ABSTRACT

THARRINGTON, KAREN. #HELP: How Value is Created for World Language Pre-Service Teachers as Members of a Professional Learning Network on Twitter. (Under the direction of Kevin Oliver).

With 40% of new teachers leaving within their first five years of teaching (Teague & Swan, 2013), it is essential to provide a level of support necessary for the unique needs of novice teachers, beginning with their pre-service preparation program. Pre-service teachers need more in-depth experiences to explore the practical side of teaching, yet many World Language teacher education programs have limited opportunities for field experiences. These limitations not only decrease pre-service teachers’ (PST) exposure to various pedagogical worldviews, but also base the complex theoretical understanding of teaching to one praxis. Twitter has emerged as a platform for virtual Professional Learning Networks for in-service teachers (IST), and studies have shown the positive benefits for Teachers who are members of communities of practice, be it formalized or self-initiated. Gaps remain, however, in examining the value these virtual communities have for World Language pre-service teachers. With this study, I aim to develop a more nuanced understanding of the ways and extent to which a virtual professional learning network is valuable for its members through the collection and analysis of personal narratives, value creation stories, and tweet content.

This qualitative case study applies the Value-Creation Framework developed by Wenger, Trayner, and de Laat (2011) to examine the ways in which value is created for World Language pre-service teachers when they participate in moderated Twitter Chats with other PSTs and practicing teachers. Findings indicate that value is created for PSTs within, and across, the five value cycles (immediate, potential, applied, realized, and reframed).
value) of Wenger et al.’s (2011) framework. Three data sources were used to develop personal value stories: Takeaway tweets, survey responses, and interviews. Taken together, they form a narrative about how value is created from the chat experience.

The importance of engaging PSTs in a virtual PLN was supported by the data; findings show various value indicators being met within cycles and five main themes that describe the ways in which participants benefitted from the chats: membership, support, resources, agency, and learning. The overall findings suggest that engaging in a virtual PLN on Twitter, through moderated chats with in-service teachers provides a valuable field experience for World Language pre-service teachers.

Results from this study are intended to inform teacher preparation program with practices such as connecting PSTs with ISTs using virtual social networks such as Twitter. As empirical research affirms the power of professional networking and communities for practicing teachers, bringing pre-service teachers into the fold as early as possible introduces them to a network of support and teaches them not only how to participate, but why it is important to have a network. This research will add to existing literature about PSTs and PLNs, the uses of Twitter in higher education; and the benefits of connecting World Language PSTs and ISTs to create a more cohesive and relevant pre-service experience for PSTs.
#HELP: How Value is Created for World Language Pre-Service Teachers as Members of a Professional Learning Network on Twitter

by
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A dissertation submitted to the Graduate Faculty of North Carolina State University in partial fulfillment of the requirements for the degree of Doctor of Philosophy

Curriculum and Instruction

Raleigh, North Carolina

2017

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DEDICATION

To my husband Tim, my eternal cheerleader; without you, this would not have been possible.
BIOGRAPHY

Karen Tharrington grew up in Ohio but has spent more than half her life in North Carolina. After graduating with a Bachelor of Arts in Spanish Languages and Literatures in 1996, she began teaching Spanish in Wake County. Her interest in technology motivated her to incorporate digital tools into her Spanish classes, first at the middle school and then later at the high school level. She became Nationally Board Certified in 2002 and went on to pursue a Master’s in Spanish at North Carolina State University. After finishing in 2006, Karen joined her alma mater as Program Coordinator for Foreign Language Education. This career move deepened her passion for the professional growth needs of pre-service teacher candidates. The Digital Learning and Teaching doctoral program was a natural fit for Karen to merge her interests: languages, teaching, and technology. She resides in Wake Forest with her husband and two cats. In her spare time, she enjoys traveling and portrait photography.
ACKNOWLEDGMENTS

I am incredibly grateful for the people who came into my life along this journey. Preference Evans, my confidant and accountability partner - I could not have gotten through grad school without you. Shea Kerkhoff Vessa, who came into my life and changed it irreparably - your brilliance and strength guided me throughout this process.

Thank you to my committee members who provided the support and guidance I needed. I especially thank my advisor, Kevin Oliver, for patiently meeting with me over every idea until I found the one I was passionate about, and Sherry Freeman, for taking the time to hear what I was saying. It was like you peered inside my head, looked around, and saw exactly what I was trying to do, even when I was not sure myself. Thank you to Malina Monoco and Michael Maher, for your pragmatic advice and support.

I am indebted to my friend and colleague Mark Darhower, who was instrumental in helping me conceptualize this study and encouraged me along the way.

To my family, who may not have understood this process but are nonetheless proud of me. Their love and support carried me. To my German daughters, Julia and Cilli, who bookended this process with their exchange years here, and to my husband, Tim, who kept food on the table and kept telling me I could do this.

To my teacher friends who cheered me on with texts and phone calls - thanks for answering my call for help with this project. You all know who you are, and I am forever grateful. And to James, your friendship and support mean the world to me.

Finally, to the pre-service teachers, it is because of you that this study took place. It is my greatest hope that you find your personal success within the educational setting.
# TABLE OF CONTENTS

LIST OF TABLES ............................................................................................................. x  
LIST OF FIGURES ........................................................................................................... xi  

CHAPTER 1: INTRODUCTION ......................................................................................... 1  
  Background...................................................................................................................... 5  
  Statement of the Problem .............................................................................................. 7  
  Purpose of the Study ...................................................................................................... 8  
  Definition of Terms ........................................................................................................ 9  
    Collective Learning ..................................................................................................... 9  
    Community ................................................................................................................ 9  
    Communities of Practice (CoP) ................................................................................. 9  
    Professional Learning Networks ................................................................................ 10  
  Self-Efficacy ................................................................................................................ 10  
  Social Media and Networking .................................................................................... 11  
  Twitter .......................................................................................................................... 12  
  Value Creation Framework .......................................................................................... 12  
  Other Terms ................................................................................................................ 13  
  Significance of the Study ............................................................................................. 14  
  Theoretical Framework ............................................................................................... 16  
  Overview of Approach ................................................................................................. 18  
  Organization of the Study ........................................................................................... 19  

CHAPTER 2: LITERATURE REVIEW .............................................................................. 20  
  Literature Synthesis ...................................................................................................... 21  
    Teacher Preparation ................................................................................................. 21  
      Field experience .................................................................................................... 22  
      Self-efficacy ........................................................................................................... 23  
      Theory to practice ................................................................................................. 24  
    Technology-Related Initiatives in Professional Education ..................................... 26  
      Simulations ............................................................................................................ 27  


<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Twitter Data</td>
<td>61</td>
</tr>
<tr>
<td>Survey</td>
<td>62</td>
</tr>
<tr>
<td>Interviews</td>
<td>62</td>
</tr>
<tr>
<td>Value-Creation Stories</td>
<td>63</td>
</tr>
<tr>
<td>Data Collection</td>
<td>64</td>
</tr>
<tr>
<td>Data Analysis</td>
<td>67</td>
</tr>
<tr>
<td>Validity</td>
<td>68</td>
</tr>
<tr>
<td>Construct Validity</td>
<td>69</td>
</tr>
<tr>
<td>Triangulation</td>
<td>69</td>
</tr>
<tr>
<td>Member-checks</td>
<td>70</td>
</tr>
<tr>
<td>Internal Validity</td>
<td>70</td>
</tr>
<tr>
<td>External Validity</td>
<td>71</td>
</tr>
<tr>
<td>Reliability</td>
<td>72</td>
</tr>
<tr>
<td>Reflexivity</td>
<td>72</td>
</tr>
<tr>
<td>Ethical Issues</td>
<td>74</td>
</tr>
<tr>
<td>Limitations of the Study</td>
<td>74</td>
</tr>
<tr>
<td>CHAPTER 4: FINDINGS</td>
<td>76</td>
</tr>
<tr>
<td>Value Within Cycles</td>
<td>76</td>
</tr>
<tr>
<td>Cycle One – Immediate Value (IV)</td>
<td>78</td>
</tr>
<tr>
<td>Networking</td>
<td>78</td>
</tr>
<tr>
<td>Quality of interactions</td>
<td>79</td>
</tr>
<tr>
<td>Cycle Two – Potential Value (PV)</td>
<td>80</td>
</tr>
<tr>
<td>Human capital</td>
<td>80</td>
</tr>
<tr>
<td>Change in perspective</td>
<td>81</td>
</tr>
<tr>
<td>Increased confidence</td>
<td>82</td>
</tr>
<tr>
<td>Information</td>
<td>83</td>
</tr>
<tr>
<td>Inspiration</td>
<td>83</td>
</tr>
<tr>
<td>Professional identity</td>
<td>84</td>
</tr>
</tbody>
</table>
Social capital ....................................................................................... 85

Relationships and connections .............................................................. 85

Trust level ............................................................................................. 85

Tangible capital ................................................................................... 86

Reputational capital ........................................................................... 86

Learning capital ................................................................................... 87

Transformed views .............................................................................. 87

Cycle Three – Applied Value (AV) ......................................................... 88

Implementation ................................................................................... 89

Social connections .............................................................................. 91

Cycle Four – Realized Value (Real-V) .................................................. 92

Personal performance ......................................................................... 92

Saving time ........................................................................................... 93

Organizational outcomes ..................................................................... 93

Effect change ........................................................................................ 93

Cycle Five – Reframed Value (REF-V) .................................................. 94

New frameworks .................................................................................. 94

Assessment practices .......................................................................... 95

Awareness ............................................................................................ 95

Beliefs .................................................................................................... 96

Value Creation Across Cycles .............................................................. 97

Participants’ stories ............................................................................. 98

Diana ..................................................................................................... 98

Justin .................................................................................................... 99

Nick ....................................................................................................... 101

Amy ..................................................................................................... 102

Summary of Findings ........................................................................... 104

CHAPTER 5: DISCUSSION ..................................................................... 105

Synthesis of Findings .......................................................................... 105
LIST OF TABLES

Table 3.1 In-Service Teacher (IST) Participation in Twitter Chats ........................................59
Table 3.2 Timeline for Data Collection and Analysis.................................................................66
Table 4.1 Overview of Findings: Value Cycles and Indicators ...................................................77
Table 4.2 Definition of Potential Value Forms for Cycle 2 with Indicators.................................81
Table 5 Implications for Practice ...............................................................................................121
LIST OF FIGURES

Figure 1: Distribution of Educational Chats on Twitter Weekly. ........................................ 44

Figure 2: The Five Cycles of the Value-Creation Framework for PSTs. .............................. 57

Figure 4.1: Value Creation Matrix for Diana................................................................. 98

Figure 4.2: Value Creation Matrix for Justin. ............................................................... 99

Figure 4.3: Value Creation Matrix for Nick................................................................. 101

Figure 4.4: Value Creation Matrix for Amy................................................................. 102

Figure 5.1: Value Cycles and Contributions to Value Creation................................. 106

Figure 5.2: Combined Participant Stories and Indicators Across Value Cycles........ 112
CHAPTER 1: INTRODUCTION

In this globally connected world, learning a World Language is no longer a luxury but a critical part of the core curriculum (ACTFL, 2013) that adds to learners’ “economic and symbolic capital” (Kramsch, 2014, p. 301). K-12 teaching practices, therefore, should be current and relevant as World Language (WL) teachers prepare the next generation of career and college ready students. To enter the modern World Language classroom today, Pre-Service Teachers (PSTs) must be provided with the most comprehensive, relevant, and meaningful teaching experiences as possible (Billingsley & Scheuermann, 2014), yet many World Language Teacher Preparation programs vary greatly in theory, practice, and design (Farrell, 2012; Morey, Bezuk, & Chiero, 1997) and there is little consensus on what effective language teachers need to learn in their pre-service programs. Over the last few decades, best practices for World Language teaching methods have transformed from a grammar-heavy syllabus to a more interactive, proficiency-oriented approach (Kramsch, 2014). These practices include a goal of 90% or more of target language use by teachers and students, communicative tasks that build proficiency and performance skills for interpretive, interpersonal, and presentational modes of communication, and an inquiry-based learning about the products, practices, and perspectives of different cultures where the target language is used (ACTFL, 2010a; Kramsch 2014). World Language teachers face challenges of meeting the unique needs of Heritage learners who may require differentiated instruction to support their individualized language growth (ACTFL, 2010b). Today’s World Language classroom has matured, yet for many PSTs, their worldview and knowledge of how to teach stem from their personal experiences as K-12 learners instead of from a teacher’s
perspective, and they bring this pre-conceived knowledge about teaching and learning to their teacher education programs (Beattie, 2002; Sim, 2006; Tedick, 2009; Vermunt, 2014). What Lortie (1975) calls an “apprenticeship of observation” that occurs for 12 or more years of the pre-service teachers' lives, Bruner refers to as “folk pedagogy” - ingrained beliefs about teaching that form a lens from which pre-service teachers view their formal preparation (as cited in Raths, 2001, para. 5). World Language PSTs enter programs thinking they know how to teach languages, since they themselves have been successful in learning one. They bring their idea of language as a system of rules where the content is ‘delivered’ to students through one specific teaching method (Tedick, 2009). In her President's Message for the Foreign Language Annals, Jackie Van Houten (2015) discusses the role that these acquired predispositions play on new teachers, noting that new teachers under stress tend to resort to teaching the way they were taught. Comeaux and Gomez confirm this viewpoint in their studies on pre-service teaching (as cited in Sim, 2006).

While all teacher preparation programs have challenges, distinct issues remain when it comes to preparing World Language teachers. In her review of requirements for various teacher preparation programs, Tedick (2009) found several issues, including pedagogical content remaining stuck in grammar-based teaching as opposed to communicative-based, content learning that is ‘divorced from’ content teaching, and a disconnect between the pre-service teacher candidates’ subject specific program and the education program. As language students, PSTs often do not experience the teaching methods that they learn about in their pedagogy classes. Frequently, PSTs learn language content at their universities or colleges from Liberal Arts departments and pedagogy from the Education department. This binary
process of learning to teach World Languages means that PSTs may have fewer opportunities to engage in subject-specific pedagogy courses. Therefore, PSTs must be provided with broad and deep opportunities to examine diverse teaching styles and expand their pedagogical and pragmatic worldviews of teaching their content area.

Teaching World Languages, especially K-8, can also be isolating when there is only one WL teacher per school (Schmoker, 2005). If teachers desire a more collaborative environment, they often must seek it out themselves and stay motivated to remain involved. When implemented properly, school-based Professional Learning Communities positively affect job satisfaction among teachers, positively impact student learning, and help reduce isolation among educators (Dufour, Eaker, & Dufour, 2002; 2005). On the other hand, the nature of common planning and assessment can marginalize teachers in areas like Art, Drama, PE, or World Languages which are sometimes considered peripheral to a school structure. In addition, schools that do not allow the necessary time for teams to properly collaborate will find that the PLC model becomes yet another “initiative” for teachers to ignore (Woodland & Mazur, 2015). Motivation and value, then, are key factors for why teachers choose to participate in various professional learning communities. Addressing these challenges, virtual communities on social media platforms have emerged as a means of connecting and collaborating with other teachers. Establishing Professional Learning Networks (PLN) is of growing interest in the field of education, and Twitter is a practical option for establishing them because it removes the geographical and time/schedule barriers normally associated with group meetings (Camiel, Goldman-Levine, Kostka-Rokosv, & McCloskey, 2014; Tur & Marin, 2015). Practicing educators are already using Twitter as a
part of their professional lives, as evidenced in a study by Carpenter and Krutka (2014) about how and why teachers use Twitter. Results from their survey showed that 96% of K-12 educators used Twitter for Professional Development (PD) purposes, such as “sharing and acquiring professional resources” (p. 428). Other reasons for seeking PD from social media include battling isolation and finding community. Participating in professional communities – virtual or otherwise – is becoming an integral part of a practicing educator’s professional development.

If current research shows that Professional Learning Communities are important to in-service teachers’ (IST) personal and professional growth and empowers teachers to initiate reforms in their schools, then pre-service teachers can and should engage in the same types of activities to acquire the knowledge of what it means to participate in a learning community (Le Cornu & Ewing, 2008; Sumsion & Patterson, 2004). Not all practicing ISTs are connected to communities, virtual or otherwise; therefore, exposing PSTs to these communities becomes the job of the teacher preparation program. Virtual professional learning networks are one way to help encourage connection and collaboration early on with PSTs. By creating a Professional Learning Network (PLN) via Twitter that connects PSTs with In-Service World Language Teachers for regular chats, I learned more about the different cycles of value created by these PLN Twitter chats through the collection of value-creation stories and participant examples. By examining the value creation stories, I learned how the PLN experience shapes PSTs’ perspectives on teaching, whether it helps bridge the theory-to-practice gap, and what value they place on connecting to a virtual community of World Language teachers.
**Background**

Many issues surround teacher preparation programs, including finding appropriate mentors and developing Pre-Service Teachers’ professional and pedagogical worldviews. This study evolves from my work in preparing World Language teacher candidates at the undergraduate level and my experiences while participating in an established virtual Professional Learning Network via Twitter. My work and experiences drive this study, beginning with my own questions about how to improve teacher preparation experiences for World Language PSTs.

Formal teacher preparation in the United States began in the 1800s with “normal schools” to prepare elementary school teachers (Morey, Bezuk, & Chiero, 1997) and current World Language teacher education programs remain much like those of decades’ past: take courses in content and pedagogy, observe classroom teachers in action, complete a specialized methods course, then student teach with direct supervision of a cooperating teacher and a university supervisor (Tedick, 2009). While all are hallmarks of “comprehensive teacher education programs,” it is the field experience, typically 10 to 14 weeks of a teaching practicum, that historically provides the Pre-Service Teacher the link between theory and practice (Billingsly & Scheuermann, 2014; Morey et al., 1997; Zeichner, 2010). Called by many names (field experience, student teaching, internship, practicum), the time spent with a cooperating teacher in a school with actual students has always been considered the best way to prepare future teachers and is viewed as such by pre-service teachers and teacher educators alike (Dymond, Renzaglia, Halle, Chadsey, & Bentz, 2008; Wilson, Floden, & Ferrini-Mundy, 2001; Zeichner, 2010). The challenge for teacher
education programs, however, is finding appropriate schools and cooperating teachers to fill the need. As demands placed on teachers due to high stakes testing and curriculum changes continue to increase, many are not able to open their classrooms to novice teachers (Billingsley & Scheuermann, 2014). This leaves a dearth in proper mentors for Pre-Service Teachers. It is also common for universities to have agreements with school systems where PSTs are placed in cooperating schools based on convenience or administrative needs, rather than addressing those of the PST. This available cooperating teacher may not always incorporate the “best practices” that align with the universities' objectives, resulting in a disconnect between what is learned in the university courses and what is practiced in the classroom (Billingsley & Scheuermann, 2014; Zeichner, 2010). Keeping World Language pre-service teachers close to home for logistical purposes means that PSTs may not be exposed to a diverse student body and may miss opportunities to craft their skills with heritage speakers, students with autism, or with individualized education plans.

This study is based on my experience participating in an existing virtual PLN and creating one specifically to connect PSTs with ISTs. For this study, a Twitter chat with a designated hashtag (#) was created to create a space where PSTs could dialogue with ISTs over topics relevant to teaching World Languages and to help build their knowledge capital when they begin student teaching and beyond. Though ISTs voiced their enjoyment with informally mentoring these PSTs, more information is needed to truly understand the value of this collaboration for World Language Pre-Service Teachers.
Statement of the Problem

Field experiences have been shown to have a strong impact on PSTs and teaching practices (Billingsly & Scheuermann, 2014; Zeichner, 2010), yet current teacher education programs often rely on only one student teaching practicum as preparation for entering the profession. This limitation reduces PSTs’ exposure to various methods and best practices and bases the complex theoretical understanding of teaching on one praxis.

Though more opportunities are needed to provide PSTs with in-depth opportunities to explore the practical side of teaching, the design of many traditional teacher preparation programs leaves little room for them; most have one or two observation periods prior to the “professional year,” which they enter with lectures and theory under their belt, but jump from model teaching to their peers to real teaching with actual students in a relatively short time. Vicarious experiences and peer evaluations can play an important role in developing new teachers (Bandura, 1994; Iqbal & Mahmood, 2010), but there is often little time or resources to allow for them. How cooperating teachers are chosen, which is often by convenience rather than whether they exemplify best practices of teaching or have any formal mentoring experience, is another issue of placement. The way a cooperating teacher mentors a pre-service teacher, whether they have the time, the support, or how they view their role, all affect a novice teacher’s practice (Feiman-Nemser, 2001). Studies support the importance of field experiences with PSTs (Billingsly & Scheuermann, 2014; Zeichner, 2010), but if the cooperating teacher is not an ideal model for best practices, the PST is not exposed to anything beyond that teacher’s classroom. The lack of exposure to a variety of methods and techniques for teaching leaves PSTs entering a job market with only their student teaching
practicum experience as a guide on how to teach. Iqbal and Mahmood (2010) discuss how a disconnect can occur between university theory and classroom practice; although some teacher education programs are striving to fill that gap with on-site teaching laboratories or guest teacher adjuncts, developing the kind of teaching laboratory that pre-service teachers need can be time-consuming, expensive, or impractical. How, then, can we support pre-service teacher candidates’ professional growth and expose them to diverse practices? Other disciplines, such as science, medicine, and aviation are already making great uses of new technology to connect theory with practice (Sawchuk, 2011) therefore providing pre-service teachers with more authentic experiences and connections to practicing teachers is an area that can, and should be, explored with the latest technologies. Although Twitter use has been studied within virtual PLNs and higher education, the research often focuses on Twitter as a tool; little has been done to examine the value these virtual PLNs create for PSTs.

**Purpose of the Study**

The purpose of this study is to apply Wenger, Trayner, and de Laat’s (2011) Value-creation Framework to investigate how value is created for World Language Pre-Service Teachers (PSTs) when they participate in moderated, online Twitter Chats with each other and In-Service Teachers (ISTS), and to examine, when used as a professional learning network, how much the chats benefit those PSTs in a teacher preparation program. The research question that guides this study is:

1. In what ways, and to what extent, do World Language Pre-Service Teacher candidates find value through participation in moderated online Twitter chats with other PSTs and In-Service Teachers?
Definition of Terms

Collective Learning

Community. The term community means different things to different people and is generally based on the context to which the community has evolved or the purpose that it serves. McMillan and Chavis (1986) provide four elements to help define community: membership, influence, integration, and shared emotional connection. Wenger et al. (2011) view communities and networks as separate, but intertwined, entities: community is the space and network is the connection that takes place among members.

Communities of Practice (CoP). Communities of practice “trace their roots to constructivism” (Johnson, 2001, p. 47) and have become a central facet in the collaboration of educators. Communities of practice take on various forms and names, but are often defined as “…relationships and interactions between and among people…” (Liu, Magjuka, Bonk, & Lee, 2007, p. 11) and retain several common elements across the board, such as membership, influence, integration, and shared connections, but many acknowledge that creating these types of purposeful communities takes time (Marsick, Shiotani, & Gephart, 2014; McMillian & Chavis, 1986). Communities of practice may be large or small, in person or virtual, long-term or short-term, comprised of mixed disciplines or similar ones, spontaneous gatherings or intentional meetings, or informal versus “institutionalized” (Wenger, McDermott, & Snyder, 2002, p. 27). Belonging to a group amplifies opportunities to engage in meaningful discussions through purposeful interactions that negotiate meaning, create connections, and develop common tools and resources (Sim, 2006; Wenger, 2000). Regardless of the differences, it is generally accepted that communities of practice share
three “fundamental elements”: domain of knowledge, a community of people, and a shared practice (Wenger, McDermott, & Snyder, 2002, p. 27).

**Professional Learning Networks.** Wenger et al. (2011) define network as a set of relationships, personal interactions, and connections with a reason to connect. The term *network* has taken on a more generic role in the definition of communities and is often used in conjunction with, or in place of, CoP. Both imply that learning takes place when people come together to share knowledge, but they have been separated out for empirical research, with CoP often employing qualitative research and networks focusing more on the quantitative side (Marsick et al., 2014). Used interchangeably, the term Personal or Professional Learning Networks, or PLNs, function as a means of connecting professionally. Though elements of communities include interacting face-to-face, connecting virtually is a practical option for establishing them because it removes the geographical and time/schedule barriers normally associated with group meetings (Camiel, et al, 2014; Tur & Marín, 2015) and has the potential to create a new kind of collaborative learning environment (Liu, et al., 2007).

**Self-Efficacy**

Self-efficacy is one's personal belief about her capabilities for accomplishing a task. First conceptualized by Bandura (1997), “...perceived self-efficacy refers to beliefs in one's capabilities to organize and execute the courses of action required to produce given attainments” (p. 3). These beliefs influence actions such as effort, motivation, time invested, perseverance, and managing stress levels, or as Bandura (1994, 1997) notes, they produce effects through “cognitive, motivational, affective, and selection processes” (p. 4). “If people
believe they have no power to produce results, they will not attempt to make things happen” (Bandura, 1997, p. 3). It is important to differentiate between self-efficacy and self-esteem because the two are not the same. Self-efficacy is the judgment of one's ability; whereas, self-esteem is the judgment of self-worth (Bandura, 1997). Those with high self-efficacy beliefs will view difficult tasks as challenges instead of defeats, and if they are unsuccessful in those tasks, they will reflect and revise their approach instead of giving up. Conversely, those with low self-efficacy beliefs, when confronted with difficult tasks, will focus on their own lack of ability, imagined obstacles, or unfavorable outcomes and will simply avoid the task (Bandura, 1994). It is important to note that self-efficacy is based on perception and not actual competence (Tschannen-Moran & Hoy, 2007); the perception can weigh more heavily on teachers who lack the mastery experience, though, such as Pre-Service teachers.

Social Media and Networking

Social media can generally be defined as a collection of online communication, via various channels (or platforms) that are designed specifically for community interaction and input, to share content, or to collaborate. These channels include websites, blogs, social networks such as Facebook, Twitter, or Reddit, social bookmarking sites, sites for curating information, or wikis. (Rouse, 2015). Twitter is an example of a social media platform. Social networking can be defined as “the practice of expanding knowledge by making connections with individuals of similar interests (Gunawardena, Hermans, Sanchez, Bohley, & Tuttle, 2009).
**Twitter**

Twitter is a free micro-blogging platform that functions with personal computers and mobile devices, allowing users to share messages known as “tweets” synchronously and asynchronously with a globally connected world (Lord & Lomicka, 2014). Twitter account holders have a landing page with a feed that updates with new posts from people they follow. Users can post replies directly to tweets, “retweet” a message (post it from an account as a message) with the click of an icon, or “quote” it with a personal post attached to the original tweet. Tweets are limited to 140 characters, including hashtags (#) and usernames (@username) if included in the post. Twitter is used to communicate with others as a social media platform, but is especially popular with educators (Tour, 2016).

**Value Creation Framework**

Wenger et al. (2011) developed this framework to measure value created by an activity or experience. They define value creation as “…the value of the learning enabled by community involvement and networking” (p. 7), and they separate the term network from community; a network is made up of the “relationships, interactions, and connections” among those who have a reason to connect while community represents the “shared identity” (p. 9).

The Value Creation Framework uses personal narrative stories to measure the value of the community an audience places on the experience, as they are the ones to directly benefit from it. However, when those same participants take their learning to a larger community, the value can be extended long-term (Wenger et al., 2011). A way to measure value is through Value-Creation Stories, a series of personal narratives created by participants (with or
without prompts) that show whether learning occurs and to what extent there is perceived value in an activity or experience.

**Other Terms**

*Cultural Capital* – what someone brings with them (knowledge, competencies, dispositions) to a new situation. Acquired over time and embedded into a way of thinking called “habitus” (Bourdieu, 1986).

*ESL/TEFL* – abbreviation for English as a Second Language or Teaching English as a Foreign Language.

*FL/WL* – abbreviation for foreign language (also known as World Language or Second Language). This includes any language used or taught in addition to a learner’s first, native language.

*Hashtag (#)* – used as a symbol to identify a topic thread in Twitter.

*IST* – In-service teachers (those who have been teaching 3 years or more).

*Pedagogical worldview* – “fundamental cognitive orientation of an individual or society encompassing the entirety of the individual or society's knowledge and point of view” (Wikipedia) with regards to teaching philosophies, methods, and approaches.

*PLC/PLT* – A framework for data-driven educational learning communities. Professional Learning Communities were made popular in education after a publication by Dufour, Eaker, and Dufour (2002). Also known as Professional Learning Teams, PLCs or PLTs involve groups of educators working together toward a common goal of learning together, collaborating, and impacting student learning.
**PST** – Pre-service teachers (teacher candidates in their final year of study who are preparing to enter the teaching profession).

**Qualitative research** – intensive study of events to describe and interpret them for meaning.

**Twitter Chats** – educational chats where groups of educators “meet” on Twitter at a designated day and time to discuss topics relevant to their discipline or field. Educational chats are marked with hashtags (#) to categorize the chat (Bearden, 2013).

**World Language Teachers** – teachers who engage in the practice of planning, teaching, and assessing of World Languages in K-16 schools or institutions.

**Significance of the Study**

With 40% of new teachers leaving within their first five years of teaching (Teague & Swan, 2013), providing a level of support necessary for the unique needs of novice teachers, beginning with their pre-service preparation program, is essential. Social media is emerging as one way to develop virtual support. The use of social media as a teaching tool is getting more traction in the research field, but the use of it with teacher education is not as robust, specifically with World Language undergraduate teacher candidates. Though many studies encourage the integration of Web 2.0 tools, the impact of them on learning or knowledge construction is lacking from empirical research. Much of the literature discusses acceptance of social media as a potential educational tool; studies reflect perceptions of its “educational value” but lack empirical studies for support. Current studies on social media platforms focus more on analyses of participation rates in social media for educational purposes, Twitter as a choice for collaboration, or the use of social media as a digital tool to teach about technology. Quantifying the number of tweets or discussion board posts helps determine student
engagement in social media but leaves little understanding of the value placed on these experiences or the impact these connections have for novice teachers. Results from this study are intended to inform teacher preparation practices.

Early studies of virtual Communities of Practice (CoP) and Twitter use in higher education or with pre-service teachers inform this study. Lord and Lomicka (2014) explored the development of a virtual CoP between educators, and Junco, Heiberger, and Loken (2010) conducted one of the first empirical studies on the effect of Twitter use and student engagement and grades. Reich, Levinson, and Johnston (2011) developed an online network to connect Social Studies PSTs with practicing teachers via an asynchronous discussion board in Ning to determine how conducive the platform was for developing an orientation toward praxis in Pre-Service Social Studies teachers and whether the PSTs valued the opportunity to connect, or expressed intention to do so, in the future. Other studies about the use of Twitter show that practicing educators are already using it as a part of their professional lives, as evidenced in a study by Carpenter & Krutka (2014) about how and why teachers use Twitter. With all we know about the power of professional networking and communities, bringing pre-service teachers into the fold as early as possible to introduce them to these communities and teach them how to participate and why is important.

This research will add to existing literature about PSTs and PLNs and using Twitter in higher education, specifically, on connecting World Language PSTs and ISTs to create a more cohesive and relevant professional experience for PSTs.
Theoretical Framework

This study is guided by the Value Creation Conceptual Framework from Wenger et al. (2011), which was developed as one way to measure the value created by participation in networks or communities. The term community has different meanings for different people and is generally based on the context to which the community has evolved or the purpose that it serves. McMillan and Chavis (1986) provide four elements to help define community: membership, influence, integration, and shared emotional connection. Wenger (2000), who coined the term “Communities of Practice,” notes that humans have always formed some sort of community since the beginning of time, and provides a more concrete definition of communities of practice as “…basic building blocks of a social learning system” (p. 229). The Value Creation framework serves to evaluate specific activities in relation to desired outcomes to provide “…relevant indicators for data collection” and “…a process for integrating these indicators into a meaningful account of value creation” (Wenger et al., 2011, p. 7). Interpretation of the terms community and network are key elements of the framework, given that many communities are made up of networks of people; they work together to create the “social fabric” when framed within a learning perspective (Wenger et al. 2011). The authors view them as separate, but intertwined, entities: community is the space, and network is the connection that takes place among members.

After examining various theoretical frameworks, the Value-Creation Framework was chosen because it provides a concrete way to analyze the value that participants place on activities. Online communities thrive due to the commitment and motivation of its members (Kraut & Resnick, 2011). Joining and participating in an online PLN requires purpose,
motivation, and expected value from the activity, and the contributions to these communities often relies on intrinsic and extrinsic motivation. For example, an IST might participate in the PLN because they enjoy sharing ideas (intrinsic) or because they like the public reputation it brings (extrinsic). Research has shown the value of PLNs for In-Service Teachers; therefore, it is relevant to explore the value that they could provide for those who are on the cusp of becoming teachers. The Value-Creation Framework relies on narratives to help explain what the community is doing and what is valued for, and by, whom (Wenger et al., 2011), which are teased out through stories told about the overall experiences of participants and through specific examples of activities or events. Wenger et al. (2011) provide templates designed to elicit stories about overall experience and specific instances of value, and include a matrix of five cycles of value through which participants cross at various points in their experience. Not all cycles may be reached by an activity or experience:

1. **Cycle 1: Immediate value.** Activities and Interactions - understanding what happened and the participants’ experience of it.

2. **Cycle 2: Potential value.** Knowledge Capital—understanding what the participation or activity has produced for participants that will be realized later. This includes human, social, tangible, reputational, and learning capital.

3. **Cycle 3: Applied value.** Changes in Practice – understanding what difference the activity or network has made to participants’ practice or context as professionals.

4. **Cycle 4: Realized value.** Performance Improvement – understanding what difference the activity or network has made on the participants’ abilities to achieve what matters to them.
5. **Cycle 5: Reframing value.** Redefining Success – understanding if participants’ notion of success has changed in some way.

**Overview of Approach**

This study will use a Qualitative Case Study design, which, as defined by Merriam (2009) and Creswell (2007), consists of an in-depth study of bounded systems. When researchers want to study an issue or problem in one or more cases within settings or contexts (called boundaries), this is considered a case study. A strength of qualitative analysis is that data can be analyzed more holistically. This does not discount the need for tight control; it simply means that cases can be made up of programs or groups, and not just individuals (Patton, 2002). Ensuring that a study is credible is of equal importance to qualitative researchers as it is to quantitative ones, but the manner of showing this will be different when working with qualitative data. Reliability and validity in qualitative studies are referred to as “credibility, transferability, and trustworthiness” (Golafshani, 2003, p. 600). Credibility, then, depends on methods, the researcher, and the “philosophical belief in the value of qualitative inquiry” (Patton, 2002, p. 553).

The purpose of this study is to examine the value of participation in one virtual PLN via Twitter chats as perceived by World Language PSTs. Though much quantitative research focuses on participation in social media and education, few qualitative studies have delved into understanding the value placed on a virtual PLN experience, and especially not with pre-service World Language teacher candidates. With this study, I aim to develop a more nuanced understanding of how a virtual Twitter network provides value for its members through the collection and analysis of personal narratives (“value creation stories”) and tweet
Qualitative studies are appropriate when the researcher wishes to probe more deeply into a problem or environment to gain a greater understanding of it (Creswell, 2007). Miles, Huberman, and Saldaña (2014) note that a strength of qualitative research is the ability to collect and analyze data more organically as events of an activity or experience unfold. A case study is defined by Creswell (2007) as a study of “…bounded system with the focus being either the case or an issue that is illustrated by the case (or cases)” (p. 244). For this study, I have created a Professional Learning Network (PLN) for pre-service and in-service teachers using the hashtag #Teach2Teach on Twitter that will meet six times over the course of a three-month period. These chats will serve as the boundary for the case study. In-Service Teachers are using educational Twitter Chats for connecting with others in the field or for professional learning and development or resource sharing (Carpenter & Kruka, 2015; Tour, 2016); as case studies are often “…anchored in real-life situations” (Merriam, 2009, p. 51), this bounded case study reflects current professional activities of practicing teachers.

**Organization of the Study**

Chapter 1 is an overview of the study and includes the purpose and background for the study, a definition of key terms, the significance of the study, the theoretical framework that shapes the study, and a brief description of the methodological approach for this study. The Literature Review in Chapter 2 provides an overview of the literature examined to place this study within existing literature. Chapter 3, Methodology, explains the reason behind the research design and method and the procedures to be followed to address the research question and conduct the study. Chapter 4 presents the findings. Chapter 5 discusses the findings and implications for future studies.
CHAPTER 2: LITERATURE REVIEW

Based on the assumption that engaging in a professional network or community has a positive impact on teaching and student learning, and that virtual PLNs can serve as communities of practice for pre-service teachers, this study examines the value placed on connections and collaboration that occur within a community of practice of pre-service and in-service World Language teachers via Twitter. With little time given in teacher preparation programs to cultivate relationships with professionals other than their cooperating teacher, this study specifically examines how PSTs value participation in an online Twitter-based PLN that connects them to each other and in-service teachers (ISTs) through moderated, online chats. The following question frames this study:

1. In what ways, and to what extent, do World Language Pre-Service Teacher candidates find value through participation in moderated online Twitter chats with other PSTs and In-Service Teachers?

This literature review examines existing literature to historically situate teacher preparation programs to understand the role that Professional Learning Communities/Networks (PLC/PLN) have on practicing teachers and to establish a baseline of studies with regards to Twitter use in higher education or with educators, and how it has been used with Pre-Service Teacher candidates. To understand the role that communities of practice have in teacher preparation, it must first be examined as a professional development guide for in-service teachers. This literature review starts with an overview of teacher preparation and various key issues surrounding traditional World Language teacher preparation programs. It follows with an overview of technology initiatives with Higher Education and PSTs,
including using the social media platform Twitter. I sought out studies that specifically focused on PSTs, such as one by Reich et al. (2011) who used an online social network to study how Pre-Service Teachers valued and expressed intent to seek out future opportunities to participate in networks and PLNs. To better understand the CoP theory and its role with various networks with educators, I reviewed Wenger’s (2000) theoretical basis of Community of Practice, the subsequent studies that explored this concept, literature on communities of practice in the educational setting, specifically with K-12 teachers, and the reasons behind initiatives such as school or district-wide Professional Learning Communities (PLCs). Finally, to better understand what motivates ISTs to participate in networks, I looked at literature on the will to learn and motivation and ways to measure or assess value.

**Literature Synthesis**

**Teacher Preparation**

To understand the value of Professional Learning Networks for Pre-Service Teachers, it is important to begin with an understanding of the historical perspective of teacher preparation programs and the unique challenges faced by World Language Teacher Educators. Preparing future teachers has moved from preparing young women to teach through “normal schools” in the 1800s to Institutes of Higher Education and formalized Schools of Education (Morey et al., 1997); many of today’s teacher preparation programs, however, do not look much different than those of yesteryear. World Language teacher education programs remain much like those of past decades: take courses in content from a Liberal Arts College, Pedagogy courses from the College of Education, observe classroom teachers in action once or twice during their undergraduate tenure, complete a generic or
specialized methods course, then student teach under the direct supervision of a cooperating teacher and a university supervisor (Tedick, 2009). Although most states offer k-12 certification for World Language teachers, many PSTs are not afforded the opportunity to engage with students or teaching praxis at all levels. With little opportunity to observe or experience a variety of levels and pedagogical worldviews, many novice teachers enter the classroom only partially prepared for the realities of teaching.

**Field experience.** Literature continues to show that the field experience is the most critical piece of a pre-service teacher's career. Called by many names (field experience, student teaching, internship, practicum), the time spent with a cooperating teacher in a school with actual students has always been considered the best way to prepare future teachers and link the theory-to-practice gap; it is viewed as such by pre-service teachers and teacher educators alike (Dymond, et al., 2008; Morey et al., 1997; Wilson et al., 2001; Zeichner, 2010). However, students come into teacher preparation programs with a myriad of experiences, having spent almost 16 years observing how school works from the student perspective. In many teacher preparation programs, there can be few opportunities to participate in classrooms during the undergraduate program, leaving pre-service teachers entering the practical experience with little exposure to various teaching methods. The PSTs, therefore, look to their cooperating teachers as mentors to help usher them into the ‘real world’ with everything from guidance on curriculum, to classroom management, methods, pedagogy, etc. This, as well as knowing that field experience is critical for novice teacher development, puts pressure on the cooperating school and teacher to serve as the model for teaching. Ronfeldt (2015) discusses literature that supports partnerships between university
programs and k-12 schools, noting that these “deliberate partnerships” positively impact how pre-service teacher candidates approach pedagogy and methods, not only while student teaching, but also in their future classrooms. He notes, however, that there is not much literature that links field placement schools and instructional effectiveness by PSTs. His study investigated whether placement of PSTs in certain types of cooperating schools predicted future performance. Ronfeldt (2015) found that PSTs should learn to teach in schools where there is teacher collaboration and support, as those characteristics cultivate instructional effectiveness.

**Self-efficacy.** Self-efficacy in teachers is an area that has been widely studied. Self-efficacy is defined as a “teachers' judgment of her ability to plan and execute difficult instructional tasks while also producing a set of desired student learning outcomes and performances” (Bautista & Boone, 2015, pp. 238). Studies generally support the assumption that teachers with a high self-efficacy will teach well, are more likely to implement new practices, and are willing to try new things (Bautista & Boone, 2015). Self-efficacy for novice teachers is influenced by mastery experiences, vicarious experiences (provided by social models), social persuasion (the verbal cheerleaders), and mood (Bandura, 1994). When relating to PSTs, it has been shown that when PSTs see exemplary teaching practices and have more time to cultivate their teaching, their self-efficacy rises. When programs have limited time or other constraints that prevent PSTs from engaging in these practices, PSTs' self-efficacy will be affected (Bautista & Boone, 2015). Professional competencies are formed early on for PSTs (Pecháčková, Drahokoupilová, & Krámová, 2014), and efficacy beliefs are more “pliable” at early learning stages; “...teachers’ beliefs and self-efficacy about
their ability to successfully carry out specific tasks and actions are perhaps most susceptible to influence during student teaching and the first year of inservice [sic] teaching” (Flores, 2015, p. 3; Tschannen-Moran & Hoy, 2007). In addition, other sources can contribute to this if mastery learning is not available (Tschannen-Moran & Hoy, 2007). Based on the challenges mentioned earlier about teacher preparation and field placements that teacher education programs face, personal learning networks can play a large role in developing novice teachers' self-efficacy, both through verbal support and vicarious modeling. Various studies have examined self-efficacy for both pre-service teachers and in-service ones. Tschannen-Moran and Hoy (2007) studied self-efficacy in both and found that for novice teachers, support from colleagues and community had a higher impact on raising self-efficacy than it did for ISTs. In her study on Science PSTs and inquiry-based science learning, Smolleck (2011) notes that planned purposeful experiences can directly raise PSTs' self-efficacy. School environment also plays a large part in raising or lowering self-efficacy in general: schools with more support raise self-efficacy, but professional isolation can lower it. These results reflect the need for more support for novices, which can depend greatly on their teacher preparation experience and their student teaching placement.

**Theory to practice.** It can be challenging for programs to be authentic in their exposure of theories to PSTs during coursework while maintaining a pragmatic view of the ‘real world.’ It is generally accepted that an internship (“student teaching”) is the most meaningful to PSTs, but this can also be where theory and practice divide, with PSTs struggling to meet the demands of a program they may see as artificial with the demands of a classroom full of real students (Smits & Friesen, 2002). Russell refers to these tensions as
being struggles between university and cooperating school expectations, child- and teacher-centered approaches, and the relevance of what was learned in university courses versus the “real world” (as cited in Sim, 2006, p. 78) and that Communities of Practice are “opportunities to address these tensions” and introduce PSTs to the “professional culture” (as cited in Sim, 2006, p. 79). Self-confidence plays a role in whether PSTs will be successful in their student teaching practicum. In a study of stages of self-efficacy in PSTs, Iqbal and Mahmood (2010) found that self-confidence drops initially when novice teachers face the transition of theory to practice. What worked so well in their safe space of methods courses may not translate to success in a real classroom. Tschannen-Moran and Hoy (2007) refer to this as “reality shock” (p. 946). As PSTs adjust to their situations, however, their self-confidence improves (Iqbal & Mahmood, 2010). School environment also plays a large part in self-efficacy: more positive environments tend to raise self-efficacy (Tschannen-Moran & Hoy, 2007). When faced with environments that were less than supportive, however, Iqbal and Mahmood (2010) found that novices who had a personal commitment to success and a higher level of self-confidence remained reflective in their teaching practices, even in a less than supportive environment.

In summary, the literature shows that although the field experience is the most critical for developing teaching worldviews for PSTs, they are often only exposed to one practicum. Often there is a gap from what is learned through coursework and how that looks when teaching in the real world, which can cause tensions to arise for PSTs, cooperating teachers, and the university program. While self-efficacy is influenced by mastery experiences (Bandura, 1994), for many pre-service teachers their student teaching is the only opportunity
to gain experience. In her study on Science PSTs and inquiry based science learning, Smolleck (2011) notes that there must be planned purposeful experiences to raise PSTs' self-efficacy and that self-efficacy increases as a direct result of those experiences. Finding ways to make this happen with technology, then, is a benefit for the PSTs, their practicum schools, their students, and their future teacher selves.

**Technology-Related Initiatives in Professional Education**

Though most teacher preparation programs remain traditional in their design, some are beginning to embrace new technologies and use them to enhance the process of preparing pre-service teachers. To identify literature that supported technology-embedded teacher preparation, Billingsley and Scheuermann (2014) conducted a literature review and identified 14 articles that dealt with virtual reality and pre-service teachers specifically for special education. Of those studies, several can be useful as guidance for world language teacher preparation programs. For example, the authors note one study by Garland, Vasquez, and Pearl (2012, as cited in Billingsley & Scheuermann, 2014) that measured efficacy of providing teacher training within a virtual environment using TeachLivE™ (formally TeachME), and participants showed an increased value in their learning and confidence to teach after receiving coaching in the TeachLivE™ environment. Ochoa, Kelly, Stuart, and Rogers-Adkinson (as cited in Billingsley & Scheuermann, 2014) looked at a “multi-media computer supported problem-based unit” (p. 262) for special education (MUSE) referral processes. Results of their study showed that participants valued the project-based learning module as it helped them connect content knowledge with real-world practice. These studies indicate that providing PSTs with alternative approaches is being explored by teacher
preparation programs nationwide. As such, the following literature review will focus on the various social media tools and how they are being used to foster learning throughout institutes of higher education and specifically, with pre-service teacher candidates enrolled in undergraduate teacher preparation programs.

**Simulations.** Several companies such as simSchool and TeachLivE™ have tried to replicate the classroom experience for pre-service teachers. SimSchool began as a means of addressing whether it was possible to learn to teach via simulation. Per their website, simSchool is used by “hundreds of educational programs and schools” and has levels of pricing from per student to institutional access (SimSchool, 2016.). The program functions like a “virtual practicum” for developing common skills such as differentiation or classroom management, and allows users to vary class sizes and make up of students to present various classroom situations. A strength of the program is that it allows preservice teachers the chance to practice with a wide range of tasks, students, and situations, including ones they may not encounter while student teaching. The program uses “dynamic modeling” to combine variables differently and works based on the choices that the PSTs make, thus affecting how the “students” respond, both academically and behaviorally (Tyler-Wood, Estes, Christensen, Knewzek, & Gibson, 2015). Preservice teachers can try out a variety of teaching methods or tasks, classroom management decisions, and differentiation without fear of negatively affecting real children. In addition, simSchool engages participants in the reflective process where they can stop and think about what is happening and why, which is something that generally cannot happen during student teaching. Much like simSchool, TeachLivE™ allows PSTs to experiment and fail in a safe environment (Sawchuk, 2011).
The set-up is different, though, as TeachLivE™ is a “...mixed-reality classroom with simulated students that provides teachers the opportunity to develop their pedagogical practice in a safe environment that doesn’t place real students at risk” (TeachLivE, 2016, para. 1). While simSchool is completely animated by avatars that have been pre-programmed with “trillions” (SimSchool, 2016) of variables, participants with TeachLivE™ stand in front of a screen and teach avatars who are live actors in a lab across campus and who mimic student responses in real time. Those actions are captured by technology and transferred to the avatars that the practicing teachers see in their “classroom.” The goal of simulations is not to replace the student teaching internship but instead to enhance them and give PSTs practice before trying out their methods on real students (Sawchuk, 2011). While these simulations are potentially valuable for PSTs, they are not yet available for World Language teaching experiences.

**Video conferencing.** Video conferencing is an area that can bring practicing professionals together with pre-service teachers. In their study, Lord and Lomicka (2004, 2007) used various collaborative tools as part of a special seminar between two universities. Through multi-user, object-oriented domains (MOOs), chat, and discussion boards, pre-service teachers conversed synchronously and asynchronously about topics related to teaching languages with each other and experts in the field of second language acquisition and technology. The goals of the seminar were to combine theory with hands on practice, by exposing PSTs to technology to increase their skills and solidify the importance of technology training in the field of foreign language teacher preparation. The results were positive in that students were exposed to viewpoints not only from two different instructors,
but also from experts in the field. They also found that PSTs could learn how to use technology by using technology.

**Computer-Mediated Chat (CMC).** Much research has been done using CMC with language learners but only a few studies connect PSTs with each other or with in-service teachers. In their study on social presence with CMC, Lomicka and Lord (2007) used the Community of Inquiry framework to analyze PSTs’ different dialogue journals and found that the groups that shared their journals with partners via email or engaged in a discussion board online had the most participation and social presence in terms of number of words and interaction. Qualitatively, they found that the groups used different methods to interact: the email partner group focused more on compliments and encouragement while the Discussion Board group asked questions and gave advice/opinions. CMC, then, is one way to develop affective domain and establish social presence online. Another study by Reich et al. (2011) involved connecting Social Studies PSTs with ISTs on a closed social network called Ning. Their study examined how to foster PSTs’ membership into communities of practice through online asynchronous discussions. The PSTs were able to contribute to discussions, ask questions, and engage in reflective dialogues with ISTs from around the world. Results from their study showed promise for creating social spaces intentionally to provide PSTs an opportunity to dialogue with ISTs in their field. However, the study showed that the PSTs were highly engaged during the semester they were required to participate but were uninvolved once they began their student teaching practicum full time. Nonetheless, the study was one of the first to examine PSTs in online communities of practice. Results from a study on CMC with pre-service teachers confirmed that communities of novice World
Language PSTs were “viable” and that engaging in CMC can enhance instruction while also emphasizing the importance of social connections with peers (Arnold, Ducate, Lomicka, & Lord, 2005).

In summary, there are a variety of opportunities available to enhance the teacher preparation experience through technology such as simulations or CMC, which have been shown to increase PST confidence and develop professional connections. The literature connecting PSTs with ISTs is still lacking, but studies on the positive effects of using social media platforms such as Twitter are starting to emerge (Carpenter, n.d.; Carpenter & Kruka, 2015; Lord & Lomicka, 2014).

**Twitter**

With over 500 million users, Twitter is a free micro-blogging platform that functions with personal computers and mobile devices, allowing users to share messages known as “tweets” in real time or asynchronously with a globally connected world (Lord & Lomicka, 2014). Twitter account holders have a landing page with a feed that updates with new posts from people they follow. Users can post replies directly to tweets, “retweet” a message (post it from an account as a message) with the click of an icon, or “quote” it with a personal post attached to the original tweet. Tweets are limited to 140 characters, including hashtags and usernames if included in the post. Users can also “favorite” a tweet, which prior to October 2015 was indicated by a star icon; it has since changed to a heart. Twitter users are identified by an @ symbol in front of their username (ex: @twittergirl), which can be included in the tweet as a direct message to the recipient. The platform includes a notifications page that shows a user if anyone has included him or her in a tweet. The pound sign (#), called a
hashtag in the Twitter world (About, n.d.), is used to identify a topic and has become a core mechanism for communicating a shared interest (Lewis & Rush, 2013) because users can search for feeds via hashtags to find topics of interest to them. Twitter also allows posts that include links to URLs, images, and video (Carpenter, n.d.), and users can follow the current posts on their newsfeed (main landing page of Twitter). Unlike other social media platforms, the relationship between Twitter users is asymmetrical. That is, Cacilia can follow Vincent, but Vincent does not have to follow her; both can view each other’s tweets on the public timelines (called “feeds”). The term “follower” is used in place of “friend” (from social media such as Facebook) which connotes a more professional, collaborative relationship that reflects an interest in what someone is saying. Thus, following someone you have never met in real life is more common on Twitter than on something like Facebook (Carpenter, n.d.). Tweets show up on followers’ timelines and can be sorted by hashtags or usernames. Users can also send a private message to another user if they are followers (About, n.d.). Although limited to expressing one’s thoughts in 140 characters or fewer may be challenging, Twitter has become popular with current educators who tweet from conferences or participate in weekly #edchats as communities of practice (Carpenter & Krutka, 2015; Lord & Lomicka, 2014; Wesely, 2013).

**Twitter use in education.** In 2010, Junco et al. published one of the first studies on Twitter use and student engagement, conducting an experiment with 125 pre-health professional majors at an institute of higher education. The results quantitatively showed that using Twitter in the classroom increased student engagement and raised GPAs; a qualitative sampling showed that Twitter continued course discussions, leading to higher student
engagement with the content. Recent studies focus on the use of Twitter as a tool in higher education (Carpenter & Krutka, 2014; Jacquemin, Smelser, & Bernot, 2014; Prestridge, 2014), and quantitative and qualitative studies about Twitter and pre-service teachers have examined tweets as reflective practices, a debate task, or to connect with jobs or other teachers and as a potential technology tool for future classrooms (Carpenter & Krutka, 2014; Lin, Hoffman, Borengaser, 2013; Tur & Marín, 2015; Wright, 2010). A later study by Junco, Elavsky, and Heiberger (2013) included an empirical comparison of Twitter use to measure student outcomes, collaboration, and how to effectively integrate Twitter at the higher education level. Their study examined the voluntary use of Twitter in a large course setting compared to a first-year seminar course where it was required. Results from their study showed that when Twitter is required and used with a course, and when faculty are also engaged in the activity, there is an increase in student engagement and grades.

Although empirical studies on the use of Twitter in education have grown since the initial publication by Junco et al. (2010), there is still a dearth in examining how Twitter can be used with PSTs to form a professional learning network. Nonetheless, there are several commonalities found in the literature about Twitter and its use in education, including increasing motivation and its effect on grades (Junco et al., 2010; Wright, 2010), learning how to use social media by engaging with it (Carpenter, n.d.), and how the platform is being used to create Professional Learning Networks among practicing teachers (Carpenter & Krutka, 2015; Wesely, 2013). Researchers have also looked at examples of Twitter in relation to student-learning outcomes and support of informal learning outside the classroom (Ebner, Lienhardt, Rohs, & Meyer, 2010; Kassens-Noor, 2012). However, the largest areas
of literature surrounding the use of Twitter concentrates on students’ perceptions of Twitter as an educational tool and the quantitative participation in a microblogging activity through number of tweets, reposts, retweets, or shares while participating in a Twitter activity (Prestridge, 2014). There has also been research using Twitter to establish communities as shown in Parry (2008) and Lord and Lomicka (2012). Both studies examined the role of Twitter in higher education to form a collaborative community and extend classroom learning.

In a review of literature, Prestridge (2014) lists several studies of Twitter use in higher education. As cited in Prestridge, (2014), Coxley and Parry’s study looked at live tweeting for engaging students in class discussions; Reid’s study considered the “social, emotional, and academic development” of social networking environments. Prestridge’s (2014) own study examined varying interactions (learner-learner-instructor, learner-content, and learner-interface) following Moore’s Transactional Distance Theory; she found that questions by lecturers were less engaging via Twitter, and student-directed ones were more common. Her mixed findings echoed those by Kassens-Noor (2012) who compared the use of Twitter outside of class to determine if it helped students learn a subject matter and in which learning context it offered advantages; she found that Twitter can facilitate the sharing of ideas. Many educators have an interest in using technology in the classroom to engage and motivate their students, and Twitter studies have followed suit. Forkosh-Baruch and Hershkovitz (2012) examined cases of Twitter use in institutes of Higher Education. After analyzing tweets, they found that using this type of social media networking promoted distribution of knowledge and served as a way of enabling informal learning within a
community. Other studies discuss integrating Twitter for collaboration, debate, connections to content, participation, and to expand interactions among students and instructors (Tur & Marín, 2015). Some studies have shown that students feel more comfortable asking “intimate questions” and self-disclosing information when using Computer Mediated Chat (CMC) than in a face-to-face environment; other studies show that the use of digital “mediated immediacy” can increase positive attitudes about peers, the course, or the instructor (Mazer, Murphy, & Simonds, 2007). Ebner, Lienhardt, Rohs, and Myer (2010) investigated micro-blogging for its ability to support informal learning (what goes on outside of the formalized curriculum). Results from their study showed that micro-blogging platforms give students “…the opportunity to be a part of someone else’s process by reading, commenting, discussing or simply enhancing it” as a critical part of one’s learning process (p. 99). Using Twitter for synchronous chats could allow for this type of mediated immediacy to help break down psychological or physical barriers that can be found between university faculty, PSTs, and cooperating teachers, and add to the informal learning of pre-service teachers.

**Twitter in pre-service education.** Several studies comprise pre-service teachers and micro-blogging. Krutka (2013) conducted a study with 20 PSTs in his methods class to determine if social media afforded a different type of educational experience for them. His study examined convergence culture with regards to media convergence, participatory culture, and collective intelligence. During the study, participants engaged with a variety of social media, including Edmodo and Twitter. He found that Edmodo seemed to provide an area of freedom for student expression for their positive and negative experiences because the PSTs knew it was not open to the public like their Twitter feed was.
In a study about PSTs during a methods and technology course, Turcsányi-Szabó (2012) asked PSTs to use Twitter to share their “aha” moments and build their Personal Learning Networks (PLN) to reflect on what was happening during learning moments. Prestridge’s (2014) study on PSTs and Twitter focused on interactions that took place via Twitter (learner-instructor-learner, learner-interface, learner-content) based on Moore’s Transactional Distance Theory. She wanted to examine how students interact with content and generate knowledge. For her study, PSTs used a class hashtag in Twitter to communicate about content during lectures. Carpenter (n.d.) also focused on pre-service teachers and the use of Twitter during their professional year. He noted that teacher preparation programs can rarely do it all; there is a need for expansion of knowledge. Microblogging with platforms such as Twitter can fill that knowledge gap because it exposes novice teachers to outside resources. The participants in his study were required to contribute at least three tweets per synchronous chat during the semester, which made up a little under half of the overall participant tweets. As with other studies on Twitter, he focused on student perceptions of using the tool but also looked at whether these students continued to use Twitter after the course ended while they were participating in their student teaching practicum. Results showed that students extended course content and discussion through the twice weekly chats. Participant use was not required during the subsequent semester and did drop; only one student participated in a Twitter Chat during the following student teaching semester. Carpenter (n.d.) also notes that Twitter broadened the connection opportunities for his students, allowing them to connect with a variety of educational professionals, such as superintendents or school board members. Exposing pre-service teachers to an online
community (synchronous chats already taking place) where participation was voluntary gave the PSTs a space to explore course content in the short run and could help pave the way for future professional development as a practicing teacher in the long run. Carpenter and Krutka (2015) also examined tweets of undergraduate Higher Education students and coded them into categories; other data included a survey about the participants’ experiences using Twitter and a focus group with the high-activity participants with regards to number of tweets. Their study was qualitative and quantitative in nature, and it looked at the types of tweets in addition to the overall number. Tur and Marin (2015) studied educational experiences of teacher education students in Spain using Twitter to debate a topic. Though the main objectives in their study were to “empower student teachers’ Personal Learning Environments, engage student participation and enhance their use of social media and mobile devices for learning” (Tur & Marin, 2015, p. 46), data collection revealed the student teachers’ engagement with Twitter.

**Collaborative Professional Learning**

Based on practices from the business community (Vescio, Ross, & Adams, 2008), Professional Learning Communities (PLCs) have entered the educational arena to encourage collaboration, analyze data, and reflect on best practices by teachers (Dufour et al., 2002; Marsick et al., 2014). The idea of grouping educators has taken on many informal terms such as “learning community, community of inquiry,” “professional development community” (Christiansen & Ramadevi, 2002), PLTs (Professional Learning Teams), PLN (Personal/Professional Learning Networks), or Communities of Practice (Wenger, 2000). Regardless of how they are called, they all serve to classify groups of educators who make up
a community where purposeful collaboration takes place for the sake of improving student learning. Lexically, these terms hold slightly different meanings, but the overall goal of improving student learning is a common thread among them. In the educational setting, literature has shown that participation in communities leads to changes in teaching practices (Englert & Tarrant, 1995); therefore, it makes sense to start pre-service teachers on the path to understanding the role of professional learning communities in their personal and professional growth.

**PLC.** Regardless of how they are identified, the idea of working together toward a common goal of learning together, collaborating, and impacting student learning is a common thread among all of them. It was Dufour and Eaker's 1998 publication of *Professional Learning Communities at Work: Best Practices for Enhancing Student Achievement* with its goal of systematically altering school improvement that sparked the current movement toward the Professional Learning Communities (PLC) model, Dufour et al., 2002). What followed were numerous studies on the importance of PLCs and the literature is saturated with various studies on the impact of these communities of learning. However, there are only a few studies that focus on the importance of these communities with pre-service teachers (PSTs). This is not the first time, however, that collaboration among teachers has been presented as a model; team teaching and the post-Sputnik educational shifts in the 1960s also promoted collaboration as a way to improve teaching and learning (Joyce, 2004). Though various forms of collaboration and inquiry have been implemented and deserted in school systems across the country, it was Dufour and Eaker's publication that streamlined the process of organizing communities of teachers and turned it
into a more formal framework for improving student learning, (Dufour et al., 2002) and PLCs have become one of the most prominent approaches to improving student achievement across the country (Woodland & Mazur, 2015). In their review of literature about PLCs and their impact on teaching practices and student learning, Vescio, Ross, and Adams (2008) found 11 empirical studies that moved beyond self-reporting of value. Though pedagogy was not specifically referenced, they found a common thread among the studies that participating in PLCs leads to changes in teaching practices as evidenced by empirical data to support the claims. The studies also showed that participation in PLCs led to a more student-centered worldview on teaching and increased collaboration among teachers. Six of the studies showed an improvement in student learning via rising achievement scores in the schools.

**Effectiveness of PLCs.** “Professional learning communities are our best hope for reculturing schools” (Dufour et al., 2002, p. 9). This is a powerful statement from the authors who have pushed for the inclusion of PLCs into the institution of education. But is it a valid statement? Vescio et al. (2008) noted that many studies focused on perceptions of learning communities but failed to report on the outcomes on practices and impact on student learning. Therefore, they focused on two research areas as they reviewed literature on the characteristics and results of teacher participation in professional learning communities: changes in teaching practices and whether the literature supports the assumption that student learning increases. Their review was limited to published books or articles that included data about impact, and they reported on specific studies that included data to support changes and impact. In general, they found that when teachers participated in a learning community of some sort, their teaching practices changed for the better. Two studies in their literature
highlighted a change in focus on student achievement: one with low-achieving minority students and another that focused on raising reading levels. The latter showed changes in teacher attitudes toward student learning, which enabled them to develop “stronger instructional norms” (Vescio et al., 2008).

To maximize learning and reward for risk-taking, however, there needs to be a balance of “challenge and support;” teachers who feel supported or have opportunities for professional growth will be more committed and effective in the classroom (Marsick et al., 2014). Additionally, support from networking, collaboration, and expanded professional roles contributes to the teacher efficacy in meeting student needs (Rosenholtz, 1989). Other areas for self-reported growth that emerged from Vescio et al. (2008) include teacher perceptions of change and professional culture where the focus moved from teacher practice to student learning. Several studies revealed a sense of teacher autonomy when given the power to make decisions. Another finding was that when PLCs had specific foci, they tended to be more successful than those that met without specific purposes. Vescio et al. (2008) found that literature from eight out of 11 studies supported impact on student learning, mostly via comparison of test scores or achievement to strength of PLC participation. The effectiveness of PLCs is also dependent on their intentional foci. As one might expect, PLCs that focused on student learning had more gains in student learning. Overall, the literature reviewed by Vescio et al. (2008) supports the assumption that student learning increases when teachers actively and purposefully participate in PLCs. However, the caveat is that the PLC model is about the “process, not the product” and the goal is not to get teachers to collaborate but to work together to improve student achievement (Vescio et al., 2008). There
is also a body of research about collaboration and its effect on school change or culture. As part of their study on professional development with Science teachers, Penuel, Fishman, Yamaguchi, and Gallagher (2007) reference research on school reform that supports networking among teachers to initiate school change or build trust that allows for change. Strahan (2003) notes that collaboration is a hallmark of successful schools, as teachers who work together “...develop stronger instructional strategies” (p. 128) that enhance student achievement.

**PLC vs PLN.** The PLC concept, as presented by Dufour et al. (2002, 2005), is about cultivating a collaborative environment where staff work together to impact student learning. It involves a shift in mindset about how teachers teach, what the purposes for teaching encompass, and how teaching positively affects student learning. One of the biggest shifts in thinking for PLCs is moving from a focus on teaching to a focus on learning. Because of this, members make data-driven decisions to answer questions posed by Dufour et al. (2002): “What do we want students to learn? How will we know if they have learned it? What are we going to do if they do not learn it?” (p. 41). Additionally, Dufour et al. (2002) note that teachers in PLCs are encouraged to seek out best practices from research and other resources, through “a process of collective inquiry” to determine how to “improve...recognize and celebrate” student learning (p. 19). In a PLC, leadership becomes a shared role between administrators, who are viewed as “leaders of leaders,” and teachers, who are called “transformational leaders” (Dufour et al., 2002, p. 23). If we use the definition of PLC by Dufour et al. (2002, 2005), then Twitter-based PLNs do not fall within the purview of a pure professional learning community. By default, most participants in virtual PLNs come from
different parts of the country or world and may cross over in academic disciplines. Though these are a positive aspect of PLNs, they can also inhibit the data-driven piece of PLCs and the specificity of finding what works for the school. While it is possible for participants to get general feedback from others about their students' results, this process does not work in the same way as teachers from the same school analyzing student data. The goals, then, of a PLN may lean more toward personalized professional development.

In summary, PLCs have been shown to impact student learning when implemented properly. They also encourage true collaboration and help reduce the isolation that is common to the teaching profession. In their book *On Common Ground. The Power of Professional Learning Communities*, Dufour et al., (2005) enumerate the ways that various organizations endorse PLCs, including the National Commission on Teaching and America's Future, National Board for Professional Teaching Standards Core Propositions, and the National Education Association (NEA)'s key initiatives, just to name a few. The authors compartmentalized professional development and its effect on student success through formalized professional learning communities; however, once implemented formally in school systems, PLCs may lose their appeal as teachers, especially those considered “specials” or “electives” that may begin to feel forced to participate in an artificial environment that may not relate to their area of expertise or experience. In addition, losing autonomy to make decisions can affect teachers' motivation to participate. This can lead to teachers either checking out emotionally or seeking a professional network on their own. Graduates of World Language teacher education programs must be prepared to enter a profession ready to collaborate with other teachers in their schools and profession” (Tedick
Virtual platforms such as Twitter have become established Professional Learning Networks across the country and the world because educators can connect without boundaries.

**Combating isolation.** Throughout the literature, the term *professional* has been contrasted with *worker* to indicate an individual who has pursued higher education and accumulated a “body of expertise” to the point where he or she can work independently. However, a growing body of literature points to the success of individuals working together to curate ideas, knowledge, and products (Marsick et al., 2014). Teamwork tends to be the norm in other professions yet remains the exception in education, even though research supports collaboration as a benefit (Dufour et al., 2005; Schmoker, 2005). Teachers may share resources openly, but as a profession, they remain isolated. Elmore noted that teacher isolation is the “…enemy of improvement” (as cited in Schmoker, 2005, p. 141). Being separated physically from other teachers only serves to amplify the belief that teachers can teach as they wish with no real outside feedback on their methods or practices. This physical isolation can lead to a dearth of new ideas as well, with teachers not pushing their own boundaries or expanding their practices (Schmoker, 2005). When teachers do come together for professional development, the focus is often on learning new skills or increasing knowledge in a specific area of teaching practices, and less on collaborating to curate something new (Vescio et al., 2008). Survey responses in a qualitative study on microblogging by Carpenter and Krutka (2015) found that Twitter facilitated collaboration and helped reduce isolation. For two novice teachers in their study, Twitter helped them
transition into the profession, as it “…provided access to knowledge and/or community for otherwise isolated teachers (p. 721).

A summary of literature regarding outcomes from schools that have implemented forms of Professional learning communities showed a contribution to a reduction in isolation for teachers and an increased interest in a school's mission for student success, curating new beliefs about teaching and learning, higher job satisfaction, and the likelihood to enact change (SEDL, 1997).

**Twitter as a PLN.** Society is already networked to various communities in the non-virtual world, be they personal or professional. PLNs, known as Personal Learning Networks, are groups of individuals who have a shared interest. Teachers who enter the profession today are accustomed to an online community or network of friends, so establishing an online network of professional colleagues is not a giant leap for them. Familiarity with connecting to others regardless of location means that more teachers might choose to engage in a virtual PLN through platforms such as Twitter, and will hopefully be the leaders who encourage this type of collaboration. PLNs share their origins with connectivism, as noted in Siemens (2004):

> The starting point of connectivism is the individual. Personal knowledge is comprised of a network, which feeds into organizations and institutions, which in turn feed back into the network, and then continue to provide learning to the individual. This cycle of knowledge development (personal to network to organization) allows learners to remain current in their field through the connections they have formed. (p. 5)
Establishing PLNs is of growing interest in the field of education, and Twitter is a practical option for establishing them because it removes the geographical and time/schedule barriers normally associated with group meetings (Camiel et al., 2014; Tur & Marin, 2015). Visser, Evering, and Barrett (2014) found that teachers use Twitter for professional development and to improve classroom practices. In a qualitative study, Carpenter and Krutka (2015) surveyed K-16 educators about their use of Twitter for professional development and found that participants appreciated the easy access to other educators, the ability to share information and resources, and how Twitter provided opportunities to stay up to date on current educational trends. Twitter executives estimate 4.2 million daily tweets are related to education (Stevens, 2014), and synchronous educationally-focused chat sessions, designated by hashtags (#), can be found taking place daily (see Figure 1 below).

![Distribution chart by time](https://sites.google.com/site/twittereducationchats/visuals)

**Figure 1:** Distribution of Educational Chats on Twitter Weekly.

Making connections. Twitter and other social media platforms are gaining traction at Institutions of Higher Education, especially with teacher preparation programs, as a means of connecting pre-service teachers with experts. Several studies focus on PSTs and microblogging. Learning about community participation is not the only reason to engage PSTs early in their programs, though. Sumsion and Patterson (2004) include a list of other ways some teacher preparation programs encourage community, such as online discussions, cohorts for large groups, or engaging PSTs in action research. Literature can also be found about virtual asynchronous and synchronous discussions between PSTs and invited in-service practitioners, either via email, chat, or Skype (Krutka, 2013; Lord & Lomicka, 2007). Krutka (2013) conducted a study with 20 PSTs in a methods class to determine if social media connections with in-service teachers afforded a different type of educational experience for the PSTs; results of the study showed the connections validated what they were learning in class. Lord and Lomicka (2004) found that social reflection resulting from the interactions was beneficial in promoting deeper reflection for PSTs. In Australia, Le Cornu and Ewing (2008) used a Learning Communities model as a framework for building reflective practices in pre-service teachers (PSTs). To help their PSTs value their part in others' learning, they developed a community of practice of online discussions between PSTs and ISTs to guide PSTs to expand their worldviews on teaching practices and found this contributed to PSTs engaging in “…professional conversations for ongoing professional learning” (Le Cornu & Ewing, 2008, p. 1803). In his response to Schmoker,'s (2005) article in the Phi Delta Kappan about implementing PLCs, Joyce (2004) shares historical initiatives about collaboration and highlights the successes and the failures. Referring to practicing teachers, Joyce (2004) notes
that “Many teachers need to experience cooperative professional inquiry before they will commit to it” (p. 82). Following that logic, it seems that pre-service teachers could become collaborative in-service teachers if given the opportunity to participate in a collaborative environment early on.

**Motivation**

Self-determination theory (SDT) assumes that it is human nature to be curious and self-directed to learn and build knowledge (Niemiec & Ryan, 2009), which implies a sense of autonomy, intrinsic motivation, and self-guided control. Education is known for implementing initiatives and reforms on a regular basis, one being PLCs. Research has shown the PLCs positively affect job satisfaction among teachers, impact student learning, and help to reduce isolation among educators when implemented properly. Since PLCs are not federally mandated like other educational reforms, their implementation can vary greatly, which affects how teachers participate. Motivation, then, plays a large role in how in-service teachers will engage in a new initiative. Motivation is the internal condition that activates behavior and gives it direction (Deci & Ryan, 2000). Adult motivation is mediated by four factors: autonomy, competence, relatedness, and value, but motivation is not the same as the will to learn. Studies about the will to learn in teachers revealed three types of educators: those that felt they had nothing to learn, those that wondered if there was something to learn, and those who could not wait to learn something new (Van Eekelen, Vermunt, & Boshuizen, 2006). The will to learn comes before motivation and could be what drives in-service teachers to seek out their own professional network if their needs are not being met through school-based professional development. Virtual PLNs on Twitter, then, are a natural fit for
those teachers who wish to remain connected but are not in a physical environment conducive to doing so or are isolated by circumstance, grade-level, or distance.

Factors that Affect Motivation

**Autonomy.** Autonomy is not the same as control; teachers who feel autonomous will choose their own goals and behaviors about how to achieve those goals; whereas, control is someone (usually a principal or district) telling them what to do and how to do it (Deci & Ryan, 1987). In their study on autonomous versus controlled regulation, Deci and Ryan (1987) found that “...autonomous regulation is facilitated when events and contexts have an autonomy supportive functional significance” (p. 1035) compared to controlled environments with little autonomy or choice. Teachers participating in a Twitter-based PLN is a self-directed action; teachers can remain active or peripheral (called “lurkers”), but what they do with the knowledge they gain or the connections they make is up to them, not their school or district. They do not have to report back or create an agenda; they can simply participate in personal professional development on their own terms.

**Competence.** How does one define and assess professional competence? According to Epstein and Hundert (2002) it is “...more than factual knowledge and the ability to solve problems without clear cut solutions” (p. 227). Though this article is written for the medical profession, one could take the medical references, replace them with educational ones, and have a valid argument. Many teachers may have impressive knowledge of their subject but are unable to disseminate this information in a way that addresses student needs. Epstein and Hundert (2002) stress the importance of the reflective process for medical students as a way of examining “their own clinical reasoning strategies” (p. 228) which is also true for the
educational field. Pre-service teachers are encouraged to reflect on what they observe in classrooms or their teaching practices during student teaching. The article makes clear points on the role of assessment for medical students and the need to find alternative assessment practices to strengthen the experiences. In the example “Framework for Assessment,” the different levels include “Knows, Knows How, Shows How, Does.” Teacher preparation programs follow this same model as students begin their knowledge of pedagogy in their education classes, and through passive or active observations, they learn about teaching strategies and content area knowledge. They move on to more precise learning in their methods course and demonstrate how they can apply various teaching strategies, such as lesson planning, teaching, and assessment, in a classroom, and they demonstrate this through various tasks in a protected environment. Finally, students begin their student teaching with a mentor and real students who assess their ability to “do.”

**Relatedness.** When people feel connected to those who share similar interests, beliefs, or values, they are said to relate to others. When people feel a sense of belonging, people begin to internalize and accept others' viewpoints and values as their own. (Niemiec & Ryan, 2009). In a teaching context, this can be a positive characteristic when reflecting on teaching practices, as educators look to others for inspiration, confirmation, or affirmation. Niemiec and Ryan (2009) refer to student relatedness in a classroom when they feel that the teachers genuinely like and respect them; the same can be said for teachers who seek others in a network. If they join a network and feel connected, valued, and respected, they are more likely to continue. Virtual PLNs allow for relatedness because teachers can enter and exit at
their own will and have many to choose from. Finding the right connection can mean that the teacher stays in the network and becomes a contributing member.

**Value.** The Expectancy-Value theory of achievement motivation is based on how much an individual values a goal and what their expectation is for achieving it; tasks must be just challenging enough to maintain interest but not too difficult that teachers choose not to attempt them due to fear of failure (Schunk, 2000). Connecting PSTs to a community early on is valuable for their professional growth, but how can this personal value be assessed or measured? Misra, Mukherjee, and Peterson (2008) applied Cothrel’s framework for value creation that focuses on benefits and growth for members and converts visitors to members. In their study, the authors used discourse analysis to interpret the data for value gained by participating in an online community in the healthcare field. Their study looked at a consumer side of who participates; they profiled members or visitors to an online community and explored “…their value creation processes for healthcare services” (Misra, Mukherjee, & Peterson, 2008, p. 335). Since Wenger et al.’s (2011) Value-Creation Framework (VCF) was published in 2011, a few studies have used it in their research. Wenger et al. (2011) define value-creation as “…the value of the learning enabled by community involvement and networking (p. 7). One study by Cowan and Menchaca (2014) used the framework to address a gap in understanding about the success of a hybrid Master’s program. Cowan and Menchaca (2014) used VCF to assess value and social network analysis (SNA) to show how the findings indicated that value was created. They found that even when participation is required of students, CoP can “influence student success” (Cowan & Menchaca, 2014, p. 70).
Though they applied the framework to their study, they did not utilize the individual value-creation “stories” as narratives.

Booth and Kellogg (2014) used interviews that were adapted from Wenger et al.’s templates for value-creation stories to study online communities of educators. They found that these stories allow a greater understanding of the value participants place on these online communities. They also found that while time-consuming, the value-creation stories lent themselves well to explaining the value cycles that community members traverse, but noted that there were challenges in differentiating between cycles at times, and that the stories were not particularly helpful with the latter cycles.

**Summary**

Exposing PSTs to a wide range of pedagogical perspectives is a challenge for World Language teacher preparation programs where limited time, resources, or program structure hamper the implementation of additional field experiences. Russell explains the tension that may exist between what is learned through coursework and what is experienced with cooperating classrooms in (as cited in Sim, 2006). PSTs are getting ready to step into a professional role; therefore, self-efficacy plays a large part in their future success. Self-efficacy is influenced by mastery experiences (Bandura, 1994), yet for many pre-service teachers, their student teaching is the only opportunity to connect theory to practice. Programs must find ways to build PSTs’ confidence and self-efficacy prior to putting them in charge of a classroom. Communities of Practice are opportunities to address many of these challenges and introduce PSTs to the “professional culture” (Sim, 2006, p. 79).
In the educational setting, literature has shown that participation in communities leads to changes in teaching practices (Englert & Tarrant, 1995). Twitter has emerged as a valid and popular mode of communication among practicing educators and to form virtual Communities of Practice. Despite the popularity of Twitter with teachers, little is known about the value it holds for Pre-Service teachers. If the PLC/PLN model shows positive results for ISTs, then it stands to reason that PSTs should be introduced to the practice as early as their teacher preparation program. This study examines this through a virtual PLN chat on Twitter for World Language PSTs and ISTs. Chapter 3 outlines the methodology and research design that was used for this study.
CHAPTER 3: METHODOLOGY

Professional Learning Networks (PLNs) have emerged as a means of facilitating connections and collaborations among In-Service Teachers (ISTs) from all fields. World Language teachers who may be isolated or looking to connect with other language teachers have begun using Twitter chats to connect professionally. If current research shows that PLCs and PLNs are important to in-service teachers’ (IST) personal and professional growth, and empower teachers to initiate reforms in their schools, then pre-service teachers can and should engage in the same types of activities, not only to connect with other teachers, but to begin acquiring the knowledge of what it means to participate in a learning community (Le Cornu & Ewing, 2008; Sumson & Patterson, 2004).

Design of the Study

This study explores the perceived value of virtual connections between World Language Pre-Service Teachers and In-Service Teachers using Twitter for organized, online chats. The decision to focus on Twitter as a platform for bringing together pre-service teachers (PSTs) with in-service teachers (ISTs) to share and construct knowledge is based on an examination of various social media platforms and existing frameworks for synchronous chats. Specifically, this study looks at the following research question:

1. In what ways, and to what extent, do World Language Pre-Service Teacher candidates find value through participation in moderated online Twitter chats with other PSTs and In-Service Teachers?
**Appropriateness of the Approach**

This study utilizes a qualitative case study design. Qualitative research is a way to understand more deeply the experiences people have when they construct their world and how they place value on those experiences (Merriam, 2009) within a context and real world setting (Golafshani, 2003). This study examines the experiences of PSTs within a community of practice through participation, survey, and interviews. Therefore, a qualitative research design is an appropriate choice for understanding the context surrounding the research questions for this study.

**Case Study Design**

Qualitative Case Study design is defined by Merriam (2009) as “…an intensive, holistic description and analysis of a single, bounded unit” (p. 203). Well known in the fields of psychology, law, and medicine, case studies are used when investigators want to explore bounded systems of place or time with detailed data collection from multiple sources to report on a case description or theme. There are three variations of case studies: single, multiple, and intrinsic (Creswell, 2007). Using a case study is appropriate when trying to “…understand a real-life phenomenon in depth” (Yin, 2009, p. 18) that takes place within a system (Creswell, 2007). When designing a case study, several elements need to be considered, including research questions (in the form of how and why), units of analysis (what the case is), the theory itself, and credibility (Yin, 2009).

This study examines the value of participation in a virtual PLN via Twitter chats as perceived by World Language PSTs. While much quantitative research focuses on participation in social media and education, few qualitative studies try to understand the
value placed on a virtual PLN experience, and especially not with Pre-Service World Language Teacher candidates. With this study, I aim to develop a more nuanced understanding of the ways and extent to which a virtual Twitter network provides value for its members through the collection and analysis of personal narratives (“value creation stories”) and tweet content. Qualitative studies are appropriate when the researcher wishes to probe more deeply into a problem or environment to gain a greater understanding of it (Creswell, 2007). Miles, Huberman, and Saldaña (2014) note that a strength of qualitative research is the ability to collect and analyze data more organically as events of an activity or experience unfold. A case study is defined by Creswell (2007) as a study of “…bounded system with the focus being either the case or an issue that is illustrated by the case (or cases)” (p. 244). For this study, I created a Professional Learning Network (PLN) for pre-service and in-service teachers using a designate hashtag (#) on Twitter that met six times over the course of a three-month period. In cooperation with another methods instructor, PSTs from the second university served as the moderators for the chats. They began the chats each session and asked structured questions based on a topic of their choice, guiding the conversations as they unfolded. The chat sessions lasted 30 minutes. These chats served as the boundary for the case study. Studies show that In-Service Teachers use educational Twitter Chats to connect with others in the field or as a form of professional learning and development or resource sharing (Carpenter & Kruka, 2015; Tour, 2016). Case studies are often “…anchored in real-life situations” (Merriam, 2009, p. 51); therefore, this bounded case study reflects current professional activities of practicing teachers.
Theoretical Framework

This study is guided by the Value Creation Framework developed by Wenger, Trayner, and de Laat (2011) to assist in determining value created in online communities of practice. This framework operates as a tool to assess the value that is created by participation in a virtual PLN for Pre-Service Teacher candidates on Twitter (through a designated hashtag) through data collection of value creation narratives, which are derived from stories created by participants about their experiences as told through the survey responses and interviews. Studies have shown the positive benefits for In-Service Teachers who are members of some sort of community of practice, be it formalized or self-initiated; however, there is limited research on how, and to what extent, members value these activities, especially PSTs. To study the value of this exercise for PSTs, a framework such as this should be utilized. This framework is a good fit for this study because it specifically examines the value created by members of a community of practice through Value-Creation Story templates for teachers. The conceptual framework is comprised of five cycles, which serve to focus attention on the value created, indicators to drive data collection on what is creating the value, and participant stories to tell how the activity makes a difference (Wenger & Trayner, 2015). The five cycles are targeted in the survey and interview questions:

1. **Immediate value**: Activities and Interactions - understanding what happened and the participants’ experiences of it.

2. **Potential value**: Knowledge Capital– understanding what the participation or activity has produced for participants, including human, social, tangible, reputational, and learning capital.
3. **Applied value**: Changes in Practice – understanding what difference the activity or network has made to participants’ practice or context as professionals.

4. **Realized value**: Performance Improvement – understanding what difference the activity or network has made on the participants’ abilities to achieve what matters to them.

5. **Reframing value**: Redefining Success – understanding if participants’ understanding and definition of success have changed in some way.

For this study, value creation is viewed from the perspective of a PST. To situate the value-creation framework within the Pre-Service Teacher environment, some definitions of cycles have been adjusted and survey/interview question prompts have been modified to meet the context of Twitter Chats and PSTs. In this framework, a series of questions are used to prompt and guide participants with their value-creation stories, which provide ways to show how interactions and experiences cross through various cycles (see Appendices B and C for survey and semi-structured interview questions). For example, one question might ask about the quality of collaboration, and another one prompts for specific examples of how collaboration has impacted the participant. As participants tell their stories, they are woven into the cycles. Wenger et al. (2011) note that while value must be examined across all cycles, stories or participant experiences may not actually cover all cycles or even reach all cycles. The goal is to uncover to what extent the participants value the experience and to place their value into cycles. The authors also stress that the cycles are not ordinal; success of a community or network is not dependent on meeting indicators at every cycle. Additionally, different cycles could have different levels of importance to various stakeholders. See Figure...
2 for the reframed PST cycles and their connections. The framework cycles drive the data collection and analysis of this study.

![Figure 2: The Five Cycles of the Value-Creation Framework for PSTs.](image)

**Case Selection and Participants**

**Process of the Selection**

Due to the nature of this study, I solicited World Language and English as a Second or Foreign Language (ESL/TEFL) Pre-Service teacher candidates who participated in scheduled Twitter Chats over a three-month period. To examine the most information-rich cases possible, a set of criteria was developed:

1. Participants must be World Language or ESL/TEFL Pre-Service Teachers enrolled in an initial-licensure program
2. Participants must be enrolled in a WL Methods course during the fall semester
3. Participants must be planning to student teach as part of their program

4. Participation in the chats may be required or voluntary by the individual methods instructor

Purposeful sampling was utilized for this study. Purposeful sampling is often found in qualitative research because the focus is on depth over breadth (Patton, 2002), and for this study, convenience sampling was employed. This study was situated within a narrow parameter of Pre-Service World Language or English as a Second Language teacher candidates in their professional year who were enrolled in an undergraduate Methods course to prepare for subsequent student teaching. Therefore, a net was cast within this community of learners.

Two types of purposeful sampling were employed; the first was a convenience sample of my own undergraduate methods students, as the chats are part of a course component. Participation in my study, however, was voluntary, and interviews were conducted after final grades were posted. In addition to my own students, I sought PSTs from other institutions through direct contact with those who are involved in the teacher preparation field. An initial request for participants was distributed online via a Special Interest Group (SIG) for World Language teacher educators. Anyone who voluntarily subscribes to this SIG could receive the email and fill out a Google Form for more information. This provided me with an initial list of 20 potential universities where I could possibly draw participants. I sent out a detailed explanation of the chats and the study itself to the Methods Instructors and asked them to forward an interest form to be completed online by their students. Though all pre-service teachers were invited to participate in the Twitter
Chats during the fall semester, I solicited volunteers to participate in the study itself from those who would become members of the Twitter Chat sessions. This generated ten participants early on; however, none of those initial subjects joined in the chats, which eliminated them from the pool. I was hoping to have a sample size of at least 10 to 20 participants from whom I could elicit value-creation stories, but in the end, I had two universities from which to draw a sample: my own and another in the same state, plus one participant from a private university.

I recruited in-service teacher participation in the chats through various avenues. I reached out directly to World Language educators I knew from other Twitter Chats which resulted in four ISTs who committed to regular attendance. I also announced the chats via Twitter before each one and used a popular World Language Twitter Chat hashtag. From there, several ISTs from around the country joined the chats regularly. Table 1 shows the IST attendance over the three-month chat period:

Table 1:

<table>
<thead>
<tr>
<th>ISTs who participated</th>
<th>Chat #1</th>
<th>Chat #2</th>
<th>Chat #3</th>
<th>Chat #4</th>
<th>Chat #5</th>
<th>Chat #6</th>
</tr>
</thead>
</table>

In-Service Teacher (IST) Participation in Twitter Chats

Table 3.1:

<table>
<thead>
<tr>
<th>ISTs who participated</th>
<th>Chat #1</th>
<th>Chat #2</th>
<th>Chat #3</th>
<th>Chat #4</th>
<th>Chat #5</th>
<th>Chat #6</th>
</tr>
</thead>
</table>

Participants

The participants in the study were those PSTs who participated in twice-monthly Twitter Chats from September to November during the Fall 2016 Semester. Of the 15 regular
Twitter Chat participants, 11 submitted a finished survey online. Eight of the survey completers were undergraduate students enrolled in a four-year Bachelor of Arts World Language or ESL/TEFL degree program with an initial K-12 licensure add-on at two different public universities in the southeastern part of the United States, one was a Master’s student in an initial licensure program at a private university, and two were exchange students from Spain. From the survey participants, six volunteered for the personal interviews; however, because the latter information was not revealed until the interviews, those two samples were removed from analysis because they did not fit the initial criteria set for participant demographics (except for being in a methods course, they were business majors from Spain with no plans to pursue teaching as a career). This left a final survey sample size of nine, and an interview sample size of four. Three of the interview participants were on track to student teach in the spring of 2017; one was on track to student teach in a year. All participants provided their written consent to participate in the study using a NCSU-IRB approved consent form.

**Chat Procedure**

PSTs from one participating university moderated the chats by developing four questions based on topics of interest to World Language or English as a Second Language Pre-Service Teacher candidates. The chats took place on the first and third Tuesday of the month from September – November. They began at 7:00 pm E.S.T. with a greeting from the moderator, and members were invited to tweet at any point throughout the 30-minute chat sessions. Members were reminded by the moderators to include the designated hashtag (#) in their responses. The chat sessions were made up of invited World Language and ESL/TEFL
PSTs, invited World Language ISTs, and others who joined the chat at random intervals, as it is listed on the national educational chat calendar and made public on Twitter.

**Data Sources**

When embarking on qualitative research, it is important to include various data sources. The Value-Creation Framework (Wenger et al., 2011) includes five distinct cycles that “…produce a data stream with specific indicators that can be monitored” (p. 8). To create a personal value narrative about their experiences with the Twitter Chats, three sources of data streams were collected: 1) Twitter chat data, 2) survey responses, and 3) semi-structured interviews. Findings from the second part of the interviews for four participants were then “re-storied” (combined) to form Value Creation Stories, which were used to analyze the data across cycles.

**Twitter Data**

For this study, Twitter data were in the form of messages (called “tweets”) collected from a public platform (Twitter) that contained a designated hashtag (#), including a short reflection or “takeaway” that was self-reported by participants after each chat. The purpose of the reflection was to capture immediate experience and value placed on participation in the chats. Three questions were posed at the end of each Twitter Chat:

- I realized…
- I learned…
- I’m going to…
Survey

To determine the overall value of participation after the chats came to an end, a survey was sent out to 14 study participants electronically using a university-supported, online survey system. The survey had 26 questions with question stems that reflected each of the five cycles and incidents from the Value-creation framework of Wenger et al. (2011) to elicit overall experiences with participation in the Twitter Chats and the PLN (See Appendix A for the complete survey). Two were not completed, and one was discarded for not submitting a completed survey, leaving 11 survey responses. Two were discarded when it was learned that they did not meet the initial criteria for participation. Therefore, nine survey responses were used for data analysis.

Interviews

After the survey responses were completed and analyzed, semi-structured interviews were given to six participants who volunteered to provide more information about their experience. These were conducted in person to build on their survey responses (see Appendix B for interview protocol). The interview protocol was modeled after the Personal Value Narrative template developed and used by Wenger et al. (2011) to encourage expansion upon the reflections and survey responses to provide more detailed and concrete examples gleaned from the experience. Modifications to the template questions were made to situate them within the context of Pre-Service Teachers who are not in a classroom full time yet. There were two parts to the interview: overall experience and value-creation stories. Survey responses were used to guide the interview, and participants were given a copy of their survey responses as a reference. Two interviews were discarded when it was revealed that
they did not meet the initial criteria for participation, therefore four interviews were used for data analysis.

**Value-Creation Stories**

After findings were analyzed for value created in each cycle, data from four interviews were re-storied. That is, the information from their responses was combined to construct a representation of value creation *across* the cycles. The purpose was to capture specific examples of how participation created value. Per Wenger et al. (2011), these stories are genres that follow a prescribed format. Responses from the second part of the interview were used for the value-creation stories. A typical value-creation story has a sequence of four main steps, and sometimes a fifth one. Step Five is when an event or innovation changes the way participants define what matters, what constitutes success, and therefore what “value creation” is. Participants were asked to share detailed experiences or events surrounding the following prompts during the second part of the interviews:

- **Activity**: Describe a meaningful chat or topic and your experience of it.
- **Output**: Describe a specific resource that these chats produced for you (ex: an idea, a tool, a document, etc.) and why you thought it might be useful.
- **Application**: Tell me how you used this resource in your practice and what it enabled for you that would not have happened otherwise.
- **Outcome**:
  - Personal: Explain how the chats affected your success (ex: being a better methods student, PST, job satisfaction, understanding pedagogy, etc.)
Organizational:
- How has your participation contributed to the success of your future students?
- How has participation helped you impact student learning?

Significance: Sometimes, such a story changes your understanding of what success is. If it happened this time, please tell me more about it. For example, do you have a new set of expectations for yourself or your future students when you begin your student teaching practicum? How will you approach participation in your school’s PLT?

A matrix is often used to demonstrate how the story weaves through each cycle. Because a value-creation story may not cover all cycles, proxies are often used when the whole story is either not available or has not been realized yet.

Data Collection

After setting up a Professional Learning Network (PLN) Twitter Chat for pre-service and in-service teachers that met online six times over the course of a three-month period, data were collected during and after these chats. Data collection occurred at three intervals: tweet data and reflective takeaway after each chat session, a survey on the overall experience at the culmination of the six chats, and a semi-structured interview upon completion of the surveys.

Collection began with each Twitter Chat archived with a Google Sheet template called TAGS, which captures Tweet data within a designated time frame. As Twitter is an open forum online, anybody can join the Twitter Chats, and did; however, data were only
analyzed from this study’s consented participants. The take-away tweets were copied into a single spreadsheet for analysis. See Table 3.2 for the timeline of data collection.

After the fifth and sixth chats, an online survey was sent to 14 participants who had signed a consent form to participate in the study. The survey protocol was a modified version of a template designed by Wenger et al. (2011). The survey was distributed via email addresses provided by participants in their consent forms; each received a unique link to a survey that, although could only be used once, could be completed over a period of two weeks by the participant. Though eleven participants submitted completed surveys, nine were ultimately used for data analysis.

The final piece of data came from a semi-structured interview conducted in person after the survey responses had been collected and coded. The protocol for the interview was a modified version of the story creation template for educators by Wenger et al. (2011) to expand on survey responses and to share specific examples in the form of narratives. Using prior instrumentation is helpful to keep an interview focused and avoid details that may not be pertinent to the context, or to help build theory because it provides analysis across various studies (Miles, et al., 2014). For case study design, this helps to build confidence and delve more deeply into each case to see how they are similar and different from each other. Though the interview was semi-structured to allow for narrative responses, the questions and format were consistent. The final part of the interview was the basis for the value-creation stories (See Appendix B for the interview protocol).
Table 3.2:

*Timeline for Data Collection and Analysis*

<table>
<thead>
<tr>
<th>SEPTEMBER 2016</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Week 1</strong></td>
<td><strong>Week 2</strong></td>
<td><strong>Week 3</strong></td>
<td><strong>Week 4</strong></td>
</tr>
<tr>
<td>September 7 @ 7:00 PM E.D.T.</td>
<td></td>
<td>September 21 @ 7:00 PM E.D.T.</td>
<td></td>
</tr>
<tr>
<td>Twitter Chat #1</td>
<td></td>
<td>Twitter Chat #2</td>
<td></td>
</tr>
</tbody>
</table>

- Confirm participants and send out Twitter privacy statement, consent form, and study explanation.
- Collect tweets, reposts, reply, and like data for hashtag; Takeaway reflection from first two chats using TAGS.

<table>
<thead>
<tr>
<th>OCTOBER 2016</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Week 1</strong></td>
<td><strong>Week 2</strong></td>
<td><strong>Week 3</strong></td>
<td><strong>Week 4</strong></td>
</tr>
<tr>
<td>October 5 @ 7:00 PM E.D.T.</td>
<td></td>
<td>October 19 @ 7:00 PM E.D.T.</td>
<td></td>
</tr>
<tr>
<td>Twitter Chat #3</td>
<td></td>
<td>Twitter Chat #5</td>
<td></td>
</tr>
</tbody>
</table>

1. Collect tweets, reposts, reply, and like data for hashtag; Takeaway reflection from first two chats using TAGS.

<table>
<thead>
<tr>
<th>NOVEMBER 2016</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Week 1</strong></td>
<td><strong>Week 2</strong></td>
<td><strong>Week 3</strong></td>
<td><strong>Week 4</strong></td>
</tr>
<tr>
<td>November 2 @ 7:00 PM E.S.T.</td>
<td></td>
<td>November 16 @ 7:00 PM E.S.T.</td>
<td></td>
</tr>
<tr>
<td>Twitter Chat #5</td>
<td></td>
<td>Twitter Chat #6</td>
<td></td>
</tr>
</tbody>
</table>

- Collect final Takeaway reflection data; code and analyze data
- Send out Survey to volunteer participants
- Collect survey data; upload and code in ATLAS.ti

<table>
<thead>
<tr>
<th>DECEMBER 2016</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Week 1</strong></td>
<td><strong>Week 2</strong></td>
<td><strong>Week 3</strong></td>
<td><strong>Week 4</strong></td>
</tr>
<tr>
<td>Interview 5 participants.</td>
<td>Interview 1 participant.</td>
<td>Transcribe interviews</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>January 2017</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
</table>

Data analysis in ATLAS.ti; second coding and categorization
Re-story interview data for four participants; upload and analyze in ATLAS.ti
Data Analysis

As noted above, the data were in the form of tweets, survey responses, and a semi-structured interview. Yin (2009) proposes creating a “case study database” (p. 118) as a means of organizing the data for easy retrieval later. Therefore, the three sources of data were all saved as PDFs and uploaded to ATLAS.ti, a qualitative data analysis program. The tweets of the take-away responses at the end of each chat were separated out individually and copied into a single spreadsheet; the survey responses were downloaded from the university Qualtrics account; the interviews, which lasted between 24 and 48 minutes, were recorded with the participants’ permission and were transcribed verbatim afterward. Because the Value-Creation Framework specifically looks at value gained from a community of practice, coding began with established schemes. Wenger et al. (2011) suggest ways in which data can be collected to “define and monitor indicators of value creation” (p. 23). These indicators were integrated as a priori sub-codes to further categorize the data within the five value cycles. Not all indicators were used for this study. Thirty-two a priori sub-codes were initially entered into a coding manager system (ATLAS.ti) and grouped by the categories of the five value cycles they represented: Immediate Value (IV), Potential Value (PV), Applied Value (AV), Realized Value (REAL-V) and Reframed Value (REFRAME-V). Additional codes were added and categorized as the data were reviewed, and the data were recoded with the new scheme. See Appendix C for a full list of the codes. Tweet Takeaways, survey, and interview responses were read through holistically; sentences or fragments that indicated value being created were coded with the a priori codes. To narrow down the data analysis, a review took place after the initial coding to update or adjust the sub-codes, especially when
more than one code had been applied during the initial analysis. A few codes were deleted due to low instances, and those quotations were updated to reflect a more relevant code. The coded quotations were used to identify value within each cycle. For analysis across Value Cycles, responses from the latter portion of the semi-structured interview were used. This section followed Wenger et al.’s (2011) sequence of five steps of the Value Creation Story template, which consisted of five guided prompts to elicit specific stories about how participation in the chats created value across cycles. For data analysis of the Value Creation Stories, those interview responses were separated out into each of the five steps and were coded \textit{in vivo}, that is, a label was assigned to significant words or phrases to find common themes. These themes, along with the original data sources, were “re-storied” for complementary analysis. The stories were uploaded to ATLAS.ti and coded using the same \textit{a priori} codes. A Value-Creation matrix was then created to show cross-cycle value.

\textbf{Validity}

Patton (2002) asserts that measuring the instrument is the focus of validity for quantitative research; whereas, in qualitative research, the focus becomes “...the researcher as the instrument” (p. 14). In contrast with quantitative data collection, Guba and Lincoln (1982) note that naturalistic inquiry instead focuses on whether the data sources (usually people) find the researcher's findings to be credible (p. 246). Yin (2009) notes four tests that are common to social science methods: construct validity, internal validity, external validity, and reliability (p. 40). Though these elements are commonly connected to quantitative research, they can be addressed in qualitative studies, as well. In addition, reflexivity and bias are areas that can manifest themselves through qualitative research. Reflexivity of the author
is defined by Creswell (2007) as being “...conscious of the biases, values, and experiences that he or she brings to a qualitative research study” (p. 243). Each of these areas will be discussed in relation to this study.

**Construct Validity**

This element is challenging in case studies, according to Yin (2009), due to a lack of specific “operational set of measures” (p. 41) or how the data are collected. To avoid bias or “subjectivity” in the data collection, Yin (2009) suggests various tactics for each of the elements during various phases of a study. Collecting data from a variety of sources, performing member checks (Yin, 2009), and using a framework specifically for value creation are steps taken to increase validity in this study.

**Triangulation.** It is common in quantitative studies to triangulate data to confirm results and generalizability, which support the reliability and validity of the results. Triangulation is defined as a “...validity procedure where researchers search for convergence among multiple and different sources of information to form themes or categories in a study” (Creswell & Miller, 2000, p. 126). Qualitative researchers agree that triangulation can also be used to strengthen findings in qualitative studies, but there is a difference of opinion as to what that looks like (Golafshani, 2003; Patton, 2002). For a qualitative study, triangulation can be data, investigator, theory, or methodological (Creswell & Miller, 2000; Patton, 2002). For qualitative findings, triangulation of data can help control bias or see exceptions as opportunities to modify theories; some researchers propose triangulating methods; whereas, others find that idea goes against the basis for qualitative research in the first place where frameworks inform the study. Triangulation can also include bringing in other perspectives or
member-checking (Golafshani, 2003). In addition to triangulating data, practicing reflexivity in qualitative research is a way to address bias or underlying pre-dispositional ideas about participants, methods, or results (Guba & Lincoln, 1982). For this study, data were triangulated from three sources: tweets, survey responses, and interviews.

**Member-checks.** Though the lens of the researcher plays a large role in constructivist paradigms and qualitative studies, incorporating member-checks is another way to establish credibility and validity in a study. This shifts the perspective about the results from the researcher to the participants and allows for participants to verify the researchers' interpretation of the data (Creswell & Miller, 2000; Miles, et al. 2014). One way to accomplish this is to send the data and the findings to the participants and ask them to complete a survey or questionnaire about the interpretations. This is the most logical if the participants are located in different physical places. Creswell and Miller (2000) note that member-checking is also a way to include participants' comments as part of the conclusion, thus strengthening the validity because the participants have a say in both analysis and conclusion. Member checks were employed in two ways: first, survey responses were provided during the interview for reference, and second, after participants shared their experiences, they were “re-storied” and sent back for review to ensure that my analysis accurately reflected their responses and experiences with the chats and the PLN.

**Internal Validity**

Researchers continually address the concept of validity in qualitative research, which is generally known as “the trustworthiness of inferences drawn from data” (Freeman, de Marrais, Preissle, Roulston, & St. Pierre, 2007, p. 27). Golafshani (2003) indicates that
validity as a concept in qualitative studies is described by a “wide range of terms” (p. 602).
With qualitative research, credibility functions as the internal validity of quantitative studies. Though some researchers may believe that validity does not play a large role in qualitative research, there is a mutual consensus that all studies need some form of checks and balances to ensure that the research process, analysis, and results are acceptable (Freeman, et al., 2007; Golafshani, 2003). Validity, therefore, gets called by many names in the qualitative field – Guba and Lincoln (1982) call it credibility, Patton (2002) refers to the credibility of the researcher as an instrument, and Creswell (2007) notes that it comes from the researchers' perspective. Since qualitative research is “positioned culturally, historically and theoretically” (p. 27) and involves collecting data from the natural setting, it is inherently perceptive; the analysis is a reconstruction from a construction and therefore cannot be completely neutral (Freeman, et al., 2007). Guba and Lincoln (1982) provide information on the following list, as ways to incorporate credibility when working with qualitative analysis: prolonged engagement, persistent observation, peer debriefing, triangulation, referential adequacy materials, and member checks. Other ways to strengthen the validity of the research include analytical perspectives, extensive description, and external audits (Creswell & Miller, 2000; Patton, 2002, p. 93). For this study, three strategies in qualitative research were used to increase internal validity: 1) triangulation, 2) member checks, and 3) reflexivity.

External Validity

Generalizing results beyond a study is commonly a goal for quantitative studies, but with smaller samples often found in qualitative studies, this becomes challenging to do. Yin (2009) notes how this barrier is proliferate with case studies. When designing a study, Yin
(2009) suggests using theory in single-case studies as the purpose is to analyze data and situate it within a theory. For this study, using the Value-Creation Framework by Wenger et al. (2011) helps to establish external validity because the focus is not if the Twitter chats are valuable, but instead, how they are valuable to a specific sample (in this case, WL PSTs).

Reliability

When discussed within the context of quantitative research, reliability means that something tested and evaluated can be explained and replicated; any differences in results in quantitative study is deemed an error of reliability (Guba & Lincoln, 1982). Within the purview of qualitative research, reliability is used more in terms of the quality of the research and its ability to generate understanding. Guba and Lincoln (1982) offer the terms “credibility, transferability, dependability and conformability” (p. 246) as naturalistic paradigm synonyms as criteria for qualitative studies, with dependability being what most closely conforms to quantitative reliability (Golafshani, 2003). Recognizing that no research is entirely “value-free” (Patton, 2002, p. 93), there are ways to enhance the dependability of a study. Conducting an “audit trail” (Patton, 2002, p. 93) is one way to help confirm the data collected for more reliable findings. For this study, the Value-Creation Framework (Wenger et al., 2011) has defined the value cycles with events and templates for data collection.

Reflexivity. Addressing bias outright is one way to approach the issue; establishing credibility is another (Patton, 2002). Remaining objective, also known as confirmability by Guba and Lincoln (1982), is an important part of qualitative analysis. Though a wide net for participants was initially cast to avoid asking for study volunteers from my own students, four ended up participating in my study. In addition, as a methods instructor, I believe very
strongly in professional growth and development; it is from my own professional experience that this study was drawn. The ethical aspect of my relationship to my students as their instructor is an area that must be addressed in my study. Agee (2009) notes that researchers need to carefully plan and anticipate how the direction of the research questions “...position the researcher in relation to participants and what the implications are for the participants' lives” (p. 441). In the pilot study, I participated alongside my students in the bi-monthly Twitter Chats, which put me in a more ethnographic position. Participation in the Twitter chats themselves is part of a course requirement, and as their instructor, there is a level of concern regarding my position of authority and their ability to be free in their responses; therefore, I did not actively participate in the chats this time. While I do not think that any questions asked of the participants would be offensive, it is possible that they may not feel comfortable sharing their thoughts knowing that I am ultimately responsible for giving them a grade at the end of the semester. Participation in the Twitter-Chats is a required course task that is graded as completion only; however, students generally want to show their best side to their instructors, especially when self-confidence and self-efficacy issues emerge. Creswell and Miller (2000) note that disclosing views, values, and beliefs outright is one way to address the issue and validate a study. By reflecting early on as to the role the researcher’s reflexivity takes in the research and then bracketing it, the focus can move to “...social, cultural, and historical forces that shape their interpretation” (Creswell & Miller, 2000, p. 127). To reduce bias for this study, I used the Value Creation Framework and protocols from Wenger et al. (2011) and cycle descriptions and value indicators as a priori coding schemes.
Ethical issues

Before embarking on this study, all requirements for the protection of human subjects were met. An application for this study was made online with the North Carolina State University Internal Review Board, which was approved in August of 2016. A letter of informed consent was provided to all potential participants, outlining the study and their right to withdraw at any time, and a letter detailing the study with a consent form was provided directly to study volunteers. Researching online and public platforms such as Twitter present a unique set of ethical issues. Given that the chats took place in a public arena, complete anonymity was challenging; therefore, participants were informed of this and encouraged to use a pseudonym for their Twitter accounts. All participants were given a link to Twitter’s privacy statement. For the purposes of this study, only tweets from participants were used, but due to the nature of Twitter, interactions with other people not a part of the study was inevitable. Any direct quote could be entered into a public search engine and connected with the post, thus exposing study participants and anyone involved with the chat. Names and any identifying information collected during the survey and interview were changed to a pseudonym to protect their identity for the case studies. Participants were given an incentive of an electronic $25 Amazon Gift Card delivered to their email as recognition of their time.

Limitations of the Study

As with any study, there were limitations to this one. The first is the limited number of participants. Though I began soliciting participants early and received volunteers from a diverse group of PSTs from around the country, their failure to participate in the chats themselves excluded them immediately from the study. I am not sure what the reasons were,
as emails were sent out with reminders and updates regularly. Contact with their methods instructors did not help motivate participation. Therefore, I was limited to the two original partnership universities, one of which was my own.

An additional limitation is that the chats were a required course component for both universities, thus obliging participation in them and creating potential bias (positive or negative) toward the experience. It is generally preferable to examine value created from voluntary participation in a community so as not to “deflate the very social energy” that makes these communities meaningful (Wenger & Trayner, 2015). Participating in the study was voluntary, however, and the relatively small sample is made up of diverse individuals. Required participation does not necessarily discount any value generated by the activity; when Cowan and Menchaca (2014) used the Value Creation Framework to assess value and social network analysis, they found that even when participation is required of students, communities of practice can “influence student success” (p. 70). Another limitation is the inherent weakness of using interviews as data sources. Bias due to respondents giving what they think the researcher wants to hear are two areas of weakness when conducting interviews; difficulty recalling events is another (Yin, 2009). Finally, the structure of the survey and interview questions as provided by Wenger et al. (2011) could be perceived as leading because the questions themselves are grouped by the cycle. However, the research question being posed is not if the chats are valuable to PSTs, but how, with an underlying assumption that participation is valuable to some extent. For those desiring to understand if participation merits worth, a different framework might be considered.
CHAPTER 4: FINDINGS

This qualitative case study examined the value created for PSTs who participated in moderated Twitter chats with other PSTs and ISTs over a three-month period. Three data sources (‘takeaway’ tweets, survey responses, and interviews) were used to develop personal value narratives from which these findings overlap. Taken together, they form a narrative about how value is created within each of the five cycles and across cycles. To answer the research question, value is examined within each cycle for nine participants through tweets and survey responses, and interview responses from four of the nine participants. In addition, value is examined across value cycles as a holistic analysis of four participant narratives that were ‘re-storied.’ Findings for the nine participants are displayed comprehensively by each of the value cycles from the Value Creation Framework (Immediate Value, Potential Value, Applied Value, Realized Value, and Reframed Value) with examples of indicators that emerged for each cycle; findings for the four participants are shown with figures and narratives about how value crossed cycles.

Value Within Cycles

Wenger et al. (2011) suggest ways in which data can be collected to “define and monitor indicators of value creation” (p. 23). These indicators were used as a priori sub-codes to further categorize the data for the five value cycles. Not all indicators were used for this study. Although the findings show that many indicators were met for individual participants, only the ones that traverse participants and data sources are presented here. See Table 4.1 for an overview of the findings of value within each cycle.
### Table 4.1:

**Overview of Findings: Value Cycles and Indicators**

<table>
<thead>
<tr>
<th>Cycles</th>
<th>Immediate Value</th>
<th>Potential Value</th>
<th>Applied Value</th>
<th>Realized Value</th>
<th>Reframed Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Networking</td>
<td><strong>Human Capital</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quality of interactions</td>
<td>Change in perspective</td>
<td>Implementation</td>
<td>Personal performance</td>
<td>New frameworks</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Increased confidence</td>
<td>Social connections</td>
<td>Organizational outcomes</td>
<td></td>
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<tr>
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<td>Information</td>
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<tr>
<td></td>
<td>Inspiration</td>
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<td>Social Capital</td>
<td>Relationship and connections</td>
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<td>Trust Level</td>
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<td>Tangible Capital</td>
<td>Resources</td>
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<td>Reputational Capital</td>
<td>Reputation</td>
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<td>Learning Capital</td>
<td>Transformed views</td>
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*Note:* N = 9. Adapted from Wenger et al. (2011).
Cycle One – Immediate Value (IV)

This initial cycle in the Value-Creation Framework reflects the notion that participation and interaction in a network or community hold a value and that there are activities or interactions that can be used as indicators for measuring this cycle. It addresses the activity in terms of what happened and what the participants experienced (Wenger et al., 2011). Of the nine suggested indicators from Wenger et al. (2011), two of the a priori indicators emerged comprehensively from the data: networking and quality of interactions.

Networking. The number of new connections made by participants is an indicator of the activity of networking. The value of connecting with new people was supported by responses in both the survey and the interview. Out of the nine survey respondents, one acknowledged following more than 20 new people based on participation in the Twitter Chats; one indicated following 11-20 new people, and the remaining seven answered that they had followed one to ten new people. Every participant story, as told through their survey responses, revealed a common thread of being able to reach out beyond their immediate community to connect with others, not only across the state, but globally. One participant noted the exponential element of being able to find followers through the people their connections followed.

Communicating with other pre-service teachers online, it has been possible to make connections with people from across the state and outside the borders! (survey)

I have found mutual interests with complete strangers and had conversations with them (survey).

I think this network helps people connect and not feel alone, and also spread ideas (survey).
Several participants mentioned how the platform of Twitter itself served as a conduit for connections, increasing the quantity of people to which the PSTs had access. Some noted that they were new to Twitter and appreciated being able to find others to follow through this one community. Participants also reported being able to build their professional identity around these connections. Interview responses for all four participants showed how networking with others reduced isolation.

*I created a professional twitter which I didn't have in the first place. I also made connections with people that I probably wouldn't have otherwise* (survey).

*I realized there's a gr8 community of #langteachers here* (Takeaway Tweet)

*This profession can get lonely if we don't reach out to others; thus, from these chats, I have found a new, fun way to advance and grow my professional connection network, near and far* (survey).

*I now follow several of the other participants on Twitter and met one at [Foreign Language conference]* (survey).

**Quality of interactions.** Wenger et al. (2011) note that another indicator of Immediate Value is the quality of the interactions, that is, bringing experience of practice into the learning space. This was accomplished in the chats by bringing in the ISTs as PLN members. Participants frequently indicated that they enjoyed interacting with and hearing from ISTs – actual teachers who have experience and provided feedback, examples, affirmations or suggestions. Responses also showed that the participants liked the topics that were discussed because they helped the participants reflect on their own understanding.

*I think it is really interesting to see what teachers choose to actually implement in their classroom, especially those who are experienced* (interview).

*It has been interesting to get the perspective of future foreign language teachers* (survey).
For example, seeing a pre-service teacher make a comment about something with an assessment or an idea that might be off-the-wall or might be something that's very, very general or not thinking in the practicality of what we're seeing and then seeing a practicing teacher comment back to that and be like, "Actually, have you thought about if a child can afford this?" or "If a principal doesn't support this" (interview).

**Cycle Two – Potential Value (PV)**

Participation in a PLN may involve activities or interactions that build a knowledge base that could be valuable in the future, that is, value is not known or used immediately. Potential value encompasses layers of “knowledge capital” (Wenger et al., 2011, p. 20). This cycle centers on value that is not immediately created; that is, the potential for knowledge capital is the value (Wenger et al., 2011). For example, an IST may tweet about an experience with a technology tool and the lessons learned. Having that knowledge can be reassuring for a PST. The second cycle of the Value-Creation Framework identifies five forms of knowledge capital that develop this potential value: Human, Social, Tangible, Reputational, and Learning Capital. For each form, there are additional knowledge capital indicators of how value is created (Wenger et al., 2011). See Table 4.2 for a definition of each Potential Value form and the strongest indicators (from the a priori codes from the Value Framework) found within this cycle.

**Human capital.** Personal assets, such as new skills, information received, or perspectives, contribute to this knowledge capital. Comprehensive responses showed four strong indicators in which potential value within human capital was reached: perspective, confidence, information received, and inspiration.
*Change in perspective.* This indicator is revealed when a participant expresses new viewpoints about something, that is, when an understanding about a topic, a method, or belief has changed. Findings across the data indicate participants’ new desires to learn more about, and participate in, professional development opportunities (such as conferences). For PSTs, Table 4.2:

*Definition of Potential Value Forms for Cycle 2 with Indicators*

<table>
<thead>
<tr>
<th>Cycle 2: Potential Value</th>
<th>Definition of Knowledge Capital</th>
<th>Indicators of Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Human Capital</strong></td>
<td>Personal assets that increase knowledge for participants and look at how participation changes. Can take the form of skills, information, ideas, or new perspectives. It can also refer to a new sense of identity.</td>
<td>Change in perspective Increased confidence Information Inspiration Professional identity</td>
</tr>
<tr>
<td><strong>Social Capital</strong></td>
<td>Relationships and connections; distributed knowledge. Can also include a level of trust among participants.</td>
<td>Relationships &amp; connections Trust level</td>
</tr>
<tr>
<td><strong>Tangible Capital</strong></td>
<td>Participation creates an access to resources, such as information, documents, or tools.</td>
<td>Resources</td>
</tr>
<tr>
<td><strong>Reputational Capital</strong></td>
<td>Connections that build participants’ reputations within a profession or community. This includes a feeling of belonging.</td>
<td>Reputation</td>
</tr>
<tr>
<td><strong>Learning Capital</strong></td>
<td>Realizing that learning can occur in a network/community. Transforming the ability to learn to other contexts, including taking an interest in learning and leadership activities.</td>
<td>Transformed views</td>
</tr>
</tbody>
</table>

who are in the theory-to-practice stage, respondents reported a shift in understanding about certain topics or views about teaching that carried over from the classroom. Several reported going through a reflective process as they formed a new outlook on various teaching strategies, pedagogical viewpoints, or Methods Class topics that suddenly became relevant. Participants also appreciated receiving practical advice from ISTs that either affirmed or
challenged their previously-held concepts. This was evident from responses based on controversial chat topics about the amount of textbook use, which was the topic most frequently referenced as having a major impact on PSTs’ perceptions.

_Tonight I take away that the text still has it's [sic]place, but supplements are also needed (Takeaway tweet)_

_All these acronyms that we're learning and concepts, it's like "oh they're actually real. People really use these words outside college." (interview)_

**Increased confidence.** Increased confidence in the ability to engage in practice as a result of interactions with other professionals was another potential value construct that was evident in the data. PSTs reported that they felt more like colleagues than students, especially because they were participating in a ‘professional’ activity. The word ‘comfortable’ was used many times; they reported feeling ready to take risks with their teaching and to express their ideas more openly within the professional community. PSTs described feeling good about retweets as affirmation or validation of their ideas; they noted several times that the chats gave them a voice to use now and in the future.

_They might adopt my idea to only mandate homework be done by students who are failing the class... so many of the people participating in the chats are like myself, pre-service, but they are bringing to the table all these great ideas so even though we would think of an expert as being someone who might have a, 20 years of teaching under their belt, everybody can bring something to the table (interview)._

_I feel more like a "real teacher," in that my ideas were valued and shared equally with ISTs (survey)._

_So, being able to share some things that I’ve seen, um maybe with my CT or that kind of thing and I think it goes back to, when I say something and people are actually commenting, like, ‘I’d never thought about that’ even though I don’t have the experience that some of them have, it validates some of the ideas that I can bring to the table (interview)._
**Information.** Acquiring new skills or knowledge is another indicator of human capital revealed in the data. Being part of a network or community provides access to resources that help build knowledge. Participant responses reiterated how they liked hearing stories from ISTs about the praxis of teaching: what works and what does not. Chat topics on technology, using authentic resources, and motivation were particularly relevant for the PSTs. Many mentioned making physical or mental lists of ideas for future reference and remarked about the ease in which Twitter allows them to go back and review certain chats. Overall, the information they received took the form of books, ideas, websites, technology tools and teaching ideas. Resources can be overwhelming to new teachers, and some participants mentioned that seeing certain ones in the chats helped them sort through what was worth researching on their own time.

*I learned about what methods teachers feel were effective and realistic (survey).*

*For example, teachers explaining what they really have time for in regards to technology was eye-opening in these twitter chats (interview).*

*I gained a lot of insight from experienced teachers' outlook and recommendations for professional development (survey).*

**Inspiration.** Another indicator of building knowledge as human capital focuses on being inspired by the work community members are doing. This indicator was revealed in the responses as a desire to learn and do more regarding teaching practices, or being personally inspired by the general teaching profession. These characteristics are closely aligned with identity, feeling more like a teacher or a professional by doing “professional” things. Participant responses emphasized being inspired to research more about technology and ideas
for future lessons and being inspired to go into the teaching profession. Participants also noted that their learning will not stop when they graduate.

_Purely, the ideas contributed in the chats have inspired me to research more within educational technology (survey)._  

_ I want to strive to use the textbook as a source only when the ideas stop flowing (Takeaway tweet)._  

_Down the road, I can see it affecting others because I will be able to share my experiences with other stakeholders in order to show them other ways of doing things that they may not have considered before (interview)._  

**Professional identity.** The last major indicator for potential value with human capital is identity, the idea that being a part of something provides members with a sense of distinctiveness. For PSTs who are in a murky world of student/professional, the chats have given them a professional persona and personal voice. They like when other teachers follow them, reply to, or retweet something they have tweeted, and found that being acknowledged as a valuable contributor made them feel more successful in their roles as PSTs. Participant responses included words describing the PLN as _special, club, or group_, noting that they felt included in something that PSTs are not usually a part of. Several had the opportunity to meet some of the PLN at a state conference, and their responses reflect being noticed there as a colleague.

_Because, you are basically in this club for your trade and you haven’t started your trade yet, so you get pre-access. You are in this special group of people who has already done this, that’s cool, we should be proud of that (interview)._  

_I now have a professional twitter account. I also now have colleagues who only know me in a professional sense (survey)._
Makes me feel kind of like a little professional. Oh wow, do I really belong in this circle? At a recent conference, a few professionals knew my name and face by my Twitter profile, before even meeting me in real life (interview).

**Social capital.** The framework examines social capital from the perspective of how participation changes social relationships and connections for community members in terms of distributed knowledge. There were two indicators that arose from the data: relationships and connections and trust level.

**Relationships and connections.** Comprehensive findings that came from the data indicated a high potential value created by the social relationships formed; participants viewed the virtual relationships as making them feel more connected with the profession or with others outside their immediate community and as a means of combating isolation. They expressed a desire to continue communicating with other members of the PLN and noted that it gave them a sense of belonging.

*I realized there’s a gr8 community of #langteachers here. I want to connect more! (Takeaway tweet)*

*I've been introduced to a support network of amazing teachers who have built up their own network and can connect me to people, websites, journals, and blogs for support as I start teaching (survey).*

**Trust level.** Being able to trust members of a community or know who to go to with questions creates a safe space, especially for pre-service teachers. Having a level of trust is another indicator for building potential value through collective knowledge. Several words were used to describe the trust level that participants felt within the community, including *comfortable, expertise, and support.* Because they had communicated regularly with the ISTs through the chats, many participants felt that those ISTs knew what they were talking about.
and had also shown that they cared about the PSTs and wanted to mentor them. They felt safe asking questions or expressing ideas about teaching.

*I think it's a good network for questions. If there's something that you don't understand, for clarification, because there's always, if you're going to implement it or you think it's a good idea, but you have a questionable measure, then I'll ask (interview).*

*In addition, hearing other teacher's perspectives who are actually already in the field helps to create networks with potential mentors that I can go back and contact with questions as I get started in the field (survey).*

**Tangible capital.** This form of potential value comes from the actual resources that members of a community are exposed to by being in that community. These resources can be blogs, websites, documents, technology tools, ideas, etc. For this study, findings indicate how participants viewed these tangible resources: as other Twitter users, websites, authentic resources, technology tools and games (such as *Kahoot* and *Quizizz*). Some participants made lists of resources that were discussed so they could look at them later. Many of the Takeaway tweets included learning about technology tools and getting resources or links to websites for language learning.

*The biggest that came from the Twitter chats was different resources to use in the classroom and most of those were actually educational technology resources (interview).*

*I had one conversation with an IST who gave me some good websites for cheap books! I got a lot of ideas for resources on #AuthRes day in general - and some through others’ discussions of their use of IPA’s (survey).*

*I learned that there are TONS of online resources for language learning (Takeaway Tweet).*

**Reputational capital.** Collective intangible assets are also a form of knowledge where the asset is the reputation of a community or network. When a community develops a
positive reputation, it provides that community with a collective voice. This includes a feeling of belonging. For this study, one indicator for reputational capital as knowledge centers on how the community changes their understanding of expertise and how they acquired a new voice.

I think the main thing for me was just the PLN, the fact that I have one, and I haven’t even started teaching yet. It’s pretty darn cool...I'm now on the map. Even before I start teaching, I have an online presence as a teacher (interview).

Really, just have experience with that professional learning network and get an understanding of it... it’s a foot in the door kind of thing (interview).

**Learning capital.** When learning occurs due to participation in a community, it becomes inherently valuable for those members who may have previously-held ideas of what learning should entail (often formal learning). When learning takes place within a community, members have the opportunity for potential use in a different context. Two indicators were revealed for this form of potential value, which have been combined here: new views of learning and transformation.

**Transformed views.** When knowledge is transferred to other contexts, it can be transformative. Being able to see opportunities for learning in other contexts comprises this indicator for potential value of knowledge capital and reflects members’ new interests on learning and leadership activities. When members recognize how they can learn from a community, this increases potential value of knowledge capital. For this study, many participant responses focused on the idea of how to participate in a PLN, use Twitter professionally, or how the views of practicing teachers have encouraged the PSTs to reconsider their views about assessment and rubrics.
I think the Twitter Chats kind of half helped me figure that out [on moving into a community] because why else teachers be like, spending their free time when they aren’t getting paid and they aren’t being told to do this professional development thing that don’t even count towards your mandatory PD credits (interview).

We have all learned how to run a PLN twitter chat. I also thought it was cool that my class got to take turns moderating. I’ve never done anything like that before (survey).

I think that in the future, to promote a proficiency [sic] based classroom, rubrics are always a good resource. Numerous times, teachers have mentioned how they use rubrics in the classroom and even things like pre-assessment and self-assessment that are often overlooked. The PLN has helped show numerous ways assessment can be done, but gives me ideas for which methods may work better for proficiency (survey).

Many also reported being excited about taking their new learning into their future classrooms. Common responses that emphasized this learning capital were how the chat discussions broadened participants’ understanding of pedagogy, learning more about teaching praxis, or being prepared for student teaching because of this new knowledge. One participant shared how the chats helped develop a deeper understanding of what a PLN is.

Something you don’t really, I think most people don’t get until they start teaching is the professional learning network. Because like, I had no idea what that was and you can explain it to me all day long until you’re a part of it, you don’t understand it (interview).

I think at this time it has provided me with a concrete sense that both technological forms and text forms all have their purposes. It has led me to believe that if a balance can be reached between the two maybe we would have a more concrete way of teaching towards a mastery goal (interview).

**Cycle Three – Applied Value (AV)**

This cycle refers to changes in practice, based on participation in a network or community. Whereas knowledge capital has potential but may or may not be put into practice, *applied value* measures instances where knowledge capital is leveraged to make a difference using “...knowledge, tools, and social relationships” (Wenger et al., 2011, p. 29).
At the time of the Twitter chats, pre-service teachers may not have been in a position to apply the knowledge capital gained from the chats directly with students, therefore applied value emerged in the form of implementation of ideas through lesson plans, class assignments, Twitter use and posts, tutoring jobs, and/or social connections on Twitter.

**Implementation.** This indicator highlights new perspectives or innovative ways to accomplish a task. For PSTs, this is reflected in the actions they take based on participation in the chats. Common responses about implementing ideas were reflected in the PSTs’ immediate community: using authentic resources, ideas, games, or songs for a class assignment, lesson plan, micro-teach, or with students they tutor.

*For example, after the chat about textbooks, I asked my CT some of the same questions that came up to see just how different her views may be from my own and those involved in the chat (survey).*

*When I taught the days of the week in the classroom of my Cooperating teacher I used the vocabulary that was provided in the textbook. However, I taught the lesson using a different strategy and a different method (survey).*

For PSTs, applied value also comes from trying out resources or tools they learned about, either on their own time as a form of personal learning, or in their CT classroom. Participants shared how they created lists of resources, tips, or techniques to refer to in the future. The chat topic of games with technology was brought up often, and participants mentioned researching those technology tools after the chats. Some participants noted that the chats themselves were viewed as implementing ideas, because they felt empowered to make suggestions or share resources. Using Twitter for educational purposes was also mentioned, both as a user and for consideration with future students.
After having time to really sit down and play with those [games] some, I can see how they could be really good formative assessment tools and fun things, not boring for students to do (interview).

I have investigated various websites that others have shared as a way to find authentic resources that I can form a lesson plan around (survey).
I have revamped my rubrics and my lesson plan strategies, solely to change up the game! (survey)

For PSTs who are not in a classroom full time, the chats themselves were a form of implementation, as they were applying what they learned in class to their responses.

That was a fun, fun participation activity because we were able to implement what we were talking about right now and it wasn't just something that's in the textbook or on the slide [Moderated Twitter Question] (interview).

During our most recent chat about motivation, I was able to apply new knowledge from class (survey).

One participant mentioned personalizing questions for the tutee, an idea she got from a chat on motivation and another is working with the CT to make changes in the department.

I learned on motivation day that personalizing lessons for students really helps motivation, and I now personalize the questions I write for the student I tutor (survey).

My CT and I are trying to get the rest of the Spanish teachers at that school to agree to change their common tests to not have sections of straight conjugation exercises. I told my CT that we have learned not to use those because they have no context and are not meaningful (survey).

Numerous responses referred to specific chats about authentic resources and technology, with many focused on trying out new technology tools for themselves after hearing about them, such as Quizlet, Kahoot, and Flipgrid, and using specific website sources, books, or videos that were mentioned by ISTs in the chats.

And so not only can I search for it on the internet which I’ve done a lot more after the tweeting, um searching for different tools and resources online (survey).
I looked at some of the things on Newsela [an interactive leveled reading application] a few weeks ago to see how they alter the text for different comprehension levels (survey).

I have used a technological tool (Pinterest) to find music for novice students (survey).

Social connections. Leveraging connections to accomplish a task also contributes to applied value. For the PSTs in this study who are not regularly in control of a classroom yet, the opportunities accomplishing tasks through social connections manifest themselves differently than they might for an IST. For example, many responses focused on using the ISTs as mentors to help them navigate the teaching process or as resources job connections or advice. The participants articulated the value gained by creating these connections and having followers or people to follow on Twitter. Responses also indicated how the participants viewed themselves after participating in the PLN; they felt more like ‘professionals’ or ‘colleagues,’ and the PLN reduced feelings of isolation, especially for those coming from small university programs. The group that moderated the chats also met in person to take part in the Twitter chats, and a participant noted how this collaboration brought them together as a community. Two of the PSTs met some of the Twitter Chat members in person at a state foreign language conference, and their responses indicated that they felt more comfortable approaching them because of the relationships they had already established virtually. A few of the PSTs remarked that they continue to engage in dialogues on Twitter outside of the chats on topics not related to teaching as a way of building friendships. One participant also mentioned how being on Twitter expanded her Twitter
community (who to follow and followers), since the platform provides suggestions on who to follow based on tweet analytics.

*For example, I feel really comfortable around [PST chat member from another university], you know, we talk about where we grew up and everything, so I feel like I’ve got some friendships being fostered as a result...*(interview).

*I really have been forced to network outside of this department at [my college] and so that's why I have friends at [SITE 1] and I have friends at [SITE 2] and even in different states that are doing similar programs in language or even linguistics. It's nice to connect with them to see what they're doing*(interview).

**Cycle Four - Realized Value (Real-V)**

Student success is not always guaranteed when new practices or ideas gleaned from social learning are implemented; seeing results from what is applied suggests the realized value in the activity. Cycle four reflects performance improvement, which is how participation in a network or community enhances a member’s performance. Realized value often requires a level of control on the part of the community member to enact changes in performance with stakeholders. In this case, the PSTs are not necessarily in a position of authority under their CTs, making this cycle challenging to reach, especially given the time frame of this study. The findings are limited for this cycle; realized value for PSTs is situated within their environments as students in a methods class and pre-service teachers entering the field for the first time. Findings for this cycle are reflected in the survey and interview responses to prompts designed to elicit realized value. The findings focus on two indicators of PSTs’ realized value: personal performance and affecting change.

**Personal performance.** Personal performance that supports realized value is reflected in the ability to complete a task more effectively or more easily based on
participation in a network or community. Changing one’s practice does not necessarily equate with improved performance (Wenger et al., 2011). For PSTs, performance can be in the form of finding resources more efficiently, affirmation or positive feedback from ISTs or CTs, or positive results from students. For this study, findings show improved performance from two indicators: saving time and influencing others.

**Saving time.** Practicing ISTs have years of resources built up, whereas, PSTs may only have a small toolbox from courses or personal experiences. Therefore, saving time is another indicator of realized value for PSTs. For this study, saving time was reflected in finding resources and connecting with other professionals through the chats, which was facilitated by the platform of Twitter as an organizational tool.

*And the other thing is like, where else are these people going to express their opinions in this manner? In a way that’s easy for you to find? Cause otherwise you have to individually look up all these people instead of having them come to you in this chat and then you have all of their resources too* (interview).

*I looked for El Museo del Prado’s YouTube channel and was given a plethora of artwork lectures to choose from for my assignment. This made my life a little easier because I usually have a hard time finding appropriate and authentic texts in the TL (survey).*

**Organizational outcomes.** This realized value is reached when PSTs effect change within an organization. Wenger et al. (2011) refer to this indicator as what an organization has achieved due to a member’s participation in a community. This can include “client satisfaction” in the form of student achievement and satisfaction (Wenger et al., 2011, p. 30).

**Effect change.** Many PSTs shared how they implemented ideas from the chats or ISTs with students they tutor, in lesson plans for class, during teaching demos, or with students from their cooperating classrooms, with positive results from stakeholders.
One lesson I created as an inspiration from the connections I've made and ideas they've shared from the Twitter chats, was to create a sense activity and for my five year old kindergarten boy, he was really excited to have some different things to smell (interview).

The student I tutor LOVED the personalization. He laughed and he always gets excited when he sees a familiar name. He also thoroughly enjoyed the song and kept singing it, even after I left (survey).

Cycle Five – Reframed Value (REF-V)

The final cycle in the Value-Creation Framework examines how members of a network or community redefine what matters for members and other stakeholders. Reframed value refers to an amended understanding of success, which is described for members by reframing goals or values at “…individual, collective, and organizational levels” (Wenger et al., 2011, p. 21). Success can be viewed in the form of community aspirations, conversations with stakeholders, institutional changes, or new frameworks. For PSTs in this study, reframed value indicates a change in beliefs about teaching practices, which is a change to their pedagogical worldviews. Reframed value is uncovered through a series of prompts in the survey that are directly related to understanding how value is reframed. Though not all participants reached every aspect of this cycle, several responses indicated that these PSTs were becoming reflective practitioners, seeing teaching practices in a new light.

New frameworks. This reframed value focuses on new social or institutional systems (emerging or created). A new understanding of what constitutes success can lead to the development of a new framework for members of a community. For this study, this framework contributes to a change in PSTs’ pedagogical worldviews. Findings show new frameworks are developing; the chats not only expanded participants’ worldviews on
teaching methods or pedagogy, but also on the realities of the teaching profession. For these participants, the new frameworks centered on assessment practices, a new awareness about the teaching profession, and their belief on what matters to them as PSTs.

Assessment practices. One indicator that emerged from the responses included new ways of thinking about assessment for World Language students. Participant responses mentioned specific topics from the chats (especially assessment and motivation) as having a profound effect on their views of what matters for themselves and their future students. Many responses indicate a desire to become better at evaluating student work, either through better tests or trying performance-based assessment. Many noted that technology tools that were shared during the chats helped them realize how they could be used for language evaluation. Some respondents shared how they developed a new understanding of using pre- and self-assessments. For a few participants, reframed value came in the form of new understandings of how assessment and evaluation of student work looks.

As language teachers, we know that the grade doesn't really matter. We want students to be able to understand and use the language within the culture. Yet I'm still not sure how to use this information to impact others outside of a classroom I'm in charge of (survey).

Awareness. Reflecting on information can lead to a new-found awareness about teaching practices, the teaching profession, or personal deficiencies. For PSTs, this can take the form of reframing their worldview on the realities of teaching. Findings from the Takeaway tweets from the chats revealed several areas in which the participants reached a personal awareness of a new understanding:
I realized how many forms assessment takes

I realized how important feedback can be to motivate (students) and want to work to think about each student during lesson planning

I realized that no one has all the answers

Beliefs. Participation in a network or community can lead to a reflection about what is important to members. For PSTs, this can take the form of changes in beliefs about teaching theories, practices, or techniques. Hearing from ISTs was common across all participants; the chats helped them see which teaching techniques or methods real teachers use in the classroom. Comments from both the survey and the interviews reflect the participants’ appreciation of being able to see into a classroom, which in turn has helped them explore their own views of what teaching a world language looks like. Responses support a changing worldview of the teaching profession, not only affirmation that what they have learned is used by real teachers, but also where the gaps in theory to practice develop.

It [the chat] highlights the general struggles and success of teachers which focus on a lack of interculturality and student motivation (survey).

For me personally, yes. As the semester has evolved, I found myself at the beginning of the chats praising participation grades and thinking traditional tests were amazing. But the chats have opened my eyes to evolve my own bubble. In fact, now I doubt I will use participation grades, nor traditional tests. I will rely more on rubrics because I am seeing first hand their success in getting students to be proficient, not simply a good test taker (survey).

My understanding has helped me to understand that success does not (rely) in mastering what the book believes to be important. Now I understand that a textbook is only one of many tools that are available for language instructors (survey).
Value Creation Across Cycles

Specific examples from the value-creation story section of the interview served to create stories about the extent to which value is created from participation in a network or community. Data analysis examined four participant stories as they moved across the value cycles. Findings include a description of the participants’ stories with evidence of how their stories cross multiple value cycles. Stories were constructed using the Value Creation Story template by Wenger et al. (2011), which follows a typical sequence of up to five steps:

- Activity (what happened)
- Output (what was gained)
- Application (how what was gained was applied)
- Outcome (personal or organizational change)
- Significance (something occurred to redefine what success is)

For this study, a Value-Creation matrix was built from the re-stories, which are culminating stories created from the responses; that is, a story told from the participants’ voices. A value-creation matrix helps clarify how value traverses each of the five Value Cycles. In the matrix, specific events for each cycle are displayed horizontally to represent specific events that occurred during the chats as shared through the tweets, survey, and interview. Arrows are used to indicate how the events are connected; dotted lines indicate when proxies are used. Wenger et al. (2011) are clear that not all cycles have a beginning or end; in those cases, proxies are used to show “…that it is too difficult to know the full story” (p. 34) or that the story has not yet ended.
Participants’ stories.

**Diana.** This participant is a traditional college senior who is on track to student teach in the spring. She is studying Spanish with a K-12 state license and plans to return to her hometown after graduation to teach high school. See figure 4.1 for her story matrix.

![Value Creation Matrix for Diana](image)

**Figure 4.1:** Value Creation Matrix for Diana.

Diana tells how she was discouraged from going into teaching by a high school teacher who had a negative outlook on teaching, which has permeated her worldview about teaching for a while. Her story begins with comments about two meaningful chat topics: technology tools for games and using authentic resources. Based on those discussions, she expresses enthusiasm for learning about new tools for future use. The discussion on authentic resources, however, compelled her to try using a target language movie trailer for one of her class lesson plan assignments. Her story continues with how she made connections through
the chats or by following ISTs on Twitter, which led to her newly formed understanding of how much of a support system exists for new teachers. She also reflects on how her views on teachers and the profession have changed. Diana was concerned that she would not have sufficient role models or mentors when she began teaching; she explains how it is nice to see so many teachers who choose not to do things “the same old way” which inspires her to “think outside of the box.” This reflection points back to the connections she made with ISTs that expanded her views on teachers in general, thus redefining her idea of what quality teachers look like. Diana expresses feeling supported to try out new things. She feels inspired to go into teaching because she has been exposed to wonderful teachers who serve as the role models she never had. Her stories about the platform of sharing point back to the connections made with the ISTs during the chats.

Justin. He is a traditional college senior who has always wanted to be a teacher. He is a Teaching Fellow at his university (a scholarship program for future educators) which has given him more experiences than his peers when it comes to field experiences. He tutors elementary age students, and this is where his observations also occurred. He is on track to student teach at a high school in the spring. See figure 4.2 for his story matrix.
His story starts with the impact the chat on assessment had for him and how it was the first time not everybody agreed. He uses the term “debate” to describe the chat, and he found it very engaging and interesting. He talks about creating Google Forms for assessments such as exit passes. Using Google Forms for assessment was something he had not considered before, even though he is very familiar with the Google platform. Justin was motivated to discover how to re-purpose a familiar tool from the perspective of a teacher instead of a student. His story continues with how the connections he has made on Twitter have inspired him to try out new techniques with the students that he tutors, and he enthusiastically shares a lesson he designed, inspired from one of the chats, that was well-received by his tutees. From there his story moves to the professional connections he has made with people all around the country and how this has given him the extra confidence boost he needed to go into the
classroom. He describes how the chats helped him see the need to teach to learning styles other than his own. His story closes with a reference to the assessment chat and how profound the conversation was for him and his perspectives on assessment.

**Nick.** Classified as a “super-senior,” Nick is finishing his fifth year for a Bachelor’s Degree in Spanish with the K-12 state license. He has spent time tutoring elementary school ESL students and spent his fall semester observing at a high school. He is on track to student teach in the spring. See figure 4.3 for his story matrix.

![Figure 4.3: Value Creation Matrix for Nick.](image)

His story begins with the most meaningful chat topic – engaging learners – because for him, it is an area in which he feels least prepared. He expresses gratitude for the classroom management tips from ISTs, such as getting to know them personally by learning names quickly. He mentions Quizlet, a tech tool he learned about in the chats. He explains
how he has incorporated it into some lessons for his methods class and how he cannot wait to use it with his students in the spring. He shares how this encouraged him to incorporate technology into his cooperating school’s classroom and how this will help his future students become 21st century learners, not just with language but with life. His story continues with his biggest takeaway of all: having a support system. He mentions several times during the interview how shy and insecure he usually is and how the chats have helped him to overcome some of his fears. He has developed genuine friendships with some of the other PSTs through the PLN and met some of the members in person at a local conference. Taken together, this has inspired him as a person. His story was marked with instances of low self-confidence and shyness. He closes with a description of the profound effect the chats had on him personally, and the way they validated his role as a teacher, empowering him to participate more in his school PLT.

Amy. This participant is a non-traditional student who returned to school to study languages and education after many years of holding down a career and raising a family. She spent the fall semester observing in an ESL community college classroom and is on track to student teach Spanish at a k-12 school next year. See figure 4.4 for her story matrix.
Her story begins with a recollection of a chat on motivation. It was meaningful to this participant because it was the first time she challenged ideas by responding to another PST’s tweet. She uses the word “intense” to describe the exchange, and the interviewer gets the feeling that this was out of her comfort zone. She mentions using some of the ideas that came from the chats with the community college ESL classroom. Her story continues with the chat about games with technology tools. She tells how she sat down and explored the various games that came up during the chat and that she began to see how they could be used with formative assessment. She shares how this chat produced many ideas that she wants to try out in the future. Amy also shares how she began noticing tweets on Twitter by other teachers (not necessarily from the chats) outside of the scheduled Twitter Chat sessions. For Amy, reflection has played a large part in her journey this semester. She explains how the chats
brought up topics that she has thought about on her own. She actively questions if there is a hierarchy of methods; is one more important than another? She plans to implement a lot of the ideas that came about from the chats once she is in a classroom, and she realizes that she has a real support system out there on Twitter that she can use when she is teaching. She remarks how helpful she thinks it will be to have this support system on Twitter as a place to go for advice before trying out something with real students. Her story concludes with the idea of strength and support, that for her, there is a new definition of what it means to be a “stronger teacher” because of the outlet and resources to help new teachers.

**Summary of Findings**

The major findings of this study have been presented in this chapter. The research question focused on data from nine participants to examine how their experience with the Twitter Chats led to value being created within different cycles. Analysis of takeaway tweets, survey responses, and interviews revealed that although some cycles were not reached as strongly as others, indicators of value did emerge from every cycle for some of the participants. In addition, analysis from value creation stories of four participants showed how value was created from specific events across the value cycles. Common elements gleaned from the value-creation stories include chat topics, connections, confidence, games, assessment practices, and tweets. Though these are common elements for all four participants, not all fall under the same value cycle. Chapter five will present a detailed discussion surrounding the findings.
CHAPTER 5: DISCUSSION

The overarching goal for this study was to understand the ways in which value is generated for World Language pre-service teachers who participated in moderated Twitter Chats over a three-month period. By applying Wenger et al.’s (2011) Value-Creation Framework to three data sources, value was examined more deeply within and across the value cycles. Applying this framework to participants’ collective stories in this study provides an insight to the activities and events from the chats that generated the most value for these World Language pre-service teacher candidates. This chapter discusses these events as they relate to the five value creation cycles (immediate, potential, applied, realized, and reframed) situated within current theoretical and empirical research literature. The research question guiding this study is as follows:

1. In what ways, and to what extent, do World Language Pre-Service Teacher candidates find value through participation in moderated online Twitter chats with other PSTs and In-Service Teachers?

Synthesis of Findings

Learning is not a static action. Based on the assumption that engaging in a professional network or community has a positive impact on teaching and student learning, and that virtual PLNs can serve as communities of practice for pre-service teachers, this study sought to measure the value placed on moderated Twitter Chats within a community of practice of pre-service and in-service World Language teachers over a three-month period. Through data analysis of participant tweets, survey, and interview responses, value was generated within each of the five cycles. Analysis of four value creation stories revealed
ways in which value was created across the cycles and the benefits of the chats for the PSTs.

**Value Within Cycles**

Overall, the findings show that the moderated virtual Twitter Chats provide valuable praxis experiences for World Language Pre-Service Teacher candidates. The Value-Creation Framework by Wenger et al. (2011) includes templates for data collection with a variety of cycle indicators used to measure value. Figure 5.1 shows the five value cycles (Immediate Value – IV, Potential Value – PV, Applied Value – AV, Realized Value – REAL-V, and Reframed Value – REF-V) with the major findings that contributed to value creation within each cycle, based on the indicators from the *a priori* coded data.

![Value Created Within Cycles](image)

*Figure 5.1: Value Cycles and Contributions to Value Creation.*
The initial cycle (IV) in the Value-Creation Framework reflects the notion that participation and interaction in a network or community hold an immediate value. The two indicators that emerged for this cycle were networking and quality of interactions.

For PSTs who are isolated, either because of small teacher preparation programs or limited number of field experiences, the chats served as a means of connecting other PSTs and practicing teachers across the country quickly and easily. For PSTs who were not familiar with Twitter, this immediately expanded their network of professionals. The moderated interactions with ISTs helped bring experience of practice into the learning space. Through the Twitter discussions, PSTs learned from the ISTs and gained valuable pedagogical and pragmatic insight.

The second cycle (PV) involves interactions that build a knowledge base that could be of value in the future; that is, value is not known or used immediately. This cycle encompasses layers of “knowledge capital” (Wenger et al., 2011, p. 20) and focuses on value that is not immediately created; that is, the potential for knowledge capital is the value. Taken together, “…these assets increase the potential for collective action” (Wenger et al., 2011, p. 20). The awareness that learning can take on different forms can be transformative for members of a community. The second cycle was the broadest in terms of value indicators generated for this study. This was to be expected for this group of participants, because they are, by default, positioned to gain potential value from planned experiences. For PSTs, potential value was perceived through the building of collective knowledge capital from the practical resources, the reputation that being part of a community brought to their professional identity, and the social connections. The PSTs expressed a desire to broaden
their knowledge base with new tools (such as games or technology tools) or perspectives (such as assessment practices or the use of textbooks). They gained confidence in their abilities to be teachers when ISTs retweeted or liked something they posted. Together, networking and interacting with ISTs led to a development of professional identity for these PSTs. Being equal contributors and participating in a professional activity is important in the identity development of PSTs who spend their time at the university relegated to the role of a novice learner (even their internship is labeled “student teaching”). Accumulating resources is also potentially valuable for PSTs, who often feel pressure to produce without much experience. The chats allowed for ISTs to share resources, ideas, and technology tools that inspired the PSTs to seek out more information. They also helped PSTs see different views on teaching and practices, exposing them to larger pedagogical worldviews. Finally, potential value through social connections was strong for these participants. Not only did they feel more connected to the profession, but they expressed how they trusted the ISTs and would be comfortable reaching out to them in the future. Following those whom you trust is a way to filter the multitude of information we have access to (Wenger & Trayner, 2015). The overall potential value for the PSTs is having a safety net: a group of educators who are just a tweet away for help.

The third cycle (AV) identifies value that comes from documenting a change in practice; for PSTs, this means trying out newly learned information by modeling a lesson for their Methods course, working with small groups of students or tutees, or teaching a lesson in their cooperating teacher’s classroom. Teacher preparation programs can rarely do it all; they must look for ways to expand PSTs’ knowledge (Carpenter, n.d). The Twitter Chats served
this purpose by exposing PSTs to ideas, resources, tools, and mentors (PV); when PSTs have a chance to try out their newly acquired information, tools, or ideas with actual students, this helps begin the reflective process of teaching practices. Some of the participants had opportunities to apply their new knowledge in classroom or small group settings, which was valuable for transferring theory into practice with real students. The immediacy of being able to implement newly acquired practices builds on the idea of extending classroom learning into real field experiences for PSTs (Kassens-Noor, 2012). Trying out something new is a creative endeavor that involves not just learning, but knowledge creation as well (Wenger & Trayner, 2015). For the PSTs who did not have a place to try out newly learned information, their applied value took the form of trying out new information on themselves, as learners.

The fourth cycle (Real-V) comes from participant stories that affect a performance outcome where there is a “return on investment” (Wenger et al., 2011, p. 38) that can show a direct relationship to quantitative measures (i.e. test scores). It was not expected that many participants would reach this cycle (Real-V) since it necessitates a position of authority to make changes in a classroom or curriculum, which is rarely the case for pre-service teacher candidates. However, personal performance and organizational outcomes were indicated in the findings for some participants when situated within the pre-service teacher environment. Findings supported their ability to complete a task more effectively or more easily based on participation in chats, because the ISTs were providing resources, ideas, and advice for the PSTs. Saving time finding resources or coming up with ideas is priceless for a novice teacher, who begins their teaching with a relatively empty toolbox. A few participants who
work with tutees or with a CT successfully implemented ideas from the chats, and those that did not reworked lesson plans for class assignments or teaching demos for Methods class.

The final cycle (Ref-V) is created through reflection of assessment practices, teaching realities, relationships with stakeholders, or the development of new frameworks. This cycle reflects the point in which members gain a new awareness of what is important to them. This also includes activities or events that lead to a transformation of existing frameworks or developing new ones (Wenger et al., 2011). For PSTs in this study, their role as novices, as well as the relatively short amount of time they participated in the chats, likely contributed to not fully reaching this cycle at this time. Wenger et al. (2011) note this in their template but allow for proxies to be assumed about participant stories. For this study, success can be viewed in the form of becoming a reflective practitioner, which can lead to a change in beliefs about teaching and/or practices; that is, a change to their pedagogical worldviews. For PSTs who have been exposed to theory from their coursework but little praxis, the Twitter Chats offer opportunities for reflection on what matters – to themselves and to practicing teachers. In a study by Lord and Lomicka (2004), the authors found that social reflection from interactions are beneficial for PSTs. The Twitter Chats served as a vehicle to inform the PSTs’ reflections through interactions with other PSTs and ISTs. The chat topic on assessment was referenced by many of the participants. Hearing how ISTs use alternate forms of assessment, such as technology tools led to reflections on the role and forms of assessment in a World Language Classroom. Although teacher preparation programs likely include assessment and evaluation strategies as part of the curriculum, the PSTs in this study seemed to experience “a ha” moments during the chat about how assessment looks in a real
participants also developed a new voice through the chats, which in turn, helped them to change the conversations with the ISTs during the chats and encouraged them to initiate conversations with their CTs. Their pedagogical worldviews may have been expanded or altered during the three-month period, but what can be taken from their stories is that they believe they have experienced professional growth. While there might be other variables that contributed to this change, responses from the participants highlighted how the chats helped them become more aware of teaching practices, the profession, and gave them the ability to “see” into multiple classrooms through the discussions with the ISTs.

**Value Across Cycles**

Value creation matrices are helpful in examining how value is generated across the five value cycles. Four participant value-creation stories were constructed and analyzed from interview data to show how their stories “[weave] through each of the cycles” (Wenger et al., 2011, p. 33). Analysis of these stories provides insight into the extent to which the chats generate value. Overall, the findings from the stories show how the moderated virtual Twitter Chats provide valuable praxis experiences for World Language Pre-Service Teacher candidates across the value cycles. Figure 5.2 reflects the interweaving stories of each of the participants across cycles. The boxes and circles denote indicators of value found at each cycle. The solid lines represent each of the stories that move through elements of each cycle, and the dotted lines are meant to serve as assumptions. From here, themes were mined to analyze the benefits gained for the four participants.
The participant stories begin with the productivity of the moderated Twitter Chat topics and the connections that were made as a direct result of the chats. These immediate value events lead to new knowledge (cycle two). Across the four stories, participants found potential value with learning games, authentic resources, and technology tools. For PSTs, resources are a large source of potential value because they strive to expand their classroom toolboxes prior to entering a classroom. However, concrete tools are not the only form of potential value; two of the participant stories share how new ideas developed from chat topics. As the stories continue through to cycle three, they focus on how participants experimented with learned information and the effects of applying a resource (AV). Although many PSTs are not likely to have numerous opportunities to apply new learned ideas immediately, this cycle is nonetheless an important part of the professional growth.
period that PSTs experience. Three participants reflect on using ideas, technology tools, or other resources in lesson plans and class assignments, or in their cooperating classroom; another views the act of tweeting as a valuable application of learning because it was outside his comfort zone to speak up. After applying resources, the stories continue into cycle four, which links those effects to an outcome (i.e. a measure of performance). This realized value for PSTs is created in the form of personal and professional reflection on teaching practices, techniques, and an overall view of the profession. These participants realized that there is a support system in place with ISTs from around the world, not just within their local community. One participant saw this as permission to think outside the box when planning lessons; seeing ISTs who support various teaching methods was a valuable reality check that not everything has to be the way she sees it in her classroom observations. An increased confidence, new friendships, and novel ways of approaching the use of technology emerged as realized value for PSTs. One participant’s story included noticing tweets on Twitter from IST chat members that were outside of the moderated chats. This led to a realization that teachers participate in this form of professional development and sharing as a professional activity. When PSTs participate in a learning community, they begin to acquire the knowledge of what that involves (Sumsion & Patterson, 2004) and that it has “the potential to enable pre-service teachers to work with their peers and mentor teachers in more collegial ways” (Le Cornu & Ewing, 2008, p. 1810). Finally, if a fifth cycle is met, it involves redefining what success means; for PSTs, this includes reframing a pedagogical worldview. For these participants, changes came in the form of redefining what a quality teacher looks like, how assessment for World Languages should be implemented, and an increase in self-
efficacy. One participant’s tweets led to finding his professional voice and confidence in himself as a teacher and advocate for future students. PSTs are often relegated to the role of novice, which can make them feel that they do not have much to offer ISTs. The Twitter chats affirmed that their contributions to the profession are equally valuable.

Regarding the events in their individual stories, similarities and differences existed across the four participants. Common elements include the chat topics and connections creating an immediate value, learning new technology tools as a potential value, and reframing perspectives of how assessment can be handled. Interestingly, two similar events fell under different cycles for some of the participants. Learning about new games, for example, was an immediate value for one participant, but a potential value for another. For Amy, immediate value was created through the sharing of games in the chats, which inspired her to research them on her own time (potential value); whereas Diana viewed the chat on games as potential value, since she has not had an opportunity to try out any of them, making a list of resources to use in the future instead. Increased confidence also showed up for two of the participants, but under different cycles. Justin saw a confidence boost as realized value because the connections he made through Twitter led him to feel encouraged to make changes to his practice with students he tutors, which had positive results. For Nick, confidence fell into the fifth cycle: reframed value. For him, increased confidence came from his own tweeting and seeing his posts liked, retweeted, or responded to by teachers in the field. Connections on Twitter as an immediate value for participants led to realized value, but in different ways. For Nick, connections led to fostering real friendships among PSTs; whereas, Justin saw the connections as a way of generating ideas, which led him to
implement some of them, further creating a personal understanding of the need to teach to learning styles different from his own. However, Amy’s immediate value of connections led her to notice how members tweeted outside of the chats. Through recognition of support systems in place for new teachers (Realized Value) and understanding of what strong teachers look like (Reframed Value), she attributed this change in worldview to the connections she made with members of the community. Diana’s reflections about thinking outside the box (Realized Value) and the amount of sharing that occurs within the teaching profession (Reframed Value) also led her to recognize how this reflects the connections she made on Twitter.

**Benefits of the PLN to PSTs**

The Value-Creation Framework and matrix help synthesize which cycles and indicators are met by participation in an activity, but further examination is necessary to understand how these events or actions contribute to the production of value by the chats. Four participant narratives were “re-storied” and analyzed holistically with in vivo coding. From there, patterns emerged to reveal reoccurring indicators across the cycles. These patterns were grouped into five main themes that describe the ways in which participants benefitted from the chats: *membership, support, agency, resources,* and *learning.* These themes cross over cycles; therefore, discussion will intertwine the cycles under each theme.

**Membership.** PSTs are at the cusp of developing their professional persona within their immediate communities. When World Language Preparation programs have limited field experiences for PSTs, this reduces the opportunity to connect with other teachers or expand their pedagogical worldviews. Immediate value began with the Twitter chats
themselves as a form of networking with other PSTs and ISTs for a purpose. For PSTs, having a virtual mentor network at their disposal provides them with an immediate support system. These initial connections expanded networking opportunities because Twitter analytics encourage engagement: the more you tweet or follow people, the more tailored suggestions will be to your interests. Participants learned how to connect with others easily via Twitter, including individuals outside of the chats. The chats themselves produced discussion opportunities within this small community of PSTs who could connect with ISTs from around the country. Belonging to a group also amplifies opportunities to engage in meaningful discussions (Sim, 2006). Findings from this study indicated a high potential value created by the social relationships participants formed; PSTs viewed the virtual relationships as making them feel more connected with the profession or with others outside their immediate community. The PSTs expressed that participating in the chats with other ISTs helped them to develop a sense of professional identity. Participants voiced feelings of belonging to a special group with insider information, expressed a desire to continue communicating with other members of the PLN, and shared how participation in the chats gave them a sense of belonging. Wenger et al. (2011) note that “…one should not underestimate the value of a sense of companionship in the face of demanding tasks and learning challenges” (p. 20). A virtual PLN provides PSTs with an opportunity to expand their professional reputation and develop a voice.

Support. With large numbers of teachers leaving within their first five years of teaching (Teague & Swan, 2013), having support systems in place to assist novice teachers, starting with pre-service teachers, is imperative. The theme of support emerged as valuable
across participants and is reflected in the Immediate, Potential, and Applied Value cycles. Support began with the immediate value generated by connections to the Twitter Chat members and the quality in which those interactions occurred. The relationships that develop when one participates in a community or network become what Wenger et al. (2011) refer to as social capital, which means being able to approach the community with questions or knowing who to ask. The potential value of support comes from these social relationships and trust that develops through membership in the community; having a community in which there is a high level of trust where members feel comfortable asking questions or showing vulnerability is valuable. By creating a space on Twitter where shared learning can occur, the potential for future collaboration increases, thus raising the value of participation or mentoring for members. This lends support to a study by Carpenter (n.d.) who found that Twitter has the potential to connect novices with practicing teachers to increase mentor opportunities. Many saw the ISTs as mentors who would be ready to help. And though teachers may share resources openly, as a profession, they remain isolated. Elmore noted that teacher isolation is the “…enemy of improvement” (as cited in Schmoker, 2005, p. 141). Reducing the feeling of isolation was reflected in the participants’ responses. This is especially important since they all come from small programs within a larger university system; knowing that PSTs and ISTs are a tweet away helps reduce the feelings of isolation.

**Resources.** The chats also provided a space for sharing resources and ideas, which for PSTs can be a time-saver as more experienced ISTs who know where to look and have already vetted these resources shared them freely within the PLN. Resources and ideas are potentially valuable for PSTs because they can enter classrooms with a larger toolbox. The
Twitter platform facilitates their access to people, resources, ideas, and chat histories by using the chat hashtag. Accumulating resources is important for PSTs who often feel pressure to produce without much experience. Platforms such as Twitter can fill that knowledge gap because it exposes novice teachers to outside resources (Carpenter, n.d). Using Twitter as a platform for resources also exposes PSTs to norms of the practice; findings from a study by Carpenter and Krutka (2014) showed that 96% of K-12 educators who used Twitter did so for Professional Development (PD) purposes, such as “sharing and acquiring professional resources” (p. 428). Providing this type of access for PSTs early on not only helps prepare them for their internship/field experience, but also sets the stage for future collaboration and curation with other educators.

**Agency.** “If people believe they have no power to produce results, they will not attempt to make things happen” (Bandura, 1977, p. 3). For PSTs to develop this potential value of confidence and inform change, they must see themselves as worthy contributors to the field. Participation in the chats helped PSTs cultivate their professional identity, which helped them gain confidence in their abilities as future teachers. This lends support to a study by Bautista and Boone (2015) who found that when PSTs see exemplary teaching practices, their self-efficacy rises. While the chat participants were not seeing teaching in action, they were hearing first-hand about successful practices from the teachers. Closely aligned with confidence is another potential value: inspiration. Through information gained from the chats, participants were inspired to be proactive in their personal learning. This knowledge capital contributes to the participants’ sense of professional identity, that they are “doing professional things.” These types of activities led to new perspectives of relevance because
participants began to see how the topics they studied through their education coursework were directly related to the praxis of teaching. Confidence and inspiration also bring about the ability to influence others. Part of this comes from the applied value cycle, transferring learning to new situations and seeing success, and part comes from the affirmation of PST ideas by ISTs during the chats. Self-confidence plays a role in whether PSTs will be successful in their student teaching practicum (Sim, 2006); therefore, affirmations from ISTs in the form of replies, retweets, and likes helps build PSTs’ self-efficacy and confidence in their pedagogical knowledge. The chats also opened dialogue opportunities for participants to discuss topics with their cooperating teachers or apply a new skill when teaching a lesson in class or in their cooperating classroom. Another part of influencing others comes from realized value: seeing themselves as professionals who have something to say. While not all the PSTs reached this cycle, those that did felt empowered to speak up at PLT meetings or with their CTs to inform change. Finally, participants revealed a renewed definition of success. The PSTs, who are on the cusp of stepping into the teacher role, responded overwhelmingly that the chats gave them a professional voice; they began to feel like contributors. This empowered them to speak up with their CTs or in school-based PLT meetings.

Learning. When people come together to share knowledge, learning takes place. Learning within a community is a critical piece of the Value-Creation Framework; the community creates a space for collective knowledge building, which can be either formal or informal (Wenger et al., 2011). This study yields similar findings to those of Forkosh-Baruch and Hershkovitz (2012) who found that using social media promoted distribution of
knowledge and served as a way of enabling informal learning within a community. The value created for PSTs in this study comes from the interactions with the ISTs who shared information, ideas, and perspectives about teaching practices. When people come to a community having experienced only one way of learning, it can be transformative. Wenger et al. (2011) refer to this transformation as learning capital, which means experiencing a profound change in learning through a network or community and transferring that learning to other contexts. These findings also build on those by Ebner, et al. (2010) who examined how social media can serve as a virtual classroom; the chats functioned as an outreach of the classroom for the PSTs. In addition, new views of learning can lead to an interest in expanding one’s worldview or taking on leadership roles. Building a knowledge base through an organized online community can contribute to increased beliefs about self-efficacy. This theme also includes the fifth cycle, Reframed Value. For this study, reframing generally refers to identifying changes in pedagogical worldviews; many PSTs acted through reflection by developing new frameworks about assessment, awareness about various teaching practices, and the value of PLNs as a support system. Many responses referred to specific topics from the chats, especially the ones on assessment and motivation. Findings show that the chats helped expand participants’ worldviews on teaching methods or pedagogy, as well as illuminate the realities of the teaching profession.

**Implications for Practice**

World Language teacher preparation programs looking to support PSTs’ pedagogical and professional growth early should consider Twitter as a viable option for creating learning communities through purposeful connections with practicing teachers. This study highlights
the need for connecting PSTs with educators during their teacher education program to provide them early access to ideas, resources, and pedagogical perspectives, as well as an introduction into PLNs – how they function, how they can support teachers, and how they provide personalized professional development. If 40% of new teachers are leaving the profession after five years (Teague & Swan, 2013), providing a level of support necessary for the unique needs of novice teachers, beginning with their pre-service preparation program, is essential. See Table 5 for specific implications for practice in teacher preparation programs.

Table 5:

*Implications for Practice*

<table>
<thead>
<tr>
<th>Benefits of Twitter Chat participation for PSTs</th>
<th>Implications for Teacher Preparation Programs</th>
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| **Membership** | • Engage in purposeful connections with PSTs and ISTs to reduce isolation, create a sense of community and a sense of belonging  
• Participate in various Twitter Chats already in place  
• Incorporate PLN model in Teacher Ed programs |
| **Support** | • Provide virtual mentors for PSTs  
• Encourage collaboration among PSTs and ISTs |
| **Resources** | • Develop a virtual outlet for collecting and sharing resources during student teaching  
• Explore the use of social media early on, as a means of accessing tangible and intangible resources |
| **Agency** | • Provide PSTs with opportunities to share ideas and experiences  
• Engage in “professional” activities online that empower PSTs  
• Participate in deliberate practice to apply new learning |
| **Learning** | • Twitter can positively impact PSTs’ learning  
• Create purposeful activities to follow and engage with professionals who can provide diverse worldviews on teaching practices |
Studies have shown that novice teachers who can handle the pressures of teaching during the first years display self-regulation characteristics; that is, they are able to “…create their own support networks and learning experiences” that help them cope (Le Cornu, 2009, p. 717). Starting this support early in purposeful ways could help PSTs develop these characteristics. Literature reviewed by Ronfeldt (2015) supports purposeful partnerships, as they can positively impact how pre-service teacher candidates approach pedagogy and methods. Twitter chats are one way to connect PSTs with each practicing teachers who can provide a level of virtual support. Programs could develop their own chats, following the same structure as the educational chats from which this study utilized (moderated chats with question/answer format). Pre-service teachers need more in-depth experiences to explore the practical side of teaching, yet many World Language teacher education programs have limited opportunities for field experiences. These limitations not only decrease pre-service teachers’ (PST) exposure to various pedagogical worldviews, but base the complex theoretical understanding of teaching to one praxis. Teaching programs cannot do it all, therefore teacher preparation programs should look beyond brick and mortar institutions to provide PSTs with alternate sources for knowledge capital when mastery learning is not available (Tschannen-Moran & Hoy, 2007). Exploring social media tools is one way to reach this goal. Twitter has emerged as a platform for virtual Professional Learning Networks for in-service teachers (IST), and studies have shown the positive benefits for Teachers who are members of communities of practice, be it formalized or self-initiated. Participating in virtual networks or communities is an inexpensive way for teacher preparation programs to create field experiences for PSTs (Krutka, 2013) and expand their learning.
Recommendations for Future Research

This study presents findings on the value measured by Wenger et al.’s (2011) Value-Creation Framework. The findings provide information about the ways in which value is created for participants in a Twitter chat that took place over a three-month period during which the participants were enrolled in a Methods course in preparation for their student teaching internship. Though the findings reveal that value was created in a variety of ways, the chats were required as part of a course; future research is suggested for PSTs who voluntarily participate in Twitter chats or other types of online professional development. Delving into motivational reasons for participation in virtual PLNs could provide rich insight for teacher preparation programs, which could be expanded to include quantitative data to identify levels of participation (i.e. through number of tweets, retweets, replies, etc.). Future research that follows PSTs throughout their student teaching internship and into their first year of teaching would build on this study. This type of longitudinal study could provide insight into whether the PSTs sustained connections with their virtual network on Twitter and/or continued to pursue virtual PLN professional development opportunities. Understanding the effect the chats have on long term teaching practices would be beneficial to teacher preparation programs. The Value-Creation Framework itself is also an area for continued research. This study uses the original framework, as it included templates and guidelines for using the framework within the educational setting, whereas the new one appears to expand into other types of networks/communities. Future directions might be best approached with the updated version of the framework as a guide for implementing future activities, especially with very few empirical studies have used. The updated framework by
Wenger and Trayner (2015) includes two additional types of value, strategic and enabling, adds a feedback loop, and puts more emphasis on how community members change their practice. The updated version could be especially useful in a longitudinal study for situating the framework within the pre-service teacher environment, as it might help explain the difficulties that PSTs have in reaching reframed value. The new framework also focuses on aspirations and conditions that must be in place to have a strategic vision.

Finally, this study centered on World Language pre-service teacher candidates; future studies in expanded disciplines would be useful in understanding how virtual PLNs on Twitter are valuable within different areas of study.

**Conclusion**

Developing purposeful experiences that connect pre-service teacher candidates with in-service teachers exposes them to wider pedagogical worldviews and creates a network of mentors who can share ideas, resources and guidance. It also has the possibility of increasing PSTs’ self-efficacy and helping them cultivate a professional identity. Twitter as a social media platform has emerged as a valid and popular mode of forming virtual communities of practice. The moderated Twitter chats provided PSTs with opportunities to connect with experienced teachers easily, which in turn provided levels of support, guidance, and access to resources. PSTs also benefit from feeling empowered to enact change (agency) and the informal learning that can occur within the community of practice. With limited opportunities in teacher preparation programs to observe or experience a variety of pedagogical worldviews, the chats serve as an addition to their undergraduate programs, allowing the PSTs to be better prepared for the realities of teaching. In-service teachers
currently participate in Twitter chats for personalized professional development. Consistent with research by Reich et al. (2011), findings from this study show promise for creating intentional social spaces not just to connect PSTs with ISTs, but to provide access to dialogue and discussion. To address the needs of current World Language PSTs, teacher education programs must rethink their approach to teacher preparation, as expressed by Le Cornu and Ewing (2008):

However, it is our contention that framing professional experiences around the idea of active teacher and student teacher agency in learning communities has the potential to enable pre-service teachers to work with their peers and mentor teachers in more collegial ways. We believe that such changes are necessary if teachers of the future are to develop long-term reflective capacities that will enable them to participate effectively in learning communities throughout their careers and encourage their students to take such responsibility in their own learning (p. 1810).

Connecting World Language PSTs and ISTs can create a more cohesive and relevant experience for PSTs. With empirical research affirming the power of professional networking and communities, it is important to bring pre-service teachers into the fold as early as possible to introduce them to a network of support, teach them what a PLN is, how to participate in a PLN, and why participation is important for their professional development.
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APPENDICES
Appendix A

Data Collection and Survey Questions

After Chat Reflections [included in the moderated chat question]

What takeaways do you have from this evening’s chat?
I realized…
I learned …
I’m going to…

SURVEY [sent electronically in November after chats end]

Personal value narrative: Pre-Service Teacher Candidates

Glossary
PLN – Professional Learning Network (this is the community that gathers together on Twitter under the hashtag #Teach2Teach)
PST – Pre-Service Teacher (students in their professional year taking methods courses and planning for their student teaching practicum)
PLT – Professional Learning Team (usually a group of teachers at a school who meet regularly to discuss curriculum, assessment, and data)
CT – Cooperating Teacher (the mentor teacher under whom PSTs complete their student teaching practicum)

Participation
Thinking about your overall experience participating in the #Teach2Teach Professional Learning Network (PLN) Twitter Chats, answer the following questions:

[immediate value]
1. What was the quality of the collaboration?
2. How relevant were the chats to me, as a Pre-Service Teacher (PST)?
3. Which connections were the most influential to my own development?

[potential value]
4. How has participating in a World Language professional learning network (PLN) changed me as a pre-service teacher?
5. How has my participation in the World Language PLN changed my social relationships?
6. What access to resources has participation given me?
7. What role does the PLN play in the World Language teaching/learning community?
8. How has my participation in the PLN transformed my views of teaching and learning?

[applied value]

9. Where have I used/implemented ideas gleaned from the PLN?
10. Where did I apply a newly-learned skill?
11. When did I leverage a PLN connection to accomplish a task? (that is, if you used a PLN connection to help you accomplish something)
12. Was I able to enlist others (ex: your Cooperating Teacher, your PLT, other PSTs, etc.) in pursuing a teaching practice or idea that I care about?
13. When and how did I use a resource or tool that the PLN shared?
14. How did I implement an idea/suggestion that came out of the PLN?

[realized value]

Think about what differences your participation has made to your ability to achieve what matters to you as you answer the following questions:

15. What aspects of my professional identity as a Pre-Service Teacher have been affected by my participation in the World Language PLN?
16. Did I save time or achieve something new?
17. Am I generally more successful now? In what ways?
18. What effect did the implementation of an idea have?
19. Did any of this affect some assessment metrics used to evaluate student performance in the classroom?
20. What have I, and my cooperating school achieved because of my participation in the World Language PLN?

[reframing value]

Think about how your participation in the PLN and subsequent reflections have changed your, or other stakeholders (CT, parents, students, other PSTs, etc.) understanding and definition of what matters?

21. Has the process of social learning via the PLN led to a reflection about what matters when teaching World Languages?
22. Has your participation and/or personal reflection impacted change in someone else (ex. Your CT, other PSTs, your PLT, etc.)?
23. Have you suggested new ways to present information to students, and/or evaluate students?
24. How has your new understanding affected those who have the power to define the criteria of success (ex: your CT, other teachers in the department, Department Chair, Principals, etc.)
25. Has this new understanding translated into institutional changes?
26. Has a new framework evolved or been created as a result of this new understanding?
Appendix B

**Interview Protocol**

**VALUE-CREATION INTERVIEW [conducted after survey is completed]**

Hello, my name is Karen Tharrington. I am a doctoral student at North Carolina State University. Thank you for taking the time to talk to me about your participation in the #Teach2Teach Twitter Chats this semester. This research is part of my dissertation in Curriculum and Instruction. By conducting this study, I am hoping to find out the value of participating in Twitter Chats for Pre-Service Teachers such as yourself. You have already filled out a survey which I will use to guide this interview. The purpose of this interview is to better understand how your participation benefited you as a pre-service teacher.

Before we start, I’d like to go over a few disclosures with you:
Your participation in this study is voluntary. You have the right to be a part of this study, to choose not to participate or to stop participating at any time.

This interview will be recorded so that I have a complete record of our discussion. Is that okay with you?

Do you have any questions before we begin?

There will be two parts to the interview. I’ll first ask you some questions directed to your overall experience of participating in the #Teach2Teach Twitter Chats. In the second half of the interview, I will use some guiding prompts to ask you to tell two specific stories of how your participation in this Professional Learning Network has created value for you. I’d like to hear about concrete examples of what you mentioned in the survey and the first part of the interview.

**I. Overall Experience**

You mentioned in the survey that your participation changed you in [x] way as a PST. Let’s delve into that a bit.

Have you acquired new skills or knowledge?
Has your understanding of the practicalities of teaching changed? What about your perspective on pedagogy and teaching practices or theories?
Do you feel more inspired by the work you do, or will be doing?
Do you feel more prepared to teach? How has your confidence level changed as a result of your participation in the Twitter chats?
You mentioned in your survey that your participation [changed/didn’t change] your social relationships. Tell me…
What access to new people did you gain?
Do you know them well enough to know they can contribute to your learning? That is, do you trust them?
Do you feel less isolated?
Do you feel you are gaining a reputation by your participation? In what way(s)?
What difference has participation in the chats made to your practice or context as a PST?
What new tools, methods, or ideas did you get from participation?
Do you have access to things you might not have otherwise had access to?
How has participation changed your ability to influence others? [see survey responses as a guide]
Has the #Teach2Teach PLN changed the recognition of what is expertise?
Have you acquired a new voice through your collective learning?

II. Stories of Value Creation
Thank you for your thoughtful responses. Now I would like to talk about significant events, moments of participation, and/or experiences you have had while being a part of the #Teach2Teach community and the five Twitter Chats. The purpose is to capture specific examples of how your participation has created value. A typical value-creation story has a sequence of four main steps and sometimes a fifth one. Step 5 is when an event or innovation changes the way that you define what matters, what constitutes success, and therefore what “value creation” is. You may not have had the opportunity to reach this step yet, as you have not begun teaching. That’s okay.

Activity: Describe a meaningful chat or topic and your experience of it.
Output: Describe a specific resource that these chats produced for you (ex: an idea, a tool, a document, etc.) and why you thought it might be useful.
Application: Tell me how you used this resource in your practice and what it enabled for you that would not have happened otherwise.
Outcome:
Personal: Explain how the chats affected your success (ex: being a better methods student, PST, job satisfaction, understanding pedagogy, etc.)
Organizational:

How has your participation contributed to the success of your future students?
How has participation helped you impact student learning?

**New definition of success:** Sometimes, such a story changes your understanding of what success is. If it happened this time, please tell me more about it. For example, do you have a new set of expectations for yourself or your future students when you begin your student teaching practicum? How will you approach participation in your school’s PLT?

*Wrap Up*
Thank you for taking the time to answer these questions and share your story. Are there any questions related to value participation in this PLN creates for you that I should have asked but did not?

Let me confirm your email on file [xxx@xxx.com] – is this correct? I will be sending you an Amazon Gift Card for $25 as a small token of appreciation for your time. I will also be sending you a summary of this interview after I have had the chance to review it. At that time, I’d like you to read through to make sure I have captured your thoughts and responses accurately. This will likely be in the early Spring semester.
Appendix C

A Priori Initial Code List

AV: IMPLEMENTATION (advice/solutions/insights)
AV: INNOVATION (new perspectives/ways of doing things)
AV: PLANNED IMPLEMENTATION
AV: SOCIAL CONNECTIONS (leveraging connections to accomplish a task)
AV: TRANSFER (using communities, networks, processes, etc. in other contexts)
AV: USE OF TOOLS
BELIEFS
IV - Affirmation
IV: COLLABORATION
IV: ENGAGEMENT (challenges of assumptions)
IV: ENGAGEMENT (intensity of discussion)
IV: ENGAGEMENT (length of threads)
IV: NETWORKING (new connections)
IV: QUALITY OF INTERACTIONS (bringing experience of practice into learning space)
IV: VALUE OF CONNECTIONS (frequency of interactions)
NOT ANSWERED
PV – IDENTITY
PV - SUPPORT
PV: CHANGE IN PERSPECTIVE
PV: CONFIDENCE
PV: INFO RECEIVED
PV: INSPIRATION
PV: NEW VIEWS OF LEARNING (interest in learning and leadership)
PV: PRODUCE TOOLS
PV: RELATIONSHIPS-CONNECT (social capital)
PV: REPUTATION OF COMMUNITY
PV: RESOURCES (tangible capital)
PV: Shared Learning
PV: SKILLS ACQUIRED
PV: TRANSFORMATION (learning capital)
PV: TRUST LEVEL
REAL -V Influence
REAL -V reflection
REAL-V - TIME SAVER
REAL-V ASPECTS (prof identity)
REAL-V EFFECT OF IMPLEMENTATION
REAL-V METRICS
REAL-V PERFORMANCE (using authentic resources)
REAL-V RELATIONSHIPS
REAL-V SUCCESS
REAL-V: ORGANIZATIONAL
REFRAME-V: ASSESSMENT PRACTICES
REFRAME-V: COMMUNITY ASPIRATIONS
REFRAME-V: NEW FRAMEWORKS
REFRAME-V: RELATIONSHIPS WITH STAKEHOLDERS (new sets of expectations)
REFRAME-V: INSTITUTIONAL CHANGES