s comfort with technology,

I've been in meetings; for example, the student planning committee. I've listened to student teachers...Face-to-face communication is almost obsolete for them.

They would rather virtual collaboration. So the challenge will be the time to be able to do it.

Figure 4 summarizes and organizes the challenges the participants had with Web 2.0 Communications.

| Challenges of Web 2.0 Communications | | | |
|---|--|--|--|
| Social | Emotional | Technological | Professional |
| Uncomfortable first interactions | Novice teachers fear of inadequacy blocks engagement | Newness of technology hinders communication | Ineffective for recognizing leadership traits |
| Feelings of isolation | Intimidating for new teachers to share with others | Challenging for veteran teachers | Overwhelming with learning to use and couple with other duties |
| Difficult to detect imbalanced grouping | Self-doubt prohibits learning process | Technology adds room for distractions/mental absence | Ineffective training will not allow effective use on campus |

| |
|-----------|
| Stephanie |
| Lauren |
| Katie |
| Dan |
| Micah |

Figure 4. Challenges of using Web 2.0.

Authentic relationships. PD (PD) facilitated via online or virtual resources has been lauded in research as an effective alternative to face-to-face/in person interaction that promoted retention (Erikson, Noonan, & McCall, 2012; He, 2014; Yeh, Huang, & Yeh, 2011). Erikson, Noonan & McCall (2012) studied rural and non-rural educators and discovered continuous virtual PD promoted retention and improved educators' expertise. Many teachers succumb to the pressure of teaching because of feelings of isolation. Attrition caused by this culprit can be addressed using online PD, which encourages collaboration that is convenient and helpful in building relationships and identity (Ostashewski, Reid, & Moisey, 2011).

Lauren admitted she doubted the level of authenticity she would find as a new online learner. "I did not know how authentic the relationships could be. I thought they would be kind of distant and doubted a certain level of collaboration could actually come

to fruition.” Lauren found the opposite to be true. “What I learned was, in a way, it's safer and more productive to collaborate with people who are not in your particular situation.”

Working with others via Web 2.0 tools has impacted Stephanie's perspective and given her a comfort to share when she would not have shared face to face.

“Understanding that some of the things I struggle with, people struggle with in Idaho. What Idaho teachers struggle with, we've got it down here.” Stephanie described it interesting to be able to share and collaborate on different issues specifically when she started to deal with the social justice content. “I found it really beneficial to be able to express things I was experiencing and feeling that I may not be comfortable sharing in my immediate community.”

Micah, on the other hand, struggled to connect with the online community because of his close link to his school community and need to be in face-to-face setting. “Not really making a connection with anyone was a big deal. If I had seen anyone from my district or someone I knew personally, it would have been easier for me.” Katie also found it difficult to engage in relationship building because she felt she was not partnered with people who challenged her,

I can say that I was totally guilty of tuning out when I felt like I wasn't being challenged when there was a lack of interesting conversation. It was a result of inappropriate grouping and my thought is I'm further along than other teachers involved.

Summary

Collaboration

Research findings in this study supported the teacher's belief that virtual collaboration does impact the level of engagement in virtual community of practice. PLCs, authentic engagement, and experiential learning were categories outlined in this research question. All of the participants believed in the value of professional collaboration and were motivated by the experiences of the community members. Each member mentioned how they appreciated being able to hear how other teachers from different parts of the country were dealing with some of the same issues. It was quite apparent that each participant was a proponent of collaboration evidenced by personal stories about collaboration with colleagues prior to their TLI experience.

Lauren, Dan, and Stephanie participated in the Blackboard Collaborate virtual setting most. They were often active in the in-session chatter and contributed by adding their perspectives in the synchronous discussions. Micah and Katie did not participate as much in the virtual sessions. Passive learning is sometimes a problem during online learning (Gasson and Waters, 2013). Passive learners are not actively engaged but lurk in the shadows of virtual discussion never providing input. Assessing passive learning can be challenging (Gasson and Waters, 2013), Micah, who described himself as an introvert did not say anything during any of the sessions; however, it was apparent he was present but lurking in the sessions. Katie commented verbally in one of the sessions and wrote remarks in the in-session chatter but did not attend all of the sessions. Micah and Katie spoke highly of their professional learning communities saying the blended setting was

the most efficient way for them to remain engaged. Micah said he appreciated the blended community because of the insights from other teachers in other parts of the country. Katie's online doctoral program appeared to place a shadow over her TLI virtual community. She preferred to balance blended learning to prevent distractions she described as problematic for virtual communication.

The teachers were passionate about collaboration and its positive impact on their learning and being able to apply theory to practice. However, the participants that believe in making investment in their virtual community was important were the ones that were more engaged and also completed the Capstone project. Though Micah and Katie's participation was less than the other three participants; Micah and Katie said they valued collaboration but that did not motivate them in the virtual community to complete the Capstone.

Overall, the teachers said collaboration was an important factor in their growth. They found the virtual component offered more freedom to discuss things and have access to opinions they did not usually hear.

Motivation

Motivation is an essential element when a learner considers repeating or reproducing the experiences they heard about in the virtual community (Bandura, 1969). All of the participants agreed that volunteering to participate in TLI motivated them to meet the guidelines of TLI. Commitment and leadership opportunities were categories that also emerged with this question. All of the teachers appreciated being asked to participate based on the positive traits their administration or union colleagues observed

in them. Baran and Cagiltay (2010) argued the need for more research on voluntary participation in an online community of practice and members' cognitive responses. Teachers stated their experience would have been different if they had been mandated to participate. Stephanie stated if she were mandated she may not have been as willing to share and been more reserved in the way that she participated. Dan agreed it definitely be something that he would stick with and participate in wholeheartedly since he volunteered. Micah and Katie also agreed but their lack of participation did not support their responses.

Being a member of the community was also a motivator in the TLI project. Because these teachers were early career teachers, they were looking forward to learning more about leadership from other members of the community. They connected benefits of saving resources like time and money, geographical links and social learning to the virtual setting. They complained about communication challenges that go with virtual learning such as loss of facial cues and distractions that prevent wholehearted engagement. Micah and Katie were especially critical of the inability to connect with their community because they valued more the face-to-face accountability.

Lave and Wenger (1991) argued early career teachers proceed from legitimate peripheral participation to full engagement as they become comfortable in a learning community. This was the case for several of the participants. Micah never made it to full engagement because he was not willing to share and remarked of his need to be prodded to make comments. Katie felt she had more experience than her group members and this unbalanced matching did not motivate her to fully engage. On the other hand, Stephanie

and Lauren thrived in the virtual setting once they became comfortable. They complained that they struggled to connect with the leadership content as it was presented in the sessions. However, they were both successful in applying elements of teacher leadership in their professional contexts following their TLI experience.

Communication with Web 2.0

The early career teachers had positive perceptions of using Web 2.0 tools to build community but their experiences colored the lens for each participant. All of the participants had experience using some aspect of Web 2.0 prior to TLI except Lauren. She had never used this technology for community building or for instruction. For this reason, the TLI experience impacted her most. Lauren doubted the effectiveness of creating authentic relationships through Web 2.0 communications but said she became a believer as she collaborated with other TLI participants. Lauren is not a TLI coach and shares with her mentees tips she learned about communicating in the synchronous setting. Micah, who was a proficient Web 2.0 user prior to TLI, would have benefited if he had been required to do something hands-on with the technology. He was quite passionate about the potential for using virtual technology for global learning. Dan and Stephanie both questioned how Web 2.0 tools might improve the PD in their professional contexts, which was evidence of motivation to reproduce what they had experienced during TLI. Katie was still a strong believer that virtual collaboration using Web 2.0 tools could be effective if there were accountability for participants to be present and engaged in online activities while having the freedom to multitask, which is not as easy to do in the face to face setting. Because she was not held accountable, she did not contribute what she could

have. She blamed this detachment on not being challenged by her group members in her content area.

It is evident that members of a virtual community can connect with other members of that community if they are motivated to gain something through participation. Members must feel like there is some equal yoking that prevents them from being more knowledgeable than the members they are grouped with. Cognition can occur in the virtual social interaction when members are intrinsically motivated to learn. Participants in this study cited voluntary participation as a key factor in that motivation.

Chapter 5: Discussion, Conclusions, and Recommendations

The purpose of this qualitative case study was to explore how early career teachers build community using Web 2.0 tools. Communities of practice are formed when like-minded people with similar concerns or interests learn or address a problem through group interaction. This blended learning community was formed as the early career teachers met virtually through Blackboard Collaborate mixed with a few face to face sessions. Blackboard Collaborate is a virtual meeting space that incorporates real-time discussions and in-session chatter messaging simultaneously.

Qualitative methodology was chosen as the most appropriate design for this study because it most effectively addresses the research questions (see Appendix B). I also targeted early career teachers who had 5 or fewer years of teaching experience. There were only 22 early career teachers out of some 300 participants in TLI's Cohort 2. Of these 22 early career teachers, three agreed to participate in the study. A veteran teacher from Cohort 2 and an early career teacher from Cohort 3 also agreed to participate, bringing the sample size to five total participants. Quantitative and mixed method designs were eliminated as methodological options because of the small participant pool. The qualitative case study methodology was used because it provided an approach to data collection that addressed behavior trends, participant needs, and the use of a case.

Early career teachers, who voluntarily participated in the TLI, were the focus of this study. TLI was an extended, blended PD opportunity designed to expose teachers to teacher leadership. This case was composed of four early career teachers and one veteran teacher. The study was conducted to address the need for more research on voluntary

participation in an online community of practice and examine how this professional learning community met the cognitive needs of teachers to enhance students' learning (Baran & Cagiltay, 2010; Pella, 2011).

Findings of the study resulted from the triangulation of interview data, observation of synchronous virtual sessions, asynchronous in-session chatter interactions, and artifacts from the Collaboratory. Results revealed that teacher's beliefs in collaboration do impact their level of engagement in a virtual community of practice. In addition, I found that voluntary participation does motivate participants of the virtual learning community to engage in activities, but it does not always guarantee the engagement is high quality without considerations of accountability. Finally, I found that the early career teachers in this study valued the use of Web 2.0 tools for building community and the exposure to diverse experiences among community members that promoted learning that could improve learning outcomes for their students.

Interpretations of Findings

Professional communities facilitated using virtual resources have been lauded in research for promoting teacher cognition and collaboration. The community of practice framework provides an adequate underpinning for this study to explain how early career teachers learn and strengthen their pedagogy through collaboration in virtual PLC (Cavanaugh, 2012; Lave & Wenger, 1991). When a teacher becomes a member of a blended community of practice, he/she must be engaged in community activities to be a productive member, which supports personal cognition (Caudle, 2013; Lave & Wenger, 1991).

The teachers in this study were hungry for collaboration and excited to hear the experiences of other teachers across the country; their desire to understand diverse perspectives kept them engaged. All of the teachers understood the meaning of true collaboration and valued collaboration in their professional settings. However, findings showed beliefs in collaboration alone did not motivate all of the teachers to wholeheartedly and consistently engage in the community. Teachers said that for effective collaboration to occur, there needed to be willingness to collaborate and possess the shared their vision among community members.

Social presence is the way one relates to a community to communicate, relate, and share their personal qualities in mediated communications (Caudle, 2013; Cui et al., 2013; Smith & Tirumala, 2012; Stenbom & Hrastinski, 2012). Caudle (2013) found that social and teaching presence are necessary for members of a community of practice with each other and be comfortable enough to share and make meaning. Otherwise, members of the community struggle to sustain community without social presence (Caudle, 2013). The findings in the study confirmed an aspect of this point. Micah, a self-proclaimed introvert, felt the facilitators were interested in helping community members, but he still struggled to connect with the group. Cui et al. (2013) argued that emotional connection should be included in the definition of social presence in virtual environments. This point was confirmed through Micah's experience in the study. He struggled to connect with the community, did not engage in the discussions, and did not complete homework assignments or the final capstone project.

Research supports the effective design of online programs to improve social presence. TLI focused on interactive curriculum design to engage its community. There were no measures in place to encourage active participation. Facilitators did solicit responses from all members. In some cases, there were more than 30 or more members participating in the synchronous session, which made it difficult to ensure even participation by all participants. Micah said he wished that there had been someone there to make him participate. Katie also praised the ability to collaborate with educators but complained there was little accountability. Katie reported feelings of isolation, which she blamed on not being challenged enough by people who had more experience than her. Findings of this study confirm that the lack of physical presence in an online setting increases the need for social presence, and without it member engagement decreases.

Motivation for Voluntary Participation

One goal of this study was to fill the gap in research on early career teachers' voluntary participation in virtual PD to build community and improve their practice. Baran and Cagiltay (2010) highlighted this lack of research concerning voluntary participation in online communities of practice. In this study, there was a mandatory term and a voluntary term in which preservice teachers participated in an online community of practice. Baran and Cagiltay discovered that mandatory participation resulted in teachers criticizing the PLC, while the voluntary participants more efficiently built community. The findings in this study overwhelmingly confirmed Baran and Cagiltay's results.

All of the teachers in this study preferred volunteering to engage in the extended PD instead of being mandated, but it did not always guarantee the engagement was high

quality. The teachers mentioned various factors that motivated them beyond their voluntary participation status: commitment to fulfill an obligation, desire to be a better teacher, desire to have more leadership training, and the idea of engaging in global discussion. Lauren's desire to learn more about teacher leadership motivated her to participate in TLI. She also felt obligated to participate and be involved because of her commitment. Virtual collaboration can be challenging as participants learn to use new technologies and fit it with other priorities (Nerzanti, 2012; Tsai, 2012). This was true for Lauren who felt overwhelmed in her attempt to prioritize CoP and school responsibilities.

Web 2.0 Communication

Early career teachers benefit when they have an opportunity to observe more experienced teachers or collaborate with their peers for reciprocal support. However, such supports and consistent, extended PD are either sparse or nonexistent. Web 2.0 innovations provide alternate methods of collaborating that provides a solution to the problem of unsupportive school contexts that force some teachers to leave the education profession. Neal et al. (2013) argued that the value of preservice teachers' experience collaborating globally via Web 2.0 tools helps them build knowledge and community preparing them for the 21st century classroom. The findings of this study confirmed this professional growth among early career teachers. Not only did participants feel they grew professionally, but their exposure to diverse experiences among community members promoted cognition that could improve learning outcomes for their students.

Web 2.0 technologies empower community members to collaborate synchronously in real-time or asynchronously. All of the participants valued Web 2.0

tools and acknowledged benefits and challenges encountered when communicating virtually. Teachers appreciated that asynchronous and synchronous functions eliminated the hassle of using planning time to collaborate and the cost of traveling to trainings. Virtual communications enable cross-organizational and diversified collaboration (Cavanaugh & Garvey, 2012; Falloon, 2011; Hudson & Hudson, 2013; Nerzanti, 2012; Smith & Greene, 2013; Strycker, 2012). Finding from this study confirmed the interactive exchange of ideas among community members was a real motivator. Tammets et al. (2012) found that intrinsic motivation among group members produced knowledge in an authentic context for effective learning. Lauren, who had the least experience with Web 2.0 tools, doubted the virtual communication could produce authentic relationships, but her doubts were disproved when she found that exposure to veteran teachers' experiences helped to validate her ideas and ultimately inspired her. If these novice teachers join a community of practice, they can improve their practice while strengthening pedagogy as they share and receive information (Lave & Wenger, 1991; Neal et al., 2013).

Self-reflection and peer dialogue are products of virtual collaboration that enhance learning (Chou, 2011; Duncan & Barczyk, 2013). Asynchronous features allow early career teachers the freedom to have extended time to reflect on discussions and how homework applied to discussions. Chou (2011) showed that student teachers' motivation and personal reflections helped them stay committed to teaching and improving socializing with peer student teachers, mentor teachers, and internet communities (Choi, 2011; Hager, 2011; Koles & Nagy, 2014). The findings in this study confirm these results

because the more engaged teachers were in the reflective work, the more they improved their connection to the community, which promoted engagement. Micah did not do independent work and preferred collaborating with his school community. For this reason, he remained silent during discussions making it difficult for him to connect with the community.

Researchers have criticized the effectiveness of online learning when students are passive in their learning (Gasson & Waters, 2013). The findings in the study can validate this point. One participant was passive during the synchronous sessions. Micah made no contributions, which impacted his level of productivity. He admitted that he did not do the homework, nor did he complete the culminating capstone project. Bandura referred to this behavior as vicarious learning, which is difficult to assess (as cited in Gasson & Waters, 2013).

Anxiety associated with early career teachers' perceptions of what other teachers would think of them was a challenge for study participants. Findings in this study confirmed research that argued novice teachers initially do not feel comfortable sharing what they know among veteran teachers (Chou, 2012; Weil et al., 2013). This discomfort is alleviated some in the virtual setting (Aaron et al., 2013; Dominguez & Hager, 2013). Though teachers doubted, in some cases, they had anything to offer, after they became comfortable with the online setting, their inhibitions decreased. Participants in the study shared they felt free to say things they would not say in their traditional settings.

Current research praised asynchronous technologies like Facebook in promoting learner engagement (Cui et al., 2013; Guo et al., 2014; Kucuk & Sahin, 2013). Results

linked active feedback to participants' cognitive engagement in online discussions. Guo et al. (2014) found a correlation between high quality feedback and participant cognitive engagement. The findings of this study support this research. Katie complained that she was not challenged intellectually because she was grouped with people who were less experienced. This unbalanced grouping made it difficult for her to engage cognitively because she felt she was contributing everything and not receiving. Micah also commented he would have benefited from feedback that challenged him to interact. Guo et al. argued that giving information, asking deep and thought provoking questions, and promoting reflective discussion sparked cognitive engagement for online learners. A more effective incorporation of this type of feedback in the TLI design might rectify Katie's problem. As discovered in Guo et al.'s study, members who exhibited deeper thinking in posts were more cognitively engaged. This is the element Katie complained she was not receiving and in exchange was not motivated to participate.

Bandura's (1977) social learning theory and Lave and Wenger's (1991) CoP framework were used to structure the conceptual framework. Bandura argued that learners observe the actions and reactions of others to support cognition. Lave and Wenger's research on social learning extended this idea linking cognition to social engagement.

In addressing RQ 1, this results of this study showed teacher's beliefs in collaboration do impact their level of engagement in a virtual community of practice. When considering Bandura's social learning theory, it does not matter if the interaction is

face-to-face or virtually; socialization occurs when people are able to make observations and share experiences.

In this study, Web 2.0 tools were used to facilitate collaboration. Lave and Wenger (1991) challenged the idea that learning was less of an individual achievement but more of a collaborative activity. The early career teachers in this study valued collaboration and saw it as essential to their learning more about teacher leadership. They were also motivated to learn more, discuss issues to improve their practice, and collaborate with other teachers across organizations. This intrinsic motivation also promoted a willingness to engage in the community of practice. In the study, as teachers discovered other teachers' experiences related to their own or provided solutions to address their issues, they became more comfortable, which allowed them to transition from what Lave and Wenger called legitimate peripheral participation to full engagement in all of the teachers. This was directly linked to their level of engagement. Even though two of the teachers, Micah and Katie, struggled to connect with the community, they still experienced cognition because they were listening and involved in the community. Micah, for example, attended all of the virtual sessions but never said anything. He was motivated to hear others' experiences and how they dealt with issues, but he never contributed. He said he would have preferred having someone push him to participate. Bandura (1977) described vicarious learning as observation learning. The learner examines interactions and decides to imitate or not to mimic depending on the behavior and the positive and negative consequences that resulted. When learners are motivated to

reproduce the experiences they witnessed, observational learning is considered successful. In Micah's case, he chose not to replicate the experience.

Results from the study also revealed that voluntary participation does motivate participants of the virtual learning community to engage in activities, but it does not always guarantee the engagement is high quality without considerations of accountability. Again, referring to the social learning theory, socialization promotes cognition (Bandura, 1977; Lave & Wenger, 1991). Motivation is an essential element in social learning. Teachers in this study were motivated to volunteer their time to learn more about teacher leadership. Though they received a small stipend for participating in biweekly meetings over 6 months, when asked why they wanted to participate, each teacher's answer was connected to personal growth.

The need for more research on early career teachers' voluntary participation in virtual PD to build community was the impetus for this study (Baran & Cagiltay, 2010). Communities of practice are by nature voluntary not compulsory (Wenger & Trayner, 2014). This was one reason why this initiative with voluntary teacher participation was perfect for this study. Stephanie said she did not participate to check in a box or make the boss happy, which is sometimes true with mandatory participation. "I wanted to do it to benefit me and me alone," Stephanie said. The findings from this study showed that teachers are more motivated to participate in virtual learning opportunities when they volunteer their time in exchange for learning skills or content that will improve their practice and prepare them to improve student learning.

The teachers were interested in learning more about teacher leadership. Stephanie said she was motivated to be a better teacher. She recalled her first coaching/mentoring experience, which had an unpleasant outcome that came in the form of a plan of improvement. As Bandura (1977) explained, imitation is connected to motivation. Stephanie sought to experience what she had heard of other's TLI experiences and decided she wanted to experience a more positive form of mentoring/coaching. Because the teachers desired to improve their practices, they were motivated to participate voluntarily.

Finally, early career teachers valued the use of Web 2.0 tools for building community and the exposure to diverse experiences among community members that promoted learning that could improve learning outcomes for their students. The Web 2.0 tools offer users flexibility of communicating synchronously or asynchronously. Participants interacted synchronously via technology used in this study were Blackboard Collaborate and asynchronously through in-session chatter, and Collaboratory posts. Community connects members, socially binding them through respectful and trustworthy relationships (Lave & Wenger, 1991; Wenger et al., 2002). Findings of this study support the creation of authentic relationships using Web 2.0 tools. Lauren, who had never used this technology, doubted the possibilities in the beginning, but she changed her opinion as she became more competent in using the technology to communicate. She also discovered the goal setting and strategizing in the virtual setting was more effective than her face to face experiences in her school. Overall, use of the conceptual framework

grounded in social learning theory and CoP framework provided an effective way of focusing the research to achieve the purpose of the study.

Limitations

The first limitation is in the qualitative design itself because the sample size is usually small, which removes the trait of generalizability (Miles et al., 2014; Patton, 2002). Purposeful sampling was used to minimize bias and collect more meaningful data (Patton, 2002). The target number of participants was eight, but only five participants responded to requests to participate in this study. However, smaller samples allowed for more controlled, thicker data with rich description that strengthens a qualitative study (Miles et al., 2014).

Another limitation of the single case study is it not as reliable as a multiple case study when considering reliability and external validity (Yin, 2009). The following strategies were implemented to add quality and reliability to the study: data triangulation of the interviews, in-session chatter interactions and Collaboratory posts; recording and transcriptions of interviews, coding and theme development during data analysis; and use of a conceptual framework grounded the single case status making it stronger. Also, this issue can be resolved by continuing the study at a later date or including another case for comparison.

Another limitation was my connection to TLI having served as a state coach in the first cohort year in 2014. This experience provided a thorough understanding of TLI, which helped to portray an accurate description of the initiative. However, measures were taken to ensure objectivity and prevent bias. Assessing personal bias prior to data

collections was helpful and journaling my thoughts during data collection helped to control bias. I listed dispositions and biases to be evaluated by a research colleague (Patton, 2002). I also used the reflective journaling regularly to guard against bias. Use of matrices allowed me to organize data inductively to find alternative patterns. The visual of all of the teachers' responses when comparing and contrasting helped me more quickly locate themes, and rival explanations, which also improved credibility (Yin, 2009).

Being able to apply the findings of a study to other situations relates to transferability, which is an essential element that helps to establish external validity (Merriam, 1998). The small sample size of five participants in this study made it difficult to draw conclusions that can be transferred to other populations. Also, one veteran teacher was allowed to participate in the study because of his willingness and perspective that confirmed and extended knowledge shared by early career teachers. Rich contextual information for this case study can assist the reader in applying results and conclusions to other situations (Shenton, 2004). Blackboard Collaborate and Collaboratory participation were examined, and results of the study were connected only to teachers' behavior within these settings. Replicating exact features of these program might be difficult including authentic participant responses. External validity improved through addressing several critical elements. This includes organizations participating in the study; restrictions on the type of people involved in the study; individuals involved in synchronous interaction; data collection methods; number and length of data collection sessions; and period of data collection (Shenton, 2004).

There is no way to measure the quality of engagement mentioned in the study which is a limitation. Participants' attendance was noted for virtual sessions as members' names were on the webinar roster as long as they were in Blackboard. The substance of verbal contribution, interactivity through asking questions and responses to other community members were the means of determining high quality engagement described in other research. Activity in the in-session chatter and Collaboratory posts were recorded. Evidence of critical thinking and reflection in asynchronous responses in the in-session chatter and Collaboratory were considered high quality engagement. The information is valuable for replicating this study.

Participants were concerned that they not be judged based on the information they shared presents a threat to validity. A letter of invitation issued by one of the sponsoring organizations was used to solicit participation. Teachers' decisions to participate were voluntary and without penalty if they chose not to participate. Participants were given a pseudonym, which protected their identities in the study. Because only two teachers responded initially, a second round of invitations were dispersed to Cohort 2. Cohort 3 also received invitations to participate to increase the pool of participants. Thick description was the result which reinforced the study's validity.

Recommendations for Research

Future research utilizing the mixed methods design and other qualitative approaches to investigate virtual collaboration, voluntary participation, and Web 2.0 communities of practice would be helpful. At the beginning of this study, I made three assumptions about the early career teachers in the TLI virtual CoP. The first assumption

was teachers' voluntary participation and interest in learning to be teacher-leaders would motivate participants to do the preparation activities/homework, attend virtual sessions, participate in the Collaboratory thread, and complete the Capstone project. Findings revealed participants preferred to participate voluntarily rather than being mandated. Voluntary participation motivated all participants in the study on some level. Some participants' engagement was high because of the commitment they felt. However, not everyone was motivated to do all of the activities, which included completing the Capstone project.

The next assumption was the TLI community of practice exemplified a virtual community facilitated via Web 2.0 tools to promote teacher leadership, and results were generalizable to conventional virtual PLCs. Findings revealed that early some career teachers struggled to grasp the concepts of teacher leadership virtually, especially if they had little experience using Web 2.0 tools. High-quality feedback is necessary to promote engagement and support cognition. It was apparent that a proper balance of virtual and face-to-face blending was necessary to make instruction most useful for the novice teacher participants.

The final assumption was participants who had experienced technology training would successfully collaborate in an online environment. Findings in this study revealed that though having technology proficiency was helpful, it did not guarantee successful collaboration. Motivation to engage in the community activities promoted cognition and engagement. In fact, I would describe Micah as a technology expert based on his personal use of technology. However, he did not successfully collaborate in the community

because he failed to participate in independent study activities and preferred face-to-face interaction. These challenges inhibited his making connections in the virtual community to support his continual engagement and cognition.

The goal of a single case study is to elucidate results of typical circumstances. Use of mixed methods design in this study would have allowed for quantifying the level of engagement and correlating it with rich description of student outcomes. Other comparisons could be made between Capstone completers and non-completers to highlight differences in behaviors and attendance to determine how to help improve the virtual design for accountability. Questions should explore how the program or virtual design can promote facilitator and member accountability to improve engagement and impact member satisfaction and learning outcomes. Since TLI showed teachers how to be teacher leaders by addressing issue in their school setting or in education in general. Continual research should be conducted on the use of Web 2.0 tools to promote teacher leadership and provide extended PD in the academic context.

The first assumption was teachers' voluntary participation and interest in learning to be teacher-leaders would motivate participants to meet the curricula and time requirements of the initiative. Findings in this study showed while teacher beliefs in collaboration did impact their level of engagement in a virtual community of practice, those beliefs in collaboration did not solely produce consistent, high-quality engagement in the community. A mixed methods approach could help clarify the correlation between teachers' belief in collaboration as a motivation for consistent, high-quality engagement in a community of practice. This design could also use programming to document

attendance and time spent in webinars accompanied by participant survey. This survey would allow participant evaluation webinar content and self-evaluation would be helpful in quantifying engagement. Teacher self-reports and ratings, discussions, and interviews could be used to compare the learning outcomes of teachers who participated consistently and those who had inconsistent participation. This would encourage participant reflection and feedback necessary for improving program design.

In future research undertaken could consider this study's results and investigate the TLI virtual community program designed to expose high quality teachers to teacher leadership in blended settings to determine whether results are generalizable to conventional virtual PLCs. Participants were excited to learn more about teacher leadership and other aspects of leadership. However, early career teachers complained that the concept of teacher leadership was hard to grasp in the virtual setting. Since some participants were new to the technology, trying to find their voice, and discovering their role in the community with veteran teachers was challenging. Future research might explore what other supports early career teachers need while in the zone of proximal development and learning teacher leadership content and participating in a large community of veteran teachers.

A final area to investigate is if participants who have experienced technology training and expertise leading to proficiency in an online environment are able to collaborate more successfully than those who are technologically challenged. The career teachers valued the use of Web 2.0 tools for building community and the exposure to diverse experiences among community members that promoted learning, which could

improve learning outcomes for their students. Future research should explore how program or virtual design can promote facilitator and member accountability to improve engagement and impact member satisfaction and learning outcomes. Too many early career teachers are still not receiving mentoring or support to help them to grow and stay in the classroom longer. Using virtual resources to facilitate cross organizational CoPs could remedy the mentoring and coaching void for early career teachers. Continual research should be conducted on the use of Web 2.0 tools to promote teacher leadership and provide extended PD in the school context.

Implications

This research has the potential to impact the education industry by informing the way institutions of higher learning and school administrators use Web 2.0 technologies in supporting the most valuable resource in classrooms, the teachers. Early career teachers in particular are vulnerable to attrition as they struggle too often with little support through mentoring. This is also minimal opportunities for extended, consistent PD that helps them build pedagogy and connect theory to practice. Confirmed by this research are the facts that young teachers are also trying to find their voices, searching for their place in the teacher community, and looking for opportunities to lead.

Communities of practice facilitated through Web 2.0 tools offer early career teachers, principals, teachers, coaches, students, and parents opportunities to collaborate and learn through sharing and being exposed to others' experiences. Findings in this study can inform teachers and leaders about how content knowledge, such as teacher leadership, can help teachers improve themselves through extended professional learning.

Of course, this requires a shift in focus as well as attitudinal change that will require administrators to encourage teachers to not only invest in students but also invest in themselves, which may prove to improve school culture and student outcomes.

PD is one aspect of education that is in great need of reform. High-quality PD is collaborative, flexible and learner-centered using content integration and reflective of class practice, which are best practices that promote engagement and cognition (Beach, 2012; Erikson, Noonan, & McCall, 2012). Education paradigm has shifted again to focus less on testing and more on the use of standards to steer instruction. This change provides students with skills they will need to succeed in college and career. Educators must consider how professional learning facilitated through virtual CoPs galvanizes teacher creativity that may have the biggest impact on change in school culture and student learning.

Social media and interactive technology has revolutionized the way society communicate. As usual, mainstream K-12 education is slow to be exposed to many of these technologies and their application in the school setting. Research participants questioned how Web 2.0 tools might be used in their school settings to improve the way teachers learn. Development of authentic, functioning PLCs is one way to foster effective PD in a school setting. Participants praised how the Web 2.0 tools made strategizing and goal setting so much more effective virtually than their traditional settings. In addition to forming virtual PLCs, educators have the flexibility to collaborate across organizations to develop curricula and tackle issues that benefit students and teachers, and improve society (Dufour, Dufour, Eaker, & Many, 2006; Shernoff, et al. 2011).

One way educators can ensure students are ready for college and career expectations is by empowering teachers to become more collaborative and reflective educators. Virtual support is a way to accomplish this while keeping teachers from leaving the classroom. Some participants questioned how authentic relationships could be fostered virtually. This study's findings showed participants experienced real relationships while collaborating virtually, which is a missing element for many early career teachers who complain of feelings of isolation. Mentoring facilitated through synchronous and asynchronous tools and social media offer alternatives for teachers who need mentoring support, as well as opportunities for veteran teachers to continue to grow. These recommendations of practice are possible through the use of Web 2.0 tools like blogs, wikis, and online post that encourage discussion and reflection. The possibilities are endless and can help transform traditional practices that meet the global demands of 21st Century learners (Beach, 2012; Duncan & Barczyk, 2013).

Theoretically, findings in this study confirmed the tenets of social learning and communities of practice frameworks. Social interaction among teachers is ideal for professional learning. Teachers need the rigors of thinking critically about their practice and reflecting on their practice to make changes that improve instruction. When learners and teachers do not have this type of critical thinking, they question the value of the interaction, which may prevent engagement that is necessary for cognition to occur. Advances in technology use in society continues to evolve and change the way the world communicates. The education industry cannot continue to be slow to adopt innovative change, especially when research confirms how technology promotes engagement and

social learning (Weil et al., 2013). The biggest advantages of using Web 2.0 tools in education are the removal of cost, time and geographic constraints, which also eliminates some excuses for not using them. Leaders and teachers, however, must welcome positive social change even if it comes with some growing pains.

Conclusion

Education has always been seen as a tool that empowers people. When educators use technology to facilitate community building, collaboration, cognition and relationship building are a few byproducts. Communities of practice connect people from different schools and organizations at various teaching levels to share experiences that bring knowledge to life. Teachers' beliefs about collaboration were positive. They valued collaboration and believed collaboration was necessary for growth. However, unless all members have the same vision of what collaboration means and are willing to be vested in the community, the quality of engagement in a virtual community of practice will not be effective.

A community of practice is composed of like-minded people with common interests operating in a community for a common goal. Participation is typically voluntary. Voluntary participation does motivate participants of the virtual learning community to engage in activities, but it does not always guarantee the engagement is high quality without considerations of accountability. Teachers really appreciated using self-motivation to guide their participation in the TLI CoP. However, consistency in meeting guidelines for operation and expectations for participating members to be

prepared for discussions. Also, high quality engagement encourages connections that promote a feeling of belonging in the community.

Finally, early career teachers valued the use of Web 2.0 tools for building community and the exposure to diverse experiences among community members that promoted learning that could improve learning outcomes for their students. Teachers believe in the enormous potential of using collaborating socially but would like to see more of this type technology used on school campuses to validate and improve dysfunctional PLCs and open the door to ongoing PD to facilitate mentoring and training on topics like teacher leadership.

Implications highlighted in this study show the benefits of educational technology to facilitate learning. Using technology to building community and support early career teachers offer solutions to the problem of attrition among novice teachers. Collaboration is at the center of building community and teachers need this interaction to improve as professionals (Cavanaugh & Garvey, 2012; Petty & Farinde, 2013; Wenger et al., 2002). However, the busyness of teaching can make it difficult to collaborate and focus on professional improvement. The social change brought to fruition by technological advances in social media also provides a solution in education that is cost effective, flexible, and geographically friendly. Now educators just have to be open to the possibilities that technology like Web 2.0 tools offer to improve instruction and usher in the change that enhances student learning.

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Appendix A: Interview Protocol Form

Project: Web 2.0 and Communities of Practice: Bridging the Gaps in Early Career

Date: TBD

Time: 12PM

Location: Phone call

Interviewer: Stacey Donaldson

Interviewee: _____

Research Questions:

RQ 1: What influence does a teacher's belief in collaboration have on their engagement in a virtual community of practice?

RQ 2: How does an early career teacher's voluntary participation in virtual communities of practice impact their level of motivation to meet TLI guidelines for participation?

RQ 3: What were early career teachers' perceptions of building community and learning using Web 2.0 tools (Skype, Zoom, blogging, social media, and Google Hangout)?

Notes to interviewee:

My name is Stacey Donaldson. I am conducting a study the use of Web 2.0 tools in building community among early career teachers who participated in the Teacher Leadership Initiative. I appreciate your willingness to be interviewed. You do not have to answer questions you do not feel comfortable answering. The information you provide

will only be used for the purpose of this class. This interview should last approximately 30 minutes.

Purpose of research:

To explore the phenomenon of how early career teachers build community during blended learning that included use of Web 2.0 tools.

Definitions:

Blended learning: This is a hybrid of classroom and online learning providing convenience of online with face to face contact (Kucuk & Sahin, 2013).

Community of practice: This is a group that shares a concern or interest in something they learn how to do better by interacting regularly (Lave & Wenger, 1991).

Domain: This is what a group does or cares about (Wenger et al., 2002).

Early career teacher: This is a teacher who has less than five years of teaching experience (Cornu, 2013).

Preservice teacher: The label given to a college education student participating in a school-based field experience with a cooperating teacher. Prior to graduating and becoming a teacher, the preservice teacher learns about every aspect of teaching in this apprenticeship type training (Kato, 2010).

Protégé: This is a person who receives support and protection from an influential patron who furthers the protégé's career.

Social presence: This is the degree of salience or prominence the communicator exhibits to other participants using computer mediated communication in an online community (Smith & Tirumala, 2012).

Teacher leadership: Encompasses leadership roles of teachers outside of the classroom setting, beyond the traditional role of classroom instruction (Greater School Partnership, 2014).

Vicarious learning: This is also known as observational learning (Bandura, 1969).

Web 2.0: This is the second generation of the World Wide Web, which improved the functionality of the Web allowing users increased levels of interaction for free. Blogs, wikis, social networking are examples (O’Brannon & Britt, 2012).

Appendix B Interview Queries and Probes

RQ 1: What influence does a teacher's belief in collaboration have on their engagement in a virtual community of practice?

- Do you understand what is meant by collaboration?
- Prior to participating in TLI, did you use collaboration in your practice?
- Do you understand what is meant by community or building community?
- To what extent can TLI be linked to community building?
- How much experience have you had participating in PD virtually?
- Prior to your TLI experience what was your understanding or knowledge of using virtual tools to build community?
- How has your TLI experience shaped your perception of using virtual tools to build community?
- How has your collaboration with other teachers in TLI impacted your participation?

RQ 2: How does an early career teacher's voluntary participation in virtual communities of practice impact their level of motivation to meet TLI guidelines for participation?

- How did you find out about the Teacher Leadership Initiative?
- Why did you want to participate in the initiative?
- Would you say you volunteered to participate or were you mandated?
- How did the status of your participation (voluntary/mandatory) impact your motivation to engage in community activities?

- What are the challenges of being an early career teacher participating in a virtual community with more established teacher leaders?
- What were the benefits of being participating in TLI with more established teachers?
- How motivated were you to participate in biweekly TLI activities?

RQ 3: What were early career teachers' perceptions of using Web 2.0 tools (Skype, Zoom, blogging, social media, and Google Hangout) to learn and build community?

- Do you understand what Web 2.0 tools are?
- What experience have you had using Web 2.0 technologies prior to TLI experience?
- Have you used Web 2.0 tools for learning in your classroom?
- What are your perceptions of using Web 2.0 tools for community building?
- How has participating in TLI helped to insert teacher leadership traits into practice?
- Do you have anything else to add?

Closure:

Thank you for your participation. All surnames will be kept confidential. I may need to ask follow-up questions at a later date.