Perceptions of Professional Development

in Virtual Communities of Practice

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Abstract

This research study attempted to understand the perceptions of educators who utilize social media and Web 2.0 tools to meet their dynamic professional development needs in one school district in southeastern Pennsylvania. It also examined the habits of connected educators who are collaborating with international colleagues. Thirty-one educators participated in this qualitative study to answer three research questions. The research data were collected using a survey, open-ended questionnaire, and phone interviews. The study indicated that educators are leveraging social media and Web 2.0 tools to collaborate and share professional practices. The study also found that many of the educators in this study sought out this alternative form of virtual professional development because of an internal drive to improve student achievement in their own district, schools, and classrooms.

Finally, I would like to take a moment to thank my beautiful wife Carrie for teaching me what it means to love. Popular culture typically defines love as grand visible gestures and displays of romance. True love is invisible and can be evidenced in the tired eyes of my spouse as she asks if there is anything else that she can do to help me through a long day. It is her understanding that graduate programs steal time and money from that which really matters, family. Thank you Carrie for always knowing when I need a hug.

## Dedication

This work is dedicated to my wife Carrie McGough, who provided love and support throughout the whole process, and to my two children, Gabriel and Caitlyn McGough, for making me laugh and remember what is truly important, family. I also dedicate this work to my mother and father, Michael and Christine McGough, who first taught me what it means to be a teacher.

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## Chapter One – Introduction

**Overview**

According to the U.S. Department of Education's (USDOE) Office of Educational Technology (2010), the economic future of the United States depends on the revolutionary transformation of public education through the widespread implementation of transformative technologies: social media sites, online communities, and/or Web 2.0 tools. This type of radical school reform requires educators to take an active role in the development and dissemination of *disruptive technology* innovations (Ruddy & Prusinski, 2012; USDOE, 2010). Grass-roots communities of practice that leverage everyday technology tools allow for innovation to take place in an antiquated public education system that relies primarily on passive instructional and assessment practices (USDOE, 2010). Additionally, teaching is a very human endeavor that calls upon teachers to situate their daily academic activities into organized practices within a community as a method of making sense of their professional world. The ubiquity of digital technology has allowed these communities to develop in not just local schools but across virtual platforms as teachers seek the counsel of other educators attempting to increase student achievement and learning outcomes.

Web 2.0 technologies allow for connected educators at the classroom level to communicate about and collaborate on ideas that can lead to increased student learning and growth (USDOE, 2010). Professional development activities are moving away from a centralized series of formal learning programs from an expert to a collaborative format where the collective knowledge and experience of participants drives innovative changes (Ruddy & Prusinski, 2012; USDOE, 2010). In this emerging, Web 2.0-inspired model,

master teachers naturally develop followers within specific areas or domains of practice because they possess the knowledge and skills to improve practice. A master teacher does not have to be a master in all domains and may revert back to an apprentice position in another subject area or domain. The transformation of education reform therefore, requires educators to take an active role in the development and dissemination of disruptive technology innovations (Ruddy & Prusinski, 2012; USDOE, 2011).

Cuddapah and Clayton (2011) proposed that the apprenticeship-style learning that is called for in active participation in virtual communities already naturally occurrs within two spaces of the traditional, face-to-face schools: formal top-down professional development and informal bottom-up or grassroots collegial collaboration. Involvement within these virtual communities calls upon individuals to apprentice or learn the language and actions of the community from one or more experienced master teachers (Lave & Wenger, 1991). It is through the daily practices of educators within the finite space of the classroom that a sense of support has developed for the schools' and districts' educational vision and mission statement (Cuddapah & Clayton, 2011). Lave and Wenger found that learning could be an improvised practice that alters the perceptions and actions of learners as they engaged in the actual practice of the knowledge and skills of their vocation. One example of this type of embedded learning is the apprenticeship of a student teacher under a skilled master teacher. It is only after this process is completed that the wider public school community accepts this new member to practice the art and science of teaching and become part of the wider school community of practice (Lave & Wenger, 1991).

Reform mandates from both the USDOE and various State Departments of Education have pushed local districts to implement reform measures that appear to be artificially forcing an alteration to the daily curricular practices of educators (Margolis & Doring, 2012). These outside forces have caused educators to adapt to changes by seeking out master teachers outside local schools. Cuddapah and Clayton (2011) state that the search for master educators within virtual communities occurred within has been termed a *third space*. Gulamhussein (2013) and the USDOE (2010) stated that there are three education reform initiatives that are shaping the professional development practices of the 21st Century: widespread adoption of tougher standards, teacher evaluations, and high-stakes testing. It is the collective impact of these outside forces that alters the day-to-day practices of teachers attempting to prepare students to be ready for a globally connected economy. It is imperative that teachers are prepared to meet these reform challenges with effective professional development programs that meet their specific classroom needs (Gulamhussein, 2013). The USDOE has determined that social media can, and should, be leveraged by school districts to supplement professional development practices in an age of high-stakes accountability (Gray, Thomas, & Lewis, 2010).

Researchers have agreed that not all professional development programs are created equal; however, some delivery models do promote a more significant change within the educational system (Desimone, 2009; Doren, Flannery, Lombardi & McGrath Kato, 2012; Matzat, in press; Shea & Bidjerano, 2010; Wei, Darling-Hammond, & Adamson, 2010). For example, Wei et al. used the National Assessment of Educational Progress (NAEP) data to select four states, Colorado, Missouri, New Jersey, and Vermont, to include in their study on the current state of 21st century professional

development. Most of the teacher professional development programs involved in this analysis succeeded in making teachers aware of impending changes, but the trainings failed to support educators in the crucial implementation phase of the change process (Wei et al., 2010). It is important to note that only 15% of participants were participating in collaborative work settings. This was half the number reported only a decade earlier in the findings of an earlier NAEP report. The researchers determined that collaborative practices around common goals were imperative for successful professional development (Wei et al., 2010).

The organization, delivery methods, and duration of the professional development training determine its overall effectiveness  (Gulamhussein, 2013; Harwell, 2003; Wei et al., 2010). According to the Schools and Staffing Survey (SASS) administered in 2008 by the National Center for Education Statistics, USDOE, the United States is still placing too much of its economic capital on funding the least effective professional development delivery method, the short-term, disconnected workshops (Wei et al., 2010). Wei, Darling-Hammond, Andree, Richardson, and Orphanos (2009) and Harwell (2003) defined effective professional development by its quantitative effect on two areas: improved teacher and student knowledge and skill-set development. This report was the second of a three-phase study, and the findings suggest that although more teachers are participating in professional development they are increasingly focused on the least effective models. Gulamhussein (2013) also concluded that the following professional development components were essential in programs offering effective professional development: active participation, modeling for initial exposure of skill or concept, and focus on content and grade specific material.  According to Wei et al. (2010), the

essential elements were not being fully utilized in any of the national sampling studies, which meant that reform measures for professional development programs must be implemented to increase overall effectiveness.

Professional development is a social practice where participants develop knowledge, skill sets, and concepts to improve their vocation (Harwell, 2003). Lave and Wenger (1991) sought to redefine learning as not just a cognitive process that occurs in the mind of the individual but rather situate it as more of a collaborative understanding reached within a social construct.  In this model, the learner is viewed as a legitimate peripheral participant who seeks out the expertise of masters within the community to learn the methods of communication and the rules of engaged participation. Lave and Wenger conceded that individuals have concurrent memberships in various communities of practice at a given moment in time. In the field of education, teachers situate the learning of their craft of teaching within the framework of the local community of teachers housed within their school. It is the need to be a more productive member of the learning community that drives teacher-learners to seek out advice from elder, more experienced, members in the community. Learning in this type of situated environment is not linear in nature; rather, it is a continual process that results in the dynamic growth of individuals and the community of practice as a whole (Lave & Wenger, 1991). It is this sociocultural framework of learning, borrowed from cultural anthropology, that will be utilized to understand the behavior of educators seeking out supplemental professional development opportunities through virtual communities of practice that developed in a social networking site, online community, or Web 2.0 tool (Lave & Wenger, 1991).

**Need for Study**

Since the publishing of the *A Nation at Risk Report* in 1983, public policy has

focused on changing the nature of public education to raise student performance on

standardized assessments, yet achievement among students has been affected very little

because the focus of reform has not been realized at the classroom level. (Harwell, 2003).

The findings of Harwell suggest that sustained professional development offered by a

blend of face-to-face and online professional development offer a superior model to one-

time workshop events. The difficulty with a top-down approach to school reform is one

of perspective. Institutions charged with providing professional development typically

tend not to focus on the creation of context or provide the proper supports to foster a

community around changing the instructional and assessment practices at the classroom

level (Harwell). The first of three research reports focused on professional development

programs in the United States, *Professional Learning in the Learning Profession: A*

*Status Report on Teacher Development in the United States and Beyond* (Wei et al.,

2009), found that the United States needed to focus research efforts on determining which

professional development activities improve teacher practice and ultimately student

achievement. Instead of being part of the process and empowered to make sound

professional decisions that were in the best interests of the students, teachers were often

treated as broken elements of a larger system that must be fixed by outsiders or removed

(Dunst & Raab, 2010). An invisible network of professional development is occurring

within public schools and district administrators need to understand the flow of

information before they can hope to harness it for revolutionary school reform.

Harwell (2003) stated that the focus must shift to a professional development model that makes the teacher part of the solution rather than something to be changed or altered. Harwell suggested that the last twenty years of face-to-face professional development has made little progress in changing the everyday practices of teachers. Harwell recommended that teachers need job-embedded and ongoing access to professional development that can now be fully realized with the ubiquitous nature of digital media platforms (Harwell, 2003). The fast-paced innovative progress of digital technologies requires a different type of professional development model that allows for focus on content-centered pedagogy and asynchronous participation by adult learners that is a communal process that leads to a culture of development (Gulamhussein, 2013; Harwell, 2002; Schlager, Farooq, Schank, & Dwyer, 2009).

Picus and Odden (2011) stated that public school districts are experiencing budget crises because of a decrease in financial funding as a result of a continual regression of the U.S. economy. Because of economic concerns and the mandates for increased student performance, districts are expected to implement creative solutions using technology innovations that will ultimately lead to increased student performance (USDOE, 2010). Picus and Oden further recommended that districts should conduct studies of their per teacher spending on professional development. Picus and Oden cited an earlier study (Miles, Oden, Archibald, & Fermanich, 2004) that found the average spending at about $8,000/year per teacher. Schools should assess their per teacher funding for professional development and then reallocate the funds to a more cost effective and efficient system that leads to increases in student achievement (Picus & Oden, 2011).

In 1989, Tim Berners Lee started the World Wide Web with a vision of a collaborative space that would allow for the capacity of users to collaborate by reading and writing on a digital platform (Richardson, 2010). In the early days of online computing, collaboration was limited, at best, to users reading content that was uploaded by a select few. The flow of information was in one direction and did not allow the user of the content to have any input or response (Richardson, 2010). As technological advancements have placed mobile devices into the capable hands of the masses, the Internet has developed into a collaborative community of users with the ability to share their own unique works with others. It was now possible for the classroom teacher to place random musings and questions online. The collaborative capacity of the Internet has been realized by a read/write web that allows individual users to actively create and post original content rather than just passively reading information and data (Richardson, 2010).

For the purpose of professional learning of improved teaching practices, Smith and Sivo (2012) explained that individuals could find dynamic communities of online learners to participate in the sharing of resources or discussions. Richardson (2010) stated that in order to be a successful educational professional working in the 21st century, one must be willing to adapt to having an online life. Those teachers who have the ability to use technology will be able to work with students who developed hypertext minds; students who have the capacity to handle large amounts of data and quickly jump from subject to subject (USDOE, 2010). As a result of this creative and collaborative set of online tools, educators must be willing to open up the potential for digital literacy in

formal education settings as well as the informal online components and courses (Richardson, 2010; USDOE, 2010).

The technology tools of the 21st century have reshaped the ways that teachers and students learn, interact, and retain information (Renninger, Cai, Lewis, Adams, & Ernst, 2011). Vanwelsenaers (2012) stated that the NetGeneration is comprised of individuals who prefer to have instant access to information and learning situations that are more active rather than a passive, lecture-style. In order to teach students the 21st century skills that they need to live and compete in the global economy of the modern century, education institutions should be using modern tools and not 18th century instructional and assessment practices (Gulamhussein, 2013; USDOE, 2010). Bring your own device (BYOD) programs have created a positive learning environment for the learner and classroom teachers must be prepared to make the transition to a digital learning environment (Dede, Ketelhut, Whitehouse, Breit, & McClosky, 2006; Renninger et al., 2011). A new style of professional development for teachers and staff is critical to the BYOD program succeeding or failing in a district (Vanwelsenaers, 2012).

In the second decade of the 21st Century, a multitude of external forces are attempting to reform public education and interrupt the process of traditional instruction and assessment for a more learner-centered approach of development (Gulamhussein, 2013). Many of these reform initiatives are part of a formalized hierarchy of government influences (at the local, state and federal levels) that use outside pressures and top-down management models to change the instruction and assessment practices of individual classroom teachers (Dash, Magidin de Kramer, O'Dwyer, Masters, & Russell, 2012). Gulamhussein (2013) stated that the recent adoption of the Common Core State

Standards (CCSS) in 46 states placed constructivist-teaching practices at the center of the reform movement. Individual students are expected to construct meaning of their world by problem solving and developing deep, critical thinking skills in the areas of mathematics and literacy (Gulamhussein, 2013). High-stakes, standardized assessments and teacher evaluation systems tied to these learner-based outcomes are just two of the many government-funded measures that schools are using to hold both teachers and students accountable for their learning and development (Gulamhussein, 2013). Ostashewski and Reid (2010) found that the implementation of any progressive model of teaching required a teacher training system that supported teachers using a learner-centered professional development system that provided dynamic learning experiences and embedded practitioner support through the implementation process. Further research must be conducted on virtual professional development practices of classroom teachers so that districts can leverage these new delivery tools to meet the academic needs of students (Dede et al., 2006; USDOE, 2010).

Borko, Whitcomb, and Liston (2009) acknowledged that there is a very limited knowledge base in the field of digital literacy and teacher professional development. Although very little research existed at the time in the use of informal social networking to solve classroom issues and problems, there does exist a hidden movement of connected teachers who have leveraged social media to meet, discuss, and share classroom practices. Schlager and Fusco (2003) called for research that identified the design and implementation features that have had the greatest impact on supporting a positive change in teaching practices. Outside the formalized professional development model teachers are seeking a bridge between the educational theory of their district's reform

initiatives and the impact of student learning. This grassroots teacher collaboration model grew from a desire for teachers to solve problems within the classroom by communicating with their peers from across international boundaries (Schlager & Fusco, 2003).

The ubiquity of digital technology and its power to transform nations into one global community are placing a greater emphasis on implementation of the latest technology initiatives into U.S. school systems (USDOE, 2010). The Horizon Report (Johnson et al., 2013) outlined the international trends in computing that were thought to have the most profound impact on learning. The report was updated to feature the six technologies that were predicted to have the most widespread impact on education. In the near term, the two technologies that appeared to have the greatest potential to transform the way students learn was cloud computing and mobile learning through participation in social networking sites, online communities, or Web 2.0 tools (Johnson et al., 2013). Students would only benefit from this type of innovation if they had teachers who were willing to participate in ongoing, job-embedded technology training. It is not simply just recognizing and understanding that the technology exists. According to Gulamhussein (2013), it is the implementation phase of learning a new teaching strategy or technology that has had the steepest learning curve. Most face-to-face professional development models make participants aware of new technologies and give a cursory overview; the presenter then moves on to another district and leaves teachers unsupported in the implementation (Gulamhussein, 2013). As a result, the new initiative is never fully realized because the support fails during the most crucial part of the learning process, implementation (Gulamhussein, 2013; Schlager et al., 2009). A blended model of face-to-

face and online professional development would provide the classroom teacher with the most effective model for enacting true reform measures (Harwell, 2003).

**Statement of the Problem**

The pace of innovation and change facing public education is increasing at such a rapid rate that the mandatory, static professional development opportunities provided by districts do not meet the dynamic needs of the 21$^{st}$ Century classroom teacher. There is a significant body of academic work about research and evidence-based instructional practices and formal and informal professional development practices delivered in a face-to-face format (Desimone, 2009; Doren et al., 2012; Matzat, in press; Shea & Bidjerano, 2010; Wei et al., 2010). However, there is very little research on the phenomena of informal professional development habits of classroom teachers who are leveraging social networking sites, online communities, or Web 2.0 tools (Moran, Seaman, & Tinti-Kane, 2012; USDOE, 2010). Section 2422 of the Elementary and Secondary Education Act (ESEA), required the Secretary of Education to publish a national plan for the implementation of technology in education (USDOE, 2010). Subsequently, the National Education Technology Plan (NETP) 2010 called for a radical and revolutionary shift in the integration and infusion of digital technologies in public schools. The everyday technology devices and applications that have transformed so many other industry models must be leveraged to promote students' achievement and close the achievement gap among all students (USDOE, 2010).

The phenomena of teachers developing communities of practice to meet personal professional development needs and goals is not a new trend; teachers have always solved classroom issues and concerns through informal, face-to-face peer collaboration

(Gulamhussein, 2013; USDOE, 2010). However, with the use of a virtual community of practice teachers can connect with a base of master teachers from the wider world community. This virtual professional development practice is naturally occurring within schools, in varying degrees, across the United States (Boyd, Golder, & Lotan, 2010; Donavant, 2009; Forte, Humphreys, & Park, 2012; Gray et al., 2010 & King, 2011). Garet et al. (2010) conducted a research study on the impact of corporate-sponsored professional development on student achievement using a study sample of 195 seventh grade math teachers working in 77 different schools that were separated into 12 districts. The teachers within the treatment group were provided approximately 45 hours of professional development in the form of a summer institute and job-embedded professional development support throughout the school year. The control group received much less training and support. The findings were mixed which led researchers to posit that more research must be conducted to determine those professional development practices that have the most benefit in raising student achievement (Garet et al., 2010).

**Definition of Terms**

*Achievement gap.* The noticeable disparity between different social and ethnic groups of students' performance based on social and academic performance measures like standardized exams scores, drop out rates, grades, course selection, and college completion rates (Editorial Projects in Education Research Center, 2011).

*Apprenticeship-style learning.* A sociocultural theory of learning wherein an expert with on-the-job experience in a particular area of academic/career study guides a neophyte to move from an outsider to a fully functioning member of the community of workers (Crafton & Kaiser, 2011).

*Asynchronous communication.* An online discussion forum that is usually moderated by one or more educators who establishes a conversation around an issue or theme with a dedicated discussion thread that allows for participants to contribute on their own time rather than be in attendance with the other digital voices (USDOE, 2011).

*Blog.* A Web 2.0 technology that allows passionate researchers and writers to editorialize on self-important issues by making a grand statement or strong opinion in an effort to develop a following of like-minded individuals and influence change (USDOE, 2011).

*Communities of Practice (CoP).* A network of dedicated professionals who rely on the give and take contributions of others to implement innovative solutions and ideas. These communities exist so that individuals can benefit from the collective knowledge and experience of the group (Glazer & Hannafin, 2006).

*Connected educator.* An educator who uses Web 2.0 technologies and online platforms to leverage the best resources and collaborative voices in an effort to transform and improve practices within the teaching and learning domain (USDOE, 2011).

*Connectivism.* A virtual model of learning that allows the individual the freedom to partake in learning asynchronously through mediated network connections (Siemens & Conole, 2011).

*Crowd sourcing (collaborative spaces).* This collaborative process allows users and participants to pull on collective knowledge, experience, and resources to develop public access documents that advance the field and practice under investigation or study (USDOE, 2011).

*Disruptive technology.* The implementation of innovative technologies to alter the process of the established system by allowing collaboration on a scale that is larger than the system itself (USDOE, 2010).

*Embedded learning.* A mutually beneficial relationship where the mentor and the protégé are both impacted by the reciprocal relationship (Crafton & Kaiser, 2011).

*Epistemic-engagement.* In a technologically-mediated setting, individual learners have a heightened commitment to the group to develop and build common knowledge and skills (Larreamendy-Joerns & Leinhardt, 2006).

*Google document.* A specific, web-based application that allows a single user to connect with multiple users in the production and editing of a single shared online document. This open-source package allows for free, large-scale development of materials and documents for the dissemination of information (USDOE, 2011).

*In Vivo coding.* This is a form of coding research where a direct quote is harvested from the participant and is used to develop themes (Saldana, 2009).

*Legitimate peripheral participation.* A novice, who is attempting to learn a new skill or concept, remains on the edges of the group participation to observe the behaviors and communication practices of the members. Once the perceived interactions are observed and the participant understands the social constructs of the group, the individual can begin limited participation (Lave & Wenger, 1991; Wenger, 1998)

*Master teacher.* An individual who engages in a unidirectional learning process where they share their experience in the field with the novice in an effort to forge a collegial bond and promote positive change within the organization (Crafton & Kaiser, 2011).

*Online Teacher Professional Development (OTPD).* A professional development program delivered via a virtual medium. This medium allows for a social environment where participants are encouraged to share materials and ideas and are supported during the implementation of innovative classroom practices (Dede et al., 2006).

*Professional Development.* "…a comprehensive, sustained, and intensive approach to improving teachers' and principals' effectiveness in raising student achievement" (Wei et al., 2010).

*Social Networking Site.* A platform that allows individuals to collaborate with online communities while retaining the power to control when and where the learning will occur (Anderson, 2006).

*Third space.* A virtual space that allows individuals, on equal professional status, to troubleshoot and problem solve without interference from those in positions of authority (Cuddapah & Clayton, 2011).

*Twitter (micro-blogging).* A public-space form of instant messaging that allows users to connect and collaborate with others who are interested in similar topics of conversation. The posts are usually organized by topic using a hashtag marker that indicates the theme or topic of the asynchronous conversation thread (USDOE, 2011).

*Virtual artifacts.* The data and files that result from participation in online research or collaborative practices that can be translated to actual physical documents to inform practice (USDOE, 2011).

*Virtual Community of Practice.* Mobile-optimized platforms that enable asynchronous communication and collaboration for individuals who share common professional ideals and goals (USDOE, 2011).

*Web 2.0.* The second generation of web-enabled resources that enable users to produce content and share across platforms and programs (USDOE, 2011).

**Limitations**

The qualitative data collection methods of survey, open-ended questionnaire, and phone interview offer observations and perceptions into the descriptive practices of educators around usage of social media for professional development. Atieno (2009) stated that this methodology of data collection deals in perceptions and as such is open to interpretation by both the participants and the researcher when attempting to explain the event(s) in question. Through inductive reasoning, these subjective data pieces must be analyzed and grouped according to common theme. It is the development of an overall theory about why these perceptions exist that leads to a descriptive theory of the participants within a specific research location. Qualitative researchers succumb to human nature and place their own biases and assumptions into the development of the themes that emerge (Atieno, 2009).

The use of surveys, questionnaires, and phone interviews may be accurate in describing the human activity and perceptions of a particular phenomenon, but they fall short when considering the reliability when attempting to explain the relationships between complex variables and human systems (Atieno, 2009). For this study, the sample group was from a rural, public school district, and the results do not adhere to the strict guidelines of research validity because they are not generalizable to other demographics or geographic areas (Atieno, 2009; Marshall & Rossman, 2006). This research study was also conducted within a short timeframe, which limits the inclusion of the most recent research articles. The research subject of social media participation is a uniquely private

endeavor and may have limited the research sample because of the stigma that is often associated with participation within a school setting (Atieno, 2009).

**Research Questions**

This qualitative study investigated the perceptions of connected teachers about the impact of Communities of Practice (Glazer & Hannafin, 2006; Lave & Wenger, 1991) on social media as a problem-solving platform. As declared by Atieno (2009), qualitative studies descended from anthropological fieldwork analysis, which allows the researcher to observe the phenomenon in its natural environment and describes how the event was perceived by the participants.

The following questions were posed:

1. How are teachers using social media platforms to develop Virtual Communities of Practice (VCoP) that are leveraged to solve perceived problems at the classroom level?

2. What are the social media habits of K-12 educators attempting to build a virtual community of practice?

3. How does a classroom teacher's social media participation in an online Community of Practice affect his/her everyday teaching practice?

**Summary**

Educational reform initiatives can only be realized by the effective professional development practices of school districts. It has been a long-held practice to mandate training in negotiated agreements and force top-down, presenter-focused seminars to staff as a means to increase their knowledge base of current reform initiatives (USDOE, 2010). The difficulty with this type of expert-centered training is that it falls short in the

implementation phase of the initiative. The teachers are made aware of the issue or skill, but sustained, content-specific support during the implementation of the new strategy is usually not as strong as the introductory workshops used to bring awareness to the faculty and staff (Harwell, 2003). Connected teachers have formed communities of practice in digitally-mediated environments to help solve the issues and dilemmas of implementation. This collaborative community allows the teacher to use trial and error and reflect back to the collective community of practice to seek answers and develop solutions (Harwell, 2003). The purpose of this qualitative study is to examine the hidden practices and perceived impact of online social media participation on daily teaching practices while borrowing some research instruments from digital ethnography (Schlager et al., 2009; Wesch, 2007). Participants in the study identified those factors that led to collaboration on social media platforms to solve classroom issues and participate in informal professional development (Forte et al., 2012; Schlager et al., 2009). Specifically, the self-perceptions of connected educators within a building was studied to determine the extent to which their (a) teaching style, (b) experiences and practices, and (c) self perceptions on goal development are impacted by collaboration on social media sites. The research findings and implications of this study might add to the total body of research that is summarized in Chapter Two.

**Chapter Two - Literature Review**

**Introduction**

Twenty first century American education reform initiatives are so dynamic in nature that individual educators are differentiating and supplementing their professional development by turning to virtual communities of practice and Web 2.0 tools (Hanreaets, Hulsebosch, & de Laat, 2011; Mancusa, Chlup, & McWhorter, 2010, Matzat, in press; Shea & Bidjerano, 2010; USDOE, 2010). The limited amount of time and resources that educators have to develop plans and accommodations for these new reform measures are forcing teachers to look for differentiated models of professional development (Hanreaets et al., 2011, Mancusa et al., 2010). In 2009, the USDOE announced a technology plan that called upon school leaders to embrace teachers who were leveraging everyday social media technologies, online communities of practice, and Web 2.0 tools to develop the professional practices necessary for 21st century learning (USDOE, 2010). These virtual professional development initiatives are so recent a phenomenon that there has been limited longitudinal data collection on the impact of these virtual communities of practice on teacher effectiveness ratings or student learning outcome measures. Hanreaets et al. (2011) interviewed early adopter, professional development trainers using a blended approach: online and face-to-face. They made five recommendations for future implementations: non-directive attitude, self-organization, intensive coaching, balance of online and face-to-face, and legitimate participation (Hanreaets et al., 2011).

The purpose of this literature review is to research not only the modern professional development practices from 2009 to the present but also to determine the informal habits of teachers using virtual communities of practice to meet individual

professional development needs. The literature review analyzed and synthesized the results of primary research studies focused on face-to-face, traditional professional development practices at the district level and included those professional development practices that occur within formal, online/networked environments. Finally, the researcher explored the natural development and role of virtual communities of practice as they impact the individual educator.

**Theoretical Underpinnings: History of Communities of Practice (CoPs)**

The origins of communities of practice emerged from the works of cultural anthropologists Lave and Wenger (1991). Lave and Wenger examined apprenticeship-style learning where individuals learned a set of trade skills by working alongside masters of the trade that they wanted to enter. According to Lave and Wenger, adults learn with greater ease and comprehension when content is presented in an authentic manner that most closely resembles real-life situations (Lave & Wenger, 1991). When learning is situated in the authentic environment of the practice, learners tended to pick up and retain the new knowledge and skills faster. Lave and Wenger determined that the social aspect of learning begins when an individual started the induction process of becoming a participating member of the community by observing the communication and practices from the edge of the social group mainly as an observer, legitimate peripheral participation. What makes this practice legitimate is the purposeful nature of the learner to mimic the behavior and observed traits until s/he is able to adapt to the new community and enjoy full membership and participation. As knowledge, participation, and sharing increases, the learner becomes more actively engaged within the group by developing unique communication patterns and information sharing. The ability of the

participant to collaborate and share new information determined his or her status within the organization (Lave & Wenger, 1991).

For example, Lave and Wenger (1991) studied the apprenticeship practices of the Vai and Gola tailors of Liberia and found that the learner, who was typically a child, began by learning the rudimentary practices and crafts of the individual family unit. As local economic and social demands called for different labor skills within the organization, the learner moved to other inter-related communities to develop a diversified set of new practices. When entering into a new community, the learner was active in the periphery of participation as s/he observed the master at work. Learning was situated in the day-to-day activities of an actual tailor and was usually organized in reverse order. Lave and Wenger further indicated that what distinguished one as a legitimate periphery participant rather than commoditized labor was that s/he was made to feel a part of the overall community of practice. The young apprentice first learned how to finish the garment to develop a gestalt understanding of the entire process. As the young apprentice learned and adapted to the established community, the skill set developed and the learner participated more fully and was more invested in the process leading up to the final product (Lave & Wenger, 1991).

The development of the community of practice of a public school faculty was similar in nature and development to the family units in the Lave and Wenger's (1991) Liberian study, that inspired the original theory of communities of practice as a social learning structure. As was the case in the earlier studies (Lave & Wenger, 1991), economic and social demands are pressing change and adaptations in the type of teaching and assessment practices being carried out by the Virtual Communities of Practices of

connected teachers (USDOE, 2010). The difficulty with studying the professional

development practices of schools with the apprenticeship model is that the phenomena

develops uniquely within and between groups as they adapt to stay viable in a dynamic

and ever-changing world (Lave & Wenger, 1991; Ruddy & Prusinski, 2012; USDOE,

2010).

Technology integration into daily life is changing the social, economic, and

political demands on the modern high school graduate. In an effort to reform education to

help students meet these new challenges, the National Governor's Council developed a

consistent set of standards titled the Common Core State Standards (USDOE, 2010). As

with the implementation of any large-scale reform initiative, one of the most important

factors in ensuring success is the successful execution of professional development

(Achieve, 2010). The concept that public schools can improve through systematic and

incremental professional development change was codified in the landmark education

bill, No Child Left Behind (Anderson & Kumari, 2009). Traditional, face-to-face

professional development training starts with a series of formalized learner goals, in the

form of district and school mission statements, that the school pre-selected to focus on

and then standardized training models were implemented because of ease and cost

effectiveness (Matzat, in press). Darling-Hammond, Chung Wei, Andree, Richardson,

and Orphanos (2009) stated that most of the professional development offered to teachers

is a string of occasional workshops that are standardized across content areas with

participants having to use their imaginations to make connections to actual classroom

practices. According to Darling-Hammond et al. (2009), of the three million teachers in

the United States, 90% reported having undergone at least some formalized form of

professional development and most of these teachers also reported its relative ineffectiveness to bring about lasting change in everyday, teaching practices.

In a technology-driven world where differentiation is the norm and not the outlier, individuals do not have to settle for generic models that fall short of their intended goals (Achieve, 2010; Matzat, in press). The difficulty with traditional professional development models is that they are based upon established goals driven more by theory development than by practical application (Ruddy & Prusinski, 2012). Educators reported that the impact of this type of professional development was limited in its ability to create actual change within the existing educational model (Darling-Hammond, et al., 2009). Furthermore, Means, Toyama, Murphy, Bakia, and Jones (2009) conducted a meta-analysis of 1132 studies, from 1994 through 2006, where face-to-face versus online professional development were analyzed and contrasted. The research field was limited to studies that fit the criteria of experimental and quasi-experimental design. One of the key findings of this meta-analysis was that participants who learned in online situations performed modestly better than their traditionally taught counterparts. Another finding was that when online components were combined with face-to-face instruction the overall effect size was higher for learners. The most important finding to develop out of this particular meta-analysis study was that very few research studies have been published concerning the quantitative effectiveness of online learning for K-12 students (Means et al., 2009). As the nation turns to online learning to meet curriculum demands and student needs, researchers need to locate and implement those delivery methods that have the biggest academic impact on student achievement. The teachers who are expected to carry out the teaching of online learning have to adapt to the similar virtual

framework for learning for professional development practices (Fishman et al., 2013; Smith & Sivo, 2012; USDOE, 2010).

Lave and Wenger's anthropological research (1991) in understanding the development and activity of communities of practice can be utilized as a theoretical framework to analyze virtual communities of practice. As stated earlier, Lave and Wenger (1991) suggested that apprenticeship or the development of a professional self calls upon the learner to actively participate in the day-to-day habits and practices of the community. Lave and Wenger defined community of practice as "participation in an activity system about which participants share understandings concerning what they are doing and what that means in their lives and for their communities" (p.115). Lave (1996) contended that all learning is situated in a community of practice and that learners make sense of their individual worlds by developing a context for their learning from the actions of the group at large. This type of learning involved the dynamic transformation of the learner into another identity. It is the transformative nature of the situated learning task that motivates an individual to participate within the community of practice (Lave, 1996).

As the nation began to examine the power of virtual collaboration using digital technologies, Wenger (1998) researched the social learning model termed *communities of practice* to develop a framework and determined a set of defined characteristics that would allow the theory to expand beyond the academic disciplinary boundary of cultural anthropology.  He asserted that a learner developed identity through various inter-related social interactions within the field of practice. The Wenger model "consisted of four interrelated components—community, practice, meaning, and identity" (p. 64). The

community was a mutually agreed upon group that was connected under a common practice that made meaning of lived experiences and developed a unique group identity apart from others in the same field. According to Wenger, a community of practice also shared three basic elements among community members: a common interest, the community, and the actual practice itself. The community must interact on a frequent basis and be working toward common goals through collaboration and shared communication. Wenger also defined two types of connections that help to bring cohesion to a community of practice: brokering and boundary objects. Brokers were those individuals who were members of simultaneous communities of practice and helped to link the other members together. The collective efforts of the group usually resulted in learning artifacts or boundary objects that impacted one's professional practice. For example, boundary objects were defined as those learning artifacts, such as articles, blogs, and texts, that are used to direct the efforts of the group (Cuddapah & Clayton, 2011; Wenger, 1998). Wenger's studies of the social learning model termed communities of practice could be used to understand the communities of practice that are forming in virtual spaces online (Cuddapah & Clayton, 2011).

The natural development of communities of practice has become more prevalent because of the interconnectedness of the world through Web 2.0 tools/technologies (Gulamhussein, 2013; USDOE, 2010). Wenger, McDermott, and Snyder (2002) contended that communities of practice were defined as "groups of people who share a concern, a set of problems, or a passion about a topic and who deepen their knowledge and expertise in this area by interacting on an ongoing basis" (p. 4). For an example of the types of communities of practice that were forming in virtual spaces, Hemphill and

Leskowitz (2013) studied the counterculture movement of young political radicals

identified as "Do It Yourselfers" (DIY). Those individuals who bought into the cultural

norms of this particular community wanted to live a life without wastefulness. Their

cohesion as a group was a result of wanting to conserve natural resources for the

betterment of the environment. This community of practice moved individuals from

legitimate peripheral participation, involvement at this stage usually means non-

participatory engagement on the edges of the activity, into a more complete participatory

position using online channels for the transfer of knowledge. Although not directly

related to the field of formal education, this type of informal training could be used to

understand the transfer of knowledge occurring within virtual environments. Although

not formally schooled in living off of the grid from more traditional schooling venues, the

knowledge base of participants was consistent and all noted that they appreciated the

differentiation of instruction that was made possible through the virtual community of

practice.  DIY community members, who participated in this lifestyle, lived off of the

throwaways of others in the community. They ate from dumpsters and recycled items to

meet their living needs and demands. A key finding of this study was that when adult

learners determined their individual learning needs, they sought out collaborative

experiences where they could learn the intended concepts and skills (Hemphill &

Leskowitz, 2013). As in Lave and Wengers' (1991) original study, novices sought out

experts to learn from and slowly work themselves into a position wherein they could pass

on experiential knowledge to the next group of novices. Although not formally schooled

in educational theory, many respondents recorded comments that heralded the need for

public schools to focus more on this type of learner-centered curriculum (Hemphill &

Leskowitz, 2013).

**Elements of Effective Professional Development**

Historically, professional development practices have been analyzed to determine

their relative effectiveness or ineffectiveness based on the ability of the activities to cause

an organization or group of people to move in a positive direction (Sun, Penuel, Frank,

Gallagher, & Youngs, 2013). Many researchers researched those elements, environments,

and methods that lead to effective professional development (Barrett, Butler, & Toma,

2013; Desimone, 2009; Doren, et al., 2012). According to Desimone (2009), effective

professional development needs to take the teacher's day-to-day problems into

consideration when developing the learning goals and collaborative programs. Doren et

al. (2012) found that effective professional development is non-standardized and meets

the needs of the specific participant group.  When learning how to develop college and

career transition goals for students with individual education plans, professional

development programs that were targeted to the differentiated needs of teachers resulted

in the most student improvement gains (Doren et al., 2012). The specific model that was

utilized in this research site was job-specific, collaborative, and on-going in nature

(Doren et al., 2012). Therefor, it is important for professional development support to be

provided at the implementation phase of the process (Gulamhussein, 2013).

Professional development programs need to take individual teacher concerns into

consideration during the design and implementation phases (USDOE, 2010). Ruddy and

Prusinski (2012) selected 38 schools based upon their Title 1 status under the Elementary

and Secondary Education Act (ESEA). Even though all 30 schools in Indiana used

funding to promote professional development and 90% of principals reported that the

staff received professional development on data interpretation, many teachers were found

to be data rich and information poor because they were not able to move beyond quick

one-shot workshops that resulted in a fragmented view of the information(Ruddy &

Prusinski). Ruddy and Prusinski found that when face-to-face professional development

programs took teacher input into consideration and then differentiated professional

development to meet the ongoing needs of these classroom teachers the implementation

process for new initiatives was faster and more effective. This was particularly true when

it concerned the implementation of technology initiatives. Ruddy and Prusinski also

found that the three most common elements of effective professional development were

supportive sustainability, effective data-analysis, and collegial collaboration.  The

researchers recommended that high quality monitoring should be considered to insure

that professional development impacts student achievement. Finally, Ruddy and

Prusinski called for the creation of professional learning communities to enhance staff

acceptance to rapid changes in district protocols. The evidence for differentiated staff

development that is sustained over time is necessary for successful professional

development to create lasting change (Ruddy & Prusinski, 2012).

The concept of collegial communities being utilized for professional development

purposes was researched by Jacquith, Mindich, Wei, and Darling-Hammond (2010);

USDOE (2010); and Ruddy and Prusinski (2012). Jacquith et al., (2010) conducted a case

study of the policy frameworks for the professional development landscape of four states:

Colorado, Missouri, New Jersey, and Vermont. In this study, all four states exceeded the

national average on the NAEP (National Assessment of Educational Progress).  All four

states also leveraged collegial strategies as a delivery method for professional learning. The following elements of effective instruction were related to a change in practice that benefited students: ongoing, intensive professional learning, connected to practice and school initiatives, professional learning focused on academic content, and professional learning designed to build a strong sense of collegial relationships (Jaquith et al., 2010; USDOE, 2010):

The National Staff Development Council now known as Learning Forward (2011) recommended that effective staff development must provide educators with the knowledge and skills to collaborate. When professional development activities achieved consistency with district goals, teachers felt better prepared to meet higher levels of student inquiry needs (Penuel, Fishman, Yamaguchi, & Gallagher, 2007). Penuel et al. (2007) also determined that coherence, knowledge of pedagogy, collective participation, and reform-like professional development all had positive impacts on real and lasting change in classrooms.

**Teacher motivation and satisfaction.** When considering teacher reflections about professional development, it is important to examine the perceptions of teacher self-efficacy based upon their ability to adapt to meet the demands of their specific problems and needs (Avalos, 2011; Brown & Woods, 2011). Brown and Woods (2011) found in their study that a multi-component online professional development model led to greater teacher, as learner, ratings. Similarly, Wei et al. (2009) studied the culture of teachers in other countries, who reported high achievement scores, and found that high levels of individual teacher motivation led to collegial collaboration around common curricular issues, which was one of the staple delivery methods of professional

development. Although, Darling-Hammond et al. (2009) determined that 90% of teachers

reported participating in professional development activities, the majority felt that it did

not adequately meet participant expectations for practical application.  Wolff,

McClelland, and Stewart (2010) also gathered and surveyed the responses of 5,588

teachers and found a significant relationship between the school's status of Adequate

Yearly Progress (AYP) and the teachers' perceptions of professional development

concerning the understanding of instructional strategies and technology implementation

and integration into the curriculum. The lower the AYP score the higher the motivation

for the implementation of improvement strategies. Teachers who saw a tacit need for

improvement based upon gathering valid data were more motivated to participate in

professional development activities (Wolff et al., 2010). Furthermore, Barrett et al.

(2013) also found that the motivation of participating teachers in selecting professional

development programs determined the ultimate effectiveness of the outcomes. In their

study, the most ineffective teachers were the ones who were most likely to opt into on-

going professional development (Barrett et al., 2013).

   In a meta-analysis of research studies conducted over a 10 year time period,

teachers reported higher levels of satisfaction with professional development training

when the content was differentiated to fit their specific needs and expectations (Avalos,

2011). Kaiser, Rosenfield, and Gravois (2009) also studied teacher perceptions and

perceived outcomes of teachers involved in the Instructional Consultation (IC)

professional development model. "This model was characterized by a collaborative

problem-solving process to address both academic and behavioral referral concerns of

teachers" (p. 446). The singular goal of this model focused on increasing teacher skill

development in instruction and classroom management. One of the major components of this program was a collaborative community that used perceived problems to focus decision-making processes. Teachers who participated in the study reported a higher satisfaction with the IC professional development model. In fact, 86.1% of the teachers reported that the trainings met or exceeded their expectations. After successful completion of IC services, teachers reported that they were more confident in their data-driven decision making in solving classroom issues and meeting the needs of all students. At the conclusion of the study, teachers felt an increased ability to use data-driven decisions to solve problems and implement successful teaching practices (Kaiser et al., 2009).

Furthermore, Penuel et al. (2007) studied the effects of multiple professional development models used to train 454 science teachers to understand the impact of their ability to implement the new program. Penuel et al. determined that classroom teachers found legitimacy in professional development programs run by current classroom teachers who discussed practical solutions to curricular and behavior problems steeped in experiential trials. Dunst and Rabb (2010) called upon 255 early childhood educators from 26 states to participate in a professional development effectiveness study. The respondents participated in one of three different professional development trainings: conference-style presentation, lecture-style workshops, and on-site intensive training. The on-site training model was judged as being the most beneficial in changing teacher's daily practices and ultimately providing higher levels of teacher satisfaction because of higher levels or engagement (Dunst & Rabb, 2010).

**Duration of professional development.** The duration of professional development has been reported as a defining factor in the success of the implementation of the concepts or skills covered (Gulamhussein, 2013; Sun et al., 2013). Gulamhussein found that the duration of professional development activities must be significant and ongoing. Sun et al. also found that longer duration of contact hours in professional development promoted a higher willingness to provide on-going help to colleagues. Collegial groups diffused information, over an extended period of time, if participants were exposed to active and engaging professional development. This ongoing professional development became part of the daily habits of the learning community. Effective professional development programs promoted changes in teaching practices by sustaining collegial community practices among teachers during the implementation phase. It was only through sustained influences that instructional changes were fully realized (Sun et al., 2013).

Although some studies found positive correlations with effectiveness and duration of professional development, other researchers found neutral or even negative results when duration of professional development activities was on-going and long-term (Doren et al., 2012). Doren et al. studied special education teachers who were undergoing professional development for the writing of academic and transition goals for students with individual education plans (IEPs.) The researchers determined that the amount of professional development had little impact on the writing of academic or career goals in special education. The special educators, in this study, wrote similar goals despite the time spent in professional development (Doren et al., 2012). Penuel et al. (2007) also found a negative relationship between the duration of professional development time and

the teachers' perception of their preparedness to teach to the higher levels of student inquiry. They found that it was only through sustained support from experienced mentors that new behaviors were reinforced and lasting change was evidenced in the practices of teachers (Penuel et al., 2007).

**Workplace learning and spillover.** De Grip and Sauerman (2012) found that even though professional organizations often require on-going training and continual development for employees not all employees attended similar training sessions. One indicator of a successful training program was its ability to replicate its core skills and concepts in the informal communications and collaborations of participants with non-participants, known as spill-over (DeGrip & Sauerman). After the implementation of a formal training program, organizations, that required collaboration and teaming, witnessed evidence of the spill over effect, the transmission of information to employees not originally in attendance at the original training (De Grip & Sauermann, 2012). Much of the learning that helped a teacher adapt classroom practices to change occurred as on-the-job embedded coaching. This type of modeling allowed for professional development at the implementation phase of the process and the formation of what Lave & Wenger (1991) would classify as a community of practice (Avalos, 2011).

Sun et al. (2013) used the data from 39 schools that participated in the National Writing Project. This study focused on the transfer of knowledge flow from active participants in formal professional development sessions to other professionals in the school who happened to come into professional contact with participants. This type of professional development transfer of learning was also termed as the spillover effect. The findings from this study demonstrated that teachers, who participated in a professional

development program of longer duration, were more willing to pass along their new knowledge base with others in a collegial manner. A second, more important, longitudinal finding was that the impact of the original professional development for non-participants, two years after the initial training, was equal to the original group of participant-transmitters. When an organization promoted collegial collaboration within the community construct, professional development had a far more reaching impact than on just the original participants (Frank, Zhao, & Borman, 2004; Sun et al., 2013).

**Monitoring and assessment of effective professional development.** Long-term impact on teacher development and increased measures on students' outcomes must replace the on-the-spot, emotional reactions and engagement habits of teachers involved in professional development activities (Sun et al., 2013). Many researchers have researched the long-term outcomes of effective professional development and determined some similarities (Barrett et al., 2013; Desimone, 2009; Doren et al., 2012; Jaquith et al., 2010). According to Desimone (2009), the ultimate aim of effective professional development was to alter or enhance teacher knowledge. Jaquith et al. (2010) found that the only two outcomes of effective professional development that should be used to measure success was the increase of teacher and student learning. Interestingly, Barrett et al. (2013) also found that teachers, who were considered to be relatively less effective on local faculty rating scales combined with student outcome measures were more likely to participate in the AMSP (Appalachian Math and Science Partnership) professional development. According to Desimone (2009), when teacher knowledge was enhanced, student outcomes were impacted in a positive manner. After controlling for the other predictors for both student and teacher participants, the main effect of the professional

development training was significant after teachers participated in targeted training on postsecondary education/training goals in special education (Doren et al., 2012).

Professional development is not an end but rather a means to the end of improved instruction for student achievement (Yoon, Duncan, Lee, Scarloss & Shapely, 2007). Yoon et al. (2007) performed a meta-analysis of over 1,300 studies that dealt with the impact of professional development on teacher performance and ultimately student achievement. Only nine studies were considered after having met this set of rigid criteria. The research environment of the studies that met the stringent criteria were all drawn from the elementary and lower elementary grades in the areas of literacy and numeracy instruction. The result of the study was that the professional development practices had to be provided on average for 49 hours for student achievement scores to be improved by 21 percentile points (Yoon et al., 2007). Using student achievement as the end goal for professional development provides for the importance of professional development programs to be sustainable over longer periods of time (Yoon et al., 2007).

When determining the overall effectiveness of professional development, Margolis and Doring (2012) studied a job-embedded, teacher/leader model framework. Margolis & Doring found mainly negative perceptions from participants with this type of professional development delivery model. They stated that this professional development model used a mentoring-style delivery of instructional knowledge by actual teacher leaders in a studio classroom setting. Teacher leaders maintained a fully functioning classroom as well as professional development responsibilities. At the end of the study, the overall lack of internal leadership at the administrative level allowed for this seemingly effective strategy to falter and ultimately fail. Although teachers did not want

to model the lessons, they enjoyed watching pedagogical skills in action. Teachers became dependent on the supporting teacher to deliver specific content rather than use it as a modeling experience. A lack of trust among teachers was also a very important barrier to the full implementation of this program (Margolis & Doring, 2012).

**Face-to-Face Versus Online Professional Development Practices**

As professional development moved to a digital format for a delivery method, researchers began to study the effectiveness of this new practice and its ability to affect greater institutional change (Fisher, Schumaker, Culbertson, and Deschler, 2010; Fishman et al., 2013; Frank et al., 2004, Mancusa et al., 2010, and Shea & Bidjerano, 2010). Fisher et al. (2010) conducted two studies to determine whether face-to-face or virtual professional development had a greater impact on teacher quality and student outcomes. Fisher et al. found that there was little difference between the control and experimental groups regarding satisfaction and teacher knowledge growth. The study also demonstrated that there was little difference between the two delivery models with concern to student outcomes on standardized assessments.  Fishman et al. conducted a similar randomized study to determine the superiority of two different professional development delivery models: face-to-face, and online learning. The researchers focused on the type of professional development that lead to new curriculum adoption and found that although students and teachers showed significant growth in learning it was not the result of either delivery model, face-to-face or online professional development (Fishman et al., 2013).

Despite the rather limited success of the other two research studies, Shea and Bidjerano (2010) conducted a study of 3,165 two and four year college students in both

hybrid and online learning situations and determined that learners' self-efficacy, a sense of being able to find individual success, was increased when there was a determined teacher presence. Individuals appeared to need a virtual leader to guide the communication and collaboration practices in online environments. A hybrid approach to learning appeared to be the right formula for success (Mancusa et al., 2010; Shea & Bidjerano, 2010).

Smith and Sivo's (2012) research study focused on the general acceptance of e-learning as a viable alternative to face-to-face professional development by practicing teachers.  Within this research study, the Smith and Sivo used Davis's (1989) Technology Acceptance Model (TAM), first developed as a theoretical model to determine the usage rates of an individual in technologically-mediated environments. The two key elements that were used to determine usage included: (1) perceived usefulness (PU) and (2) perceived ease of use. Using these two important variables, the researchers determined one's intention of use of the new technology. The researchers found that if teachers did not perceive that there was usefulness to the training and they held a pre-conceived fear of the actual online process, the online training fell flat and did not meet the needs of the participant (Smith & Sivo). This model was developed long before the advent of online professional development and even before the widespread use of the Internet in the mainstream community. Although it was a relatively older theory, it might be utilized to understand usage rates of online professional development (Smith & Sivo). Smith and Sivo (2012) proved that the Technology Acceptance Model (TAM) model was still viable as a predictive theoretical model when determining a participant's intention to continue using an online professional development model. Models like the TAM could prove

useful as educational institutions push for more online learning for both professional

development and classroom-level instruction and assessment (Smith & Sivo, 2012).

**Elements of effective online professional development.** Effective online

training includes a multi-component approach that allows for a differentiation of

instruction and experiences for the individual users (Brown & Woods, 2012). Renninger

et al. (2011) found that the flexibility of online forums and learning environments could

be designed to differentiate instruction to meet the needs of diverse online users and

learners in a professional development format. Dede et al. (2006) also asserted that online

professional development models allowed for differentiation to meet the busy schedules

and dynamic needs of classroom educators. This type of real-time, job-embedded support

fostered the type of educational reform that was being called for at the local, state, and

federal levels (Dede et al., 2006; USDOE, 2010). Ostashewski (2013) also found that

teachers who participated in Networked Teacher Professional Development (nTPD), a

form of virtual online professional development, appreciated the wide-range of

experiential learning and collegial sharing of classroom resources catered to meet their

individual needs. This new method of professional development allowed for the positive

sharing of digital resources and social networking.

It is important to note that not all networked/online professional development is

received by participants in the same manner. Renninger et al. (2011) studied the pre- and

post-test survey results gathered from 164 teachers who participated in Drexel

University's un-moderated mathematics online forum. The results indicated that

participants who had higher-levels of math training and came to the online sessions

motivated to reach personal goals were more likely to return to complete the program and

utilize its resources. The researchers also found that the majority of online users actively participated and collaborated with other professionals in developing content and pedagogical knowledge when they had clearly established goals that challenged their thinking. Additionally, some online participants were more interested in the delivery model of online workshops than the actual disciplinary content that was being covered and discussed in the modules (Renninger et al., 2011). Smith and Sivo (2012) suggested that designers of online professional development should focus on building a sense of community around goals that are tied to specific classroom applications. These two design features demonstrate that teachers develop a strong perceived usage as well as a positive attitude toward the ease of use of the professional development technology.

**Informal teacher professional development.** Public schools recognize that technology integration programs are needed to provide a 21st Century learning experiences for students preparing for a globally-connected world (USDOE, 2010). In an effort to bring districts into alignment with the rapidly changing pace of the global community, schools observed the trends and attempted to make the changes necessary to properly prepare students how to adapt their thinking to meet the challenges of a constantly changing world (Gulamhussein, 2013). For example, constructivist education within apprentice-style learning (Lave & Wenger, 1991) placed emphasis on a bottom up approach to learning where participants make meaning rather than a top down approach where experts impose learning upon unwilling participants (Lave & Wenger, 1991, Wenger, 1998). Dede et al. (2006) also stated that more research was needed in the area of virtual teacher professional development practices and design.

Over a period of several years, advances in technology have pushed educational institutions to develop a new set of current policies to govern professional technology usage (USDOE, 2010). Ostashewski and Reid (2010) found that there were teachers who were leveraging social media sites to locate solutions to educations problems from a network of other educators. Outside the contracted hours, these teachers logged into daily professional development for just-in-time embedded mentoring from connected global educators (Ostashewski & Reid, 2010). Likewise Anderson (2009) also stated that research was limited in the area of leveraging the everyday technologies (USDOE, 2010) online professional development for personal, and professional learning. As teachers continued to try and meet the demands of an exciting and dynamic age of education reform, digitally mediated collaboration required professional development programs that allowed for differentiated learning (Ruddy & Prusinski, 2012).

**Outcomes and measures.** Strong mandates from the federal level are pushing for networked or virtual professional learning as a viable option for dynamic professional development activities (USDOE, 2010). These professional development activities are meant to prepare teachers to use instructional and assessment practices that increase student achievement measures on both national and international standardized assessments (Harwell, 2003). A seven-week study conducted by Masters, Magidin deKramer, O'Dwyer, Dash, and Russell (2010) found a cumulative impact of virtual professional development practices on teacher knowledge and their instructional practices with fourth grade language arts teachers. The researchers concluded that the virtual professional development activities resulted in significant growth in both knowledge acquisition and changes in instructional practices. Dash et al. (2012) studied the impact of

online professional development (OPD) practices on the content and pedagogical knowledge of fifth grade mathematics teachers. Ultimately, the study used student achievement measures to determine overall teacher quality. The researchers found that although the teachers who participated in the online professional development (OPD) showed greater results in content and pedagogical knowledge, the two groups showed no marked difference in impact on student achievement scores. The findings also demonstrated that intensive, content-centered professional development that was sustained over the implementation period could have a positive impact on teacher knowledge and practice (Dash et al., 2012).

**Online and Virtual Communities of Practice (VCoP)**

  **Elements of effective online VCoPs as professional development.** Researchers explored virtual communities of practice to determine the impact of informal professional development within public schools (Zwart, Wubbels, Bergen, & Bolhuis, 2009). Zwart et al. defined teacher professional development as any activity that caused the educator to change cognition or behavior in work-related activities.  The researchers found that schools could, with confidence, challenge the notion that professional development could only occur in formalized sessions with a top-down management structure. Teacher learning could occur throughout the day in situated environments and could be short-term in time frame (Zwart et al., 2009).

  Professional development is designed to teach adult learners those concepts and skills necessary to improve practices and increase the effectiveness of the overall organization (USDOE, 2010). Although not directly related to the field of education, this particular study was germane to the topic because of its reflections on adult learning

within a virtual environment. Similar informal adult learning occurred when Ghost Bear (2012) studied the learning processes of 388 adult learners who were learning to participate in the online auction platform eBay. One of the key findings was that adult learners required professional development that was differentiated and allowed the learner to take an active role in the construction of meaning. It was further recommended that a hands-on approach within a loosely-based community of learners was necessary for instruction to be vital among adult learners (Ghost Bear, 2012).

In determining the general consensus of teacher participation in digital technologies, researchers used surveys to gather data. Gray et al. (2010) worked with the Office of Educational Technology (OET), who in turn asked the National Center for Education Statistics (NCES) to complete a national survey of public schools to determine the status of technology integration.  The key findings were extensive and resulted in the consensus that the data on the training that led to the implementation of technology into the day-to-day practices of the classroom was the most beneficial. Participants listed the professional development programs that were provided by the district to be 61% effective whereas they reported 78% for independent learning. This fit with other models of adult learning that demonstrated the need for self-directed training that was differentiated to meet the individual needs of the teacher (Gray et al., 2010).

Many researchers have found that Web 2.0, social media, and virtual communities of practice platforms are already leveraged in teachers' personal lives and should be accepted into the professional environment as well (Arnold, Ducate, Lomicka, & Lord, 2009; Butler & Schnellert, 2012; Lomicka & Lord, 2009). Lomicka and Lord stated that the true capacity of Web 2.0 technology was only realized when social interaction

happens in a true collaborative spirit rather than professional development that was taught

by a few elite presenters. As well, Arnold et al. (2009) found that to truly realize the full

potential of an online environment, participants must believe in the community as a

whole. Arnold et al went on to state that participants would also benefit from professional

development training in the area of positive communication and collaboration. This type

of training would lead to better give and take in the feedback sections of the online

communication platform (Arnold et al., 2009). Butler and Schnellert conducted a case

study with educators who were using situated reading assessments to enhance the

learning within their subject-specific classrooms. They determined that when schools

encouraged teachers to reflect and collaborate the professional development became a

vehicle for deep learning (Butler & Schnellert, 2012). Arnold, Butler and Schnellert, and

Lomicka and Lord have demonstrated that a positive professional development program

must allow for teachers to make sustained use of Web 2.0 technologies to connect

professionals with other teachers.

Professional development of the 20th century has been based upon a top-down

model where experts presented information in a linear fashion to make teachers aware of

the need for change and then the process to bring about this change within the

organization (Harwell, 2003; USDOE, 2010). Casey and Evans (2011) noted that the

incorporation of Web 2.0 technology into the professional development habits of teachers

is shifting the focus away from a dependence on the instructor and leading to a more

teacher-researcher delivery system. Duncan-Howell (2009) found that one of the defining

characteristics of online communities in education was their power to promote

democratic user participation in a collaborative environment where all communication

was valued as moving the group in a new direction. Online communities have the power to allow educators to engage in continuous professional development for the length of their career (Duncan-Howell, 2009). Euerby and Burns (2013) defined communities along similar lines as connected teams, as groups of individuals who were working together toward a common goal. The differentiation occurred when one studied the frequency of interactions. A community was more loosely aligned with members interacting less frequently and more autonomously as they sought answers to their questions (Euerby & Burns, 2013).

The lack of research in the area of informal professional development occurring in virtual communities of practice in public schools forced the researcher to look to parallel careers which also utilized on-going professional development to keep adult practitioners relevant. Sabah and Cook-Craig (2010) recognized that Israeli social workers faced a unique challenge to incorporate evidence-based best practices into their daily routines. The researchers decided to focus on two agendas: in house and interagency. The interagency approach had to transcend the geographic and temporal demands of a multi-agency initiative. In an effort to meet these unique demands, a virtual community of practice was established to allow these professionals of social work to collaborate for the betterment of their individual clients. The data suggested that launching a virtual community of practice could lead to professional collaboration that resulted in the incorporation of best practices and the development of organizational innovations (Sabah & Cook-Craig, 2010). The implementation of virtual communities of practice in this environment offers promising results to implementation in public schools.

When groups of adult learners are bound together by a common desire to learn new skills and concepts, deemed as useful by the group, communities of practice help participants to adapt and adopt new learning. For example, Wasko, Teigland, and Faraj, (2009) used the term networks of practice instead of communities of practice. Wasko et al. studied networks of practice and developed a set of defining characteristics of online professional bulletin boards. They found that virtual communities of practice were a viable alternative to face-to-face communities. These types of networks also promoted active participation in the individual informants (Wasko et al., 2009). Hara, Shachaf, and Stoerger (2009) took Dube', Bourhis, and Jacob's (2006) seminal work on developing a framework to study organizational communities of practice and adapted it to fit an open online community of practice. The researchers found that topic relevance to the group as a whole could lead to both increases and decreases in membership. Practitioners who were using online communities of practice should be cognizant of the membership and participation rates as measures of a healthy community of practice. Hara et al. called for a more specific research study on communities of practices in open virtual environments.

**Teacher induction models.** The communities of practice model of Lave and Wenger (1991) have profoundly influenced the methods of educational practice and theory in pre-service teacher training (McLoughlin & Lee, 2010). Cuddapah and Clayton (2011) studied a new teacher program that was housed in a district but sponsored by a university involved in teacher pre-service preparation to determine how a cohort-community practice functioned to aid the induction of novice educators. One interesting characteristic of this specific research study was that the cohort consisted of all novice teachers. The researchers determined that instead of a learning goal being center to the

process, as Wenger (1998) suggested, the group or community of learners came to matter more than goal satisfaction. As new teachers' needs developed, the cohort model took on a dynamic nature to meet the developing needs of the more veteran teacher and staff (Cuddapah & Clayton, 2011).

Researchers have been interested in learning how teachers, who participated in Web 2.0 technologies, selected multiple methods to record their learning and collect virtual artifacts (McLoughlin & Lee, 2010; and Yang, 2009). McLoughlin and Lee studied Australian pre-service teachers who used blogs and podcasts to state problems and memorable experiences during their practical field experiences. The researchers wanted to determine whether this virtual group would show similar development characteristics as Wenger's other face-to-face research groups. The results of this particular study indicated that the group did begin to show the characteristics of Wenger's communities of practice framework. When music educators left the tutelage of their university to enter into their practical field experience, there was a shift from the supportive communal atmosphere of the institution to a more isolated experience within a secondary school. The researchers found that it was during this time of implementation that one needed higher levels of emotional support, constructive feedback, and practical advice (McLoughlin & Lee, 2010). Yang (2009) also studied pre-service teachers as they developed a virtual community of practice using a blogging platform. The researchers reported that students were hesitant to post their true feelings for fear that their final grades might suffer. There were also general trust issues within the community as to how others in the group would react to online posts.

In a similar study of pre-service teachers, Takahashi (2011) determined that, in a school-based context, developing teacher beliefs could be formed or reinforced by virtual communication, blogs, and collaboration with others within the larger community of practice. These beliefs of a positive efficacy could transfer from veteran teachers to those still in training. Ultimately, those teachers who maintained positive self-efficacy were able to impact greater levels of student achievement (Takahashi, 2011). The self-reporting platform of online blogging allowed for educators to reflect upon virtual experiences and maintain online social media relationships (Takahashi, 2011).

**Twitter.** Burke, Marlow, and Lento (2009); Gruzd, Wellman, and Takhteyev (2011); Lewis & Rush (2013), and Zuidema, (2011) researched the type of professional reflection that occurred on social media and helped to build virtual communities of practice. U.S. Department of Education (2011) defines *Twitter* as a social media platform that allows users to post 140 character responses or questions. These posts can be tagged with special hashtags so that they are organized around topics for easy reading (USDOE, 2011). Individuals could form groups or communities of practice by following those individuals who have similar interests or conversations. Burke et al. (2009) found that the more contributions one's friends make has a direct impact on the user's rate of use. The posts can either be personal or professional in nature and multiple conversation threads can be read in a chorus of tweets (Twitter, 2010; USDOE, 2011). Individual teachers have the ability to publish their experiences and reflections using Web 2.0 technologies to others who might benefit or comment with solutions (Gruzd et al., 2011; Lewis & Rush, 2013; Zuidema, 2011). Burke et al. (2009) also found in their study of social media usage that users reacted with greater participation to visual images.

Zuidema (2011) studied short question and answer responses for teachers involved in teacher induction programs. This researcher's findings proved that this shorter version of reflective practice had an impact on altering pedagogical concepts in the classroom setting. Lewis and Rush (2013) found that although Twitter was not originally designed as a community building online platform, it could flourish as a possible outlet for a community of practice to form, develop, and interact. The findings demonstrated that a useful community of practice could use Twitter to communicate asynchronously in a geographically-diverse environment (Lewis & Rush, 2013). Gruzd et al. (2011) also studied the development of a Twitter community around the online actions of one academic user. This case study allowed for the research team to determine that most of the online connections merely grew from professional relationships. The artifacts of the online community that were collected as data consisted of message posts and the various follower-followee relationships (Gruzd et al., 2011).

Researchers have been interested in the types of communities that form on social media or Web 2.0 sites that do not always follow more traditional community development. Lewis and Rush (2013) worked from the premise that when a community was not neatly defined by employment in a particular organization that a network could be visualized when participants, or nodes, were linked to others by the frequency of their interactions. The Twitter-based network develops along the patterns with the highest rate of density. When all nodes within a specific cluster all show linkages with each other this is termed a *clique*. This dense clustering of communication within a clique could be thought of as a community (Lewis & Rush, 2013). With this broad organizational pattern,

virtual communities of practice can be understood as individuals who are not necessarily linked by a formal professional connection.

Wesely (2013) demonstrated that collaborative technologies could be utilized by a dispersed mix of world language teachers to meet their job-embedded professional development demands. Furthermore, the researchers were able to draw clear connections between the positive impact of community of practice models and emerging social media platforms like Twitter (Wesely, 2013). Furthermore, Boyd et al. (2010) noted that the social networking site Twitter allowed users to enter a stream of individual messages that were not bounded by time or space. This type of conversational ecology allowed for one to be aware of conversations that were termed by Lave & Wenger (1991) as *legitimate peripheral participation*.

Boyd et al. (2010) recognized Twitter as a unique community of practice and found that participants use retweeting as a form of conversational practice. The researchers found that because Twitter was an unbounded space that "people instead loosely inhabit a multiplicity of conversational contexts at once" (p. 6). The difficulty was that the use of retweets could sometimes lead to blurred meaning or the inability to establish an original author of a statement. This ambiguity could lead to trust issues within participant groups (Boyd et al., 2010).

Forte et al. (2012) also explored the everyday technology of Twitter to determine how it was being utilized as an educational technology in the hands of innovative educators. Many of the participants responded that they connected more with their virtual communities of practice and encouraged their brick and mortar colleagues to join the social media movement because of their perceptions of the benefits in finding new

ideas and solving common problems experienced by other teachers in the communities of practice. Although informants reported the benefits of Twitter, many responded that they were still reluctant to expose their students to this form of social media. The fourth and final finding dealt with the organizational constraints that were placed on teachers' social media practices. Many teachers reported that Web 2.0 and social media platforms were blocked by web filters within their school district's network.  Overall, the teachers saw this community of practice as a productive bridge between professional teaching organizations sharing innovations and best practices (Forte et al., 2012). Fucoloro (2013) determined that Twitter emerged as the social networking site that most respondents used for informal professional development. A second finding was a general feeling among participants that teachers should take an individual responsibility for their professional development rather than rely on the "one-size-fits-all" professional development provided by the districts. Although reported beneficial to teachers, few respondents reported being awarded professional development time for their informal efforts (Fucoloro, 2013).

**Blogging.** Researchers conducted a case study of a Malaysian SMART school that was implementing Information Communication Technologies (ICT). Ming, Hall, Azman, and Joyes (2010) found that Malaysian teachers could develop the capacity for real and lasting change with the purposeful integration and support of ICT into the existing brick and mortar school community. One of the differences with this research study and others like it was that the initiative was driven, top down, by the central government of Malaysia. It was determined early that the goal at the building level should be to leverage technology for those individuals who share common concerns and

have established common classroom concerns. This type of technology integration led to a teacher-centered professional development model for change in the educational climate of the school. These participants enrolled in a SMART School program that required a virtual human resource development to meet learners' needs. Bennett (2009) defined VRHD (virtual human resource development) as "a media rich and culturally relevant Web environment that strategically improves expertise, performance, innovation, and community-building through formal and informal learning" (p.364). The program was originally funded to help students prepare for a globally-connected world after schooling. The participants used a weblog format to record their thoughts and feelings for the researchers. Cognitive presence, a constructivist concept that learners attempted to use in new situations to make sense of their world, was evident in the blogs of the participants. Although this community of practice did not develop naturally, it still had the power to impact teacher empowerment for change through the development of individual blogs. The researchers determined that the successful implementation of any technology infusion program required solid infrastructure, face-to-face professional development, and unwavering teacher motivation (Murugaiah, Azman, Ming Thang, & Krish, 2012).

Researchers have studied the meaningful digital reflection that could help those who participate in a virtual community of practice to synthesize their experience and learning into a meaningful professional development activity (Chong, 2008; Fitzpatrick, 2013; Wenger, White, & Smith, 2009; Yang, 2009). Fitzpatrick utilized a classroom blog to connect music educators engaged in the common activity of student teaching. Fitzpatrick found that blogging might help to develop a virtual community of practice for pre-service educators in the field. The researcher did state the limitation of pedagogical

expertise, and not all participants were comfortable with technology integration (Fitzpatrick). Although the community of practice did grow and members became active participants, the level of pedagogical skill that was transferred was well-beyond the scope of the study. It was suggested that each participant use local guidelines and professional ethics to determine those instructional and assessment practices that will work in the classroom setting (Fitzpatrick, 2013).

Chong (2008) also found that when teachers blog they become part of a wider virtual community of practice and begin to make meaning of their shared experience with the collective wisdom of the collective group of participants. Additionally, Abawi, (2013) found that teachers can dig deeper into their own professional growth when they share a common language and meaning-making system. Although this particular study focused on face-to-face interactions, the shared experiences of reading and writing blogs could create a similar virtual experience (Abawi, 2013). Wenger et al. (2009) determined that digital stewards were individuals who understand the inner workings of a community and use innovative technologies to help individuals within the group to meet their needs. The use of educational weblogs (blogs) could be used as an online social networking tool to facilitate development of a professional *community of practice* (Wenger et al., 2009). Yang (2009) demonstrated that blog sites could develop into reflective communities of practice when it is utilized as a discussion and feedback space. With the availability of vast amounts of information, it is important for educators participating in virtual communities to stop and reflect upon information that might lead to relevant change.

**Interconnected memberships in VCoP.** Larreamendy-Joerns and Leinhardt (2006) developed an explanatory model of learner engagement in virtual environments

with the term *epistemic-engagement*, the concept that individual learners have a sense of duty to the group to actively participate in the building of knowledge and skills within a certain framework. Dube'et al. (2006) developed a typology of organizationally-based virtual community of practice that allowed for a study that extended beyond a mere case study approach. The findings suggested that knowledge sharing in virtual communities of practice could be identified by a set of established characteristics. The four dimensions to study organizationally-based communities of practice were: demographics, organizational context, membership characteristics, and technological environments (Dube' et al., 2006).

In a related study, Chapman and Stone (2010) studied the assessment techniques used for measuring learning outcomes in a 3D virtual world space. College-level participants took part in problem-based learning scenarios carried out in an online virtual environment. Assessment measures were collected through the submission of learning artifacts and direct observation of the learner's avatars. Both instructors and learners discussed the benefit of situating the learning in a problem-based format. It was noted that the same assessment measures used to evaluate the terrestrial world could be utilized in virtual environments (Chapman & Stone, 2010).

In another study of learning outcomes or assessments, Chong (2008) studied networked educators who were using blogging as their primary means of reflection and communication. The researcher found that *edublogging* had the potential to promote higher-order thinking skills and motivated music educators to adopt a more collaborative professional learning stance (Chong, 2008). De Laat and Shreurs (2013) also found that learning analytics helped make the invisible networks of professional learning more visible in determining its overall effectiveness. The researchers were looking to enable a

bottom-up culture of embedded practitioners who were taking control over their own professional development in solving problems (De Laat & Shreurs, 2013). Nishino (2012) conducted a similar case study that sought to understand the professional development activities of one Japanese educator as he attempted to incorporate English language instruction into his daily teaching practices. The researcher found through both interview and observational data that the research participant was indeed a member of multiple communities of practice in the learning process. The research also supported the teacher as continual learner metaphor and that multiple memberships in communities of practice can lead to a collective benefit to all those individuals involved (Nishino, 2012).

In an observational style assessment, Mackey (2010) selected participants seeking a graduate diploma part-time from a New Zealand University while working in schools. The purpose of this particular study was to determine the impact on virtual communities of practice on the day-to-day practice of the teachers. The study determined that the larger school community benefitted from the dual membership of participants with the sharing of ideas and blended learning. The participants' learning was "situated" within the face-to-face school from the virtual learning model (Mackey, 2010). Chapman and Stone (2010) also suggested that multiple measures be used to evaluate the social learning that was taking place in 3D virtual worlds. The group learning could be understood with journaling, in-world polling, student feedback, and various other forms of reflection. The researchers also noted that peer groups evaluated each other's work during the creation phase and recorded their responses and suggestions on digital notecards that were then submitted to the professor.

King (2011) also studied the sustainability of innovative new practices through institutional professional development. King found that teachers had a higher level of desire to implement practices that immediately had an impact on student learning and achievement. Strong professional development programs that were supported with professional learning communities led to improved student achievement. Another interesting theme that emerged was the spontaneous development of professional learning communities (PLCs) to bring new staff up to speed with the culture of learning already established in the organization (King, 2011).

**Ineffective virtual communities of practice.** Brass and Mecoli (2011) witnessed the failure of a teacher-created Wikispace because teachers were unsure of how to position themselves as experts in an online community. Another issue that led to this technology failure in Web 2.0 technology stemmed from trust and privacy issues felt by the community members. The site had a political agenda focused on the No Child Left Behind legislation, and members feared that their online personas and comments could be used against them professionally. As a result of this mistrust, participation in the Wikispace was lackluster and ultimately led to the failure of the virtual program (Brass & Mecoli, 2011). Lin, Lin, and Huang (2008) were able to determine that not all social media interactions were beneficial to the professional development needs of the community of participants. In their efforts to trace knowledge flows in virtual communities, they demonstrated that miscommunications and breakdowns in understandings of posts could lead to a negative learning experience (Lin et al., 2008). Additionally, Lin et al. (2008) studied educators involved in social media in Taiwan and determined that when individual participants lose faith in the system that the virtual

relationships can be threatened and the community can breakdown and devolve into an ephemeral and somewhat vacuous activity.

**Summary**

The pace of the world outside the schoolhouse walls is moving faster than traditional professional development (Matzat, In press; Shea & Bidjerano, 2010). Teachers needed continuous and job-embedded support for the implementation of the very technologies that are changing the method of delivery and assessment of the modern student (Ostashewski & Reid, 2010). Many of the Online Teacher Professional Development (oTPD) programs are built around a formalized structure that follows a linear learning pathway that is based on replicating the traditional, face-to-face professional development model (USDOE, 2010). Access and services for these types of adult learning programs work within an external control model where formal collaboration is lock-stepped and mandated by academic administrators who are pushing for large, district-wide reform initiatives. The literature reveals that educators and school districts are using social media, Web 2.0 tools, and virtual communities of practice to meet professional development needs. Chapter Three will outline the methods and procedures that was utilized for this research study.

**Chapter Three – Methods and Procedures**

**Introduction**

The purpose of this study was to determine how connected teachers are leveraging social media and Web 2.0 tools to meet self-diagnosed professional development issues within their own classrooms or buildings. Because of the varied teachers' participation rates in technologically-mediated environments, their experiences are unique to the individuals involved within the study. This qualitative study used surveys, open-ended questionnaires, and phone interviews to gather the qualitative data.

**Subjects/Participants**

The target participants for this study were selected from a sample of 256 professional educators, administrators and teachers, in kindergarten through twelfth grade working in a mid-sized, public school district consisting of 3246 students within located in South Central Pennsylvania. The school district is comprised of one high school, one middle school, three elementary schools, and one cyberacademy. Thirty-one educators participated in the survey and questionnaire portions of the study. One participant skipped through the survey without actually answering any of the questions. Four participants agreed to phone interviews to provide a more detailed analysis of social media usage. The district stated that in the 2013-14 school year, their per pupil spending was $14, 360.25, which reflects the second year of implementation of the district's Anywhere Anytime Learning (AAL) initiative. This 1:1 initiative placed a laptop in the hands of every student in grades 7-12 and allows for full implementation of a Bring Your Own Device (BYOD) program in order to prepare the students to meet the needs of a 21$^{st}$ Century globally connected society (USDOE, 2010).

The research site was selected for participation in this study because of the district's long-term commitment to technology integration and infusion into all academic and elective course offerings. After reviewing the district needs assessment in the Pennsylvania Department of Education's (PDE) Educational Technology Report (2009), the two sub-groups, A & B, reported on a Likert-scale that their district's technology implementation in 2007 was *somewhat unready* and/or *completely unready* to make the changes necessary to fully implement technology by utilizing a virtual community of practice to meet district goals. In an effort to determine the totality of impact virtual communities of practice have on everyday teaching practices, it was important to explore the demographics, attitudes, and experiences of each of the faculty members in this research study. Participation of connected educators was required in all three of the research instruments.

**Instruments**

**Justification for survey and open-ended responses.** MMS Education, edWeb, & MCH Strategic Data's (2012) *A Survey of K-12 Educators on Social Networking and Content-Sharing Tools* (2009) was adapted with permission and used to measure teacher perceptions of participation in virtual communities of practice using a survey and open-ended response format. The adapted survey consisted of ten multiple-choice items and five open-ended response questions (Appendix A). It was important to elicit the individual habits and perceptions from participants because of the highly variable patterns of human behavior as associated with virtual media. The survey identified a range of users from those who do not seek professional mentoring and support in virtual worlds to those who are active members and contributors in communities of practice.

Within the subset of those who were using digital communities of practice, differentiation was made between those who were peripheral participants and those who were fully immersed in the practice of seeking professional development via a virtual community of practice model. The social media survey was previously field tested in September 2012 with administration to "200,000 randomly selected educators, including principals, teachers, and librarians" (MMS Education, edWeb, & MCH Strategic Data's, 2012, p.2). The adapted survey was also field tested in the researcher's home district to make sure this it was in an easy to understand format.

**Justification for phone interview.** While the general social media survey and questionnaire determined the participatory habits and perceptions of the K12 teacher participants, the unit of interest in this study was the impact of participation in virtual communities of practice on solving everyday teaching issues and problems. It was critical, therefore, to reach participants on a more personal level. Those who volunteered to participate in this portion of the research identified themselves as connected educators by agreeing to participate in a phone interview about their social media usage.

The researcher developed a phone interview that included five questions designed to elicit the personal experience of the participant's daily participation in a virtual community of practice, and its professional development impact on teaching practices (See Appendix B). The questions were created as extensions of the general survey to gain a deeper understanding into the individual perceptions and habits of connected educators.

Once permission was granted, the participant was asked to reflect on his/her past participation in a social networking site, online community, or Web 2.0 tool. The five questions provided reflective feedback on why the participation in social media or Web

2.0 tools was needed for professional development as well as the participant's perceptions on the impact of these digital tools on classroom practices.

The phone interview reflection process allowed the researcher to peer into the very unique practices of connected educators. In order to determine the virtual participation of these connected educators, it was important for the researcher to use a method that allowed for further explanation by the participant. Once permission was granted for the phone interview, the researcher studied the virtual habits and practices and recorded the participant's rationale for use and the level of participation and amount of active contributions during the virtual activity.

**Reliability and Validity**

In order to ensure data triangulation in this qualitative study, multiple methods of data collection were used to gain a comprehensive understanding of the multiple perspectives of participants (Denzin & Lincoln, 2005). In order to make sure that the survey and questionnaire were reliable, the researcher field-tested the research instruments with eleven educators from his own district. The individual responses were noted and editing changes were made to the documents. Using a survey that utilized a multiple-choice format combined with open-ended responses followed by a phone interview, the researcher was able to maintain an acceptable level of validity, and the findings between measures were in alignment with each other.

Participants who decided to participate in the study were not coerced or incentivized in any manner. In an effort to maintain participant anonymity, the participants' survey and questionnaire data was compiled using the Survey Monkey online tool. The inclusion of three elementary schools, one middle school, one high

school, and one virtual academy within the same geographic location allowed for a deep

understanding of this particular school's study results (Marshall & Rossman, 2006).

**Design**

Table 3.1

*Qualitative Study Design*

| Research Questions | Social Media Survey | Open-Ended Questions/Responses | Phone Interview |
|---|---|---|---|
| One – Virtual communities of practice (VCoP) participation. | SQ5; SQ14 | OEQ6; OEQ15 | PIQ1 |
| Two – Social media habits of educators. | SQ3; SQ7; SQ9; SQ12 | OEQ4; OEQ13 | PIQ2; PIQ3 |
| Three – VCoP's Impact on professional practice. | SQ10 | OEQ8; OEQ11 | PIQ4; PIQ5 |

*Note: SQ =* survey question; *OEQ –* open-ended questions; *PIQ =* phone
interview question.

This qualitative study used surveys, open-ended questions, and a phone interview

to investigate the online and offline practices of teachers in digitally-mediated social

spaces, focusing particularly on the perceived impact of the participation in virtual

professional development on actual teaching practices. A qualitative researcher is one

who has a marked interest in understanding how the individual participant constructs

meaning of his/her world as it fits within the construct of a larger community of practice.

Individual teachers are utilizing social media platforms and Web 2.0 tools to meet

constantly evolving professional development needs and concerns (Denzin & Lincoln,

2005).  Although this model cannot be generalized to address the needs of all teachers,

the lessons learned within this design could offer guidance in building a personalized

professional development plan for other teachers who are connected.  This qualitative

study was built on the gathering of data using surveys, open-ended questions, and a

phone interview. This particular methodology offered the researcher the chance to take a

critical look into the social media habits of public school teachers (Denzin & Lincoln,

2005).

**Procedure**

The research study was submitted for institutional approval to the Immaculata

University Research Ethics Review Board (Appendix C). Once permission for the study

was granted, the researcher contacted the Superintendent to determine the best method of

informing the building level administrators and faculty about the study. This study

included the district's five face-to-face schools and one cyber-academy. The researcher

deployed Survey Monkey to disseminate the survey and questionnaire, Teachers' Social

Media Habits and Reflections. The researcher sent an email that explained the purpose of

the study to the administration and faculty of the district and invited participation. The

email included: (a) purpose of the study, (b) established timelines of the study, and (c) the

request for participation in the study. Administrators, teachers, and staff who participated

in the phone interview element of the study as participants were asked to provide verbal

consent for the interview phase of the study.

The survey instruments were emailed to each participant in the school district

with emails of consent to: (a) assure anonymity, (b) provide guidance for completing

instruments, and (c) provide a preliminary timeline so that the study had definable limits.

The survey, questionnaire, and phone interview were previously administered to the staff

of the researcher's home district to determine reliability. Constructive responses were

elicited from the test group, and the changes were made to make the instrument stronger

for use in the research fieldsite. The surveys and open-ended responses were completed

online, and the researcher made benchmark checks to make sure to maximize

participation. The participants needed three prompts during a two-month period to reach

the 31 individual participation mark. The research timeframe fell over the summer

months (June, July and August) so participation rates were low, and the survey/open-

ended question email had to be sent four times to reach a reasonable sample group.

For purposes of inclusion in this study, a connected educator was defined as one

who seeks, on average, online information, support, and guidance at least once per week

during the school year. A request within the original survey and open-ended response

email to teachers asked for volunteers to participate in a phone interview. During the

phone interview, the researcher determined the locations of virtual online communities of

practice where participants connect for professional development purposes and their

perceptions on the impact these online activities have on teacher practices. Teacher

participants shared and reflected their regular social media habits during the phone

interview.  The method of snowballing was utilized to obtain enough interview

participants. The first participant provided me information to contact the next participant

and so on until no other individuals contacted me for interviews.

**Data Analysis Process**

Data to answer the qualitative design questions were obtained using an online

survey, open-ended questionnaire, and a phone interview. To analyze the data collected

in these instruments, the researcher determined common themes, using *in vivo* coding,

that reflected back to the research questions. The *in vivo-coded* themes were developed by pulling out key words and phrases from the responses and using them as common headings. A similar *in-vivo coding* process was utilized with the open-ended questionnaire responses to determine commonalities and thematic links between responses. Because of the type of responses that were being elicited, the phone interview was analyzed not only for theme but also for specific quotes, *in-vivo coding*, as to the perceptions of participants about the nature of participation in virtual communities of practice. Ultimately, the data was used to answer the three research questions upon which this study was based.

**Summary**

In this research study, the social media perceptions and habits of connected educators, who participate in virtual community of practice, were provided by the careful selection of informants, research instruments, study design, and procedures for analyzing data. The qualitative data obtained from the responses from the surveys, open-ended questions, and phone interview provided the data necessary to understand the experiences of teachers who utilize online community of practice for perceived professional development needs. The research results are summarized in Chapter Four.

**Chapter Four – Results**

**Introduction**

The purpose of this research study was to determine educator practices and perceptions of social media usage for professional development. The thematic analysis for the data that was collected in this study was derived from online surveys, open-ended questions, and phone interviews. *In-vivo coding* was used to determine key words and phrases in the open-ended responses. The keywords were then grouped together under common themes. The analysis of the data was organized based upon the three research questions.

For the purposes of this research study, educators/staff were public school administrators, at both the building and central office levels, and K-12 classroom teachers and staff. Demographic data was compiled from survey questions one and two (see Tables 4.1 & 4.2). The following categories show the breakdown of the 31 educator participants: elementary school teachers (n=14), middle school teachers (n=4), high school teachers (n=9), and other category, administration and guidance staff, (n=5). One participant skipped the question completely leaving on thirty actual participants. The results do not equal one hundred percent because participants could mark multiple areas if applicable.

Table 4.1

*Educator Demographics: Grade Levels*

| Elementary School | Middle School | High School | Other |
|---|---|---|---|
| 14(46.67%) | 4(13.33%) | 9(30%) | 5(16.67%) |

*Note: N = 31*

Others who agreed to participate consisted of one multiple-disabilities support teacher, one K-12 emotional support, one speech therapy, and two district level administrators. Thirty-one educators (N=31) participated in the study. Among the participants, 46.67% were elementary teachers (n=14), 13.33% were middle school teachers (n=4), 30% were high school (n=9), and 16.67% were other educators (n=5). The majority of educator participants, 56.67%, have been in public education between 11-15 years, with only 33% in education two-ten years, and 10% reporting that they were in their first year of experience (See Table 4.2).

Table 4.2

*Educator Demographics: Years of Service*

| First Year | 2 to 6 Years | 6 to 10 Years | 11 to 15 Years | 16 to 20 Years | 21 to 30 Years | 31+ Years |
|---|---|---|---|---|---|---|
| 3(10%) | 3(10%) | 7(23.3%) | 8(26.6%) | 6(20%) | 2(6.6%) | 1(3.3%) |

*Note: N = 31*

**Research Question One**

Research question one asked how teachers are using social media platforms to develop virtual communities of practice (VCoP) that are leveraged to solve perceived problems at the classroom level. Survey questions five and fourteen focused on participants' general involvement in virtual communities of practice. Open-ended questions six and fifteen allowed participants to further explain their unique personal experiences surrounding social media usage. Finally, the first phone interview question asked participants about the triggering moment for the initial use of a social media or Web 2.0 tool.

**Survey.** Table 4.3 shows the participants responses to survey question five: Are you a member of any of the following general social networking websites for personal or professional purposes or networking? (Please indicate all that apply.) The responses were tallied and placed into a table. (See Table 4.3)

Table 4.3

*Social Media Membership*

| N | FB | G+ | LI | T | I | E | P | O |
|---|----|----|----|----|----|----|----|----|
| 0(0.0) | 20(66.6) | 13(43.3) | 12(40) | 20(66.6) | 7(23.3) | 6(20) | 18(60) | 3(10) |

*Note. N=31.* N = none; FB = Facebook; G+ = Google Plus; LI = LinkedIn;
T = Twitter; I = Instagram; E = Edmodo; P = Pinterest; O = Other.

Participants were asked to select all the social media sites that they held a current membership. Of the total participants (N=31) who responded to this survey question, a majority selected Twitter (n=20) and Facebook (n=20). Eighteen participants selected Pinterest, and the next closest was Google+ (n=13). LinkedIn had twelve responses and Instagram and Edmodo had seven and six respectively. Three of the participants mentioned membership in other sites to include: Wiki, Skype, YouTube, and SAS groups, Pennsylvania Department of Education website and virtual community of practice.

In order to determine validity of responses, question five was repeated in a slightly different format later in the survey. Table 4.4 shows the participants responses to question fourteen which asked which of the following Web 2.0 tools are you currently using for professional development and/or networking?

Educators were asked to select all of the Web 2.0 tools that they currently use to meet their professional development needs in a virtual setting. Of the total participants

(N=31) who responded to this survey question, Google Drive was the most frequently

used (n=19). Fifteen participants selected YouTube. Fourteen participants selected both

social networks and Wikis while thirteen participants selected Blogs.

Table 4.4

*Web 2.0 Tools Membership*

| | |
|---|---|
| Google Drive | 19(63.3%) |
| YouTube | 15(50%) |
| Social Networks | 14(46.6%) |
| Wikis | 14(46.6%) |
| Blogs | 13(43.3%) |
| Webinars | 8(26.6%) |
| Social Bookmarking | 7(23.3%) |
| None | 6(20%) |
| Podcasts | 5(16.6%) |
| Instagram | 4(13.3%) |
| RSS Feeds | 4(13.3%) |
| Other | 1(3.3%) |

*Note. N=31*

Webinars and social bookmarking came in with eight and seven responses respectively.

Six participants selected that they do not use any Web 2.0 tool. Five participants selected

podcasts. Instagram and RSS feeds came in together with four participants selecting these

tools. Finally, only one participant selected to provide an alternative Web 2.0 that was not

listed: email.

**Open-ended responses.** Educators were asked to complete two open-ended

questions, six and fifteen, as follow up responses to survey questions five and fourteen.

Open-ended question six asked, "Which of the sites in question five do you use most

frequently for professional development and/or networking? Why?" Thirty participants

out of thirty-one participants responded to these two prompts. The following themes emerged from *in-vivo coding* the various responses. Participants stated that it was the professional collaboration and connections that caused them to seek out social networking sites. Through these collaborative sessions the individual participants participated in the development and dissemination of lesson plan development and classroom ideas that keep pace with the current trends in public education. It is important to note that some participants did respond that they are not members of social networking sites. For example, one participant stated, "I do not use any [social networking sites] for professional development." Another participant stated, "None at the moment because of changes in my job are taking up all of my available time."

Open ended prompt fifteen asked participants to consider, "Please select one of the responses from question fourteen and elaborate on how it has improved your professional activities." Five participants skipped this question leaving only twenty-six responses. Of the participants (N=26) who responded with their personal perspectives, three common themes emerged. The participants saw an increase in professional work flow by allowing for the collaboration of colleagues in an asynchronous work environment. Individuals could participate and upload content when it suited their busy schedules. Next, participants stated that using YouTube allowed for virtual co-teaching of difficult concepts and skills from a teacher with a different perspective. This allowed for differentiation of instruction for students. Finally, participants appeared to enjoy the self-reflection that occurs during the activity of blogging. One participant responded,

> Blogging has been one of the most rewarding professional activities I have
>
> done in the past five years. This self-reflective platform has caused me to

think deeper about educational topics and issues. I appreciate being able to

share my thoughts with an authentic audience.

A second participant stated,

Reading blogs has been very beneficial for me as a special education

teacher. Since I teach students with such severe disabilities, I have found

that there are very few websites focused on the diverse group. I have

found a few blogs of teachers who teach special education and they have

been very helpful. It is great reading and seeing what other teachers are

doing in their MDS classrooms!

Finally, a third participant described her use of blogs,

I have visited numerous blogs and have gained many resources, ideas,

and links to related topics. I also keep my own blog for my classroom and

look to link with other blogs in the future.

The personal benefits to blogging are enhanced when colleagues and other professionals

have the opportunity to comment on posts.

**Phone interview.** Interview question one provided clarity as to individual teacher

perspectives regarding the trigger for social media participation. One administrator and

three classroom teachers responded to this question with thoughtful insights. The first

interview prompt stated, "What triggered your participation in a social media site, Web

2.0 tool, or online community of practice?" The administrative participant AP1 said that

it was out of a "necessity for efficiency" that triggered the use of Google Drive to record

the teacher effectiveness evaluations for the entire district.  He went on to express that

time constraints on district staff prevented the face-to-face meetings that were required to

analyze district data and make the best decisions as to professional development offerings to the staff. The use of Google Drive allowed for a "continuing dialogue while we [administrative team] weren't in the room."

The teacher participants (TP2, TP3, and TP4) all responded that the trigger for their professional involvement in an online community of practice or Web 2.0 tool was increased student engagement and learning. TP2 went on to say,

Well, several years ago I started receiving training in an alternative

method of teaching foreign languages called TPRS…which is called total

physical response storytelling. And it's pretty new… and it's a powerful

research based way of teaching foreign language and of acquiring foreign

language. And it just happens to be that this community of people

developed a list serve online…a forum where we could…everyone around

the world who is experimenting with this method can get together… and

that was my first experience with this kind of a web-based

community…where you can go on literally the night before a class with a

question…post your question…and get incredible feedback from around

the world by the next morning before class starts.

TP3 explained the triggering moment with the following quote,

I use those resources because of the amount of information and material

that is available that way. And you can look for specifically what it is that

you are looking for as opposed to attending all these different things

hoping that something will be useful.

Finally, TP4 explained,

Wanting to meet the needs of my students…

[Do you mind elaborating a little bit on that?]

…Well, with budget cuts and having to use materials that are

outdated…that was not what I considered professionally acceptable.

Particularly, since I had the Internet available and I could go in and get

what I needed that would be specifically for my students.

**Thematic analysis.** AP1 stated that his use of the Web 2.0 tool Google Drive was triggered by the "necessity for efficiency." One of the interesting underlying elements of this phone interview response was that AP1 was hesitant to list Google Docs as a Web 2.0 tool. Once it was established that this was indeed a social media tool, the participant explained that he liked how it allowed his administrative team to work asynchronously on projects without having to be "in the room."

TP2, TP3, and TP4 all stated very similar triggering responses to why they turned to virtual communities of practice for professional development. All three participants were looking for an alternative method of communicating and collaborating with others who share the same teaching practices. TP1 explained that he was attempting to make his classroom more student-centered and sought out a new pedagogical technique called TPRS (Total Physical Response Storytelling). The practitioners of this technique formed a new Community of Practice. As the only person in his school who was attempting to implement this model, TP1 decided to turn to a virtual community of practice for support by using his social media site, FL Teach. He explained that he was able to transcend physical boundaries and receive answers to his specific questions from other foreign language teachers who were also implementing TPRS. This personal and direct virtual

professional development caused him to become a permanent participant in this virtual community of practice.

TP3 & TP4 were also looking to join virtual communities of practice around their specific subject area of practice, but they cited different reasons then TP1. TP4 explained that recent budget cuts were limiting the resources that were available to her for classroom use. Teacher participant four began to feel a loss of a level of professionalism as a result of the limited resources. TP4 and TP3 both stated that they turned to virtual communities of practice separately to locate resources and materials that would enhance the quality of instruction in their respective classrooms. Both teachers TP3 and TP4 as well as TP2 seemed to feel a professional obligation to use the Internet to search out resources that enhance their professional practices.

**Research Question Two**

Research question two asked, *What are the social media habits of K-12 educators attempting to build a virtual community of practice?* This research question addressed the types of habits educators develop as they begin to utilize virtual communities of practice and Web 2.0 tools. Survey questions three, seven, nine, and twelve focused on the perceptions of educators as to their social media habits. Open-ended questions four and thirteen allowed for participants to elaborate on their survey choices. Phone interview questions two and three were designed to allow for a more in-depth analysis of social media habits.

**Survey.** Table 4.5 shows the educator participants responses to question three: Are you currently a member of, or have you ever joined, a social networking website for

professional reasons? One participant skipped through this question leaving on thirty participants.

Table 4.5

*Professional Social Networking*

| Yes | No |
|---|---|
| 23(76.6) | 7(23.3) |

Note: N = 31

Seventy six percent of the participants (n=23) stated that they had joined a social media website. Seven participants or 23% stated that they had never joined a social media website for professional reasons.

Table 4.6 illustrates the participants' responses to survey question number seven: "Please indicate how frequently you visit your preferred social media sites for professional reasons." The responses were recorded in one of the four temporal categories: *daily*, *weekly*, *periodically*, or *seldom/never*. Thirty percent (n=30) stated that they visit a social media websites for professional reasons on both daily and weekly basis. Twenty percent (n=6) stated that they visit social media website or Web 2.0 websites periodically for professional reasons. Finally, 20% (n=6) said they *seldom/never* use Web 2.0 websites for professional purposes.

Table 4.6

*Frequency of Personal and Professional Social Media Site Usage*

| Daily | Weekly | Periodically | Seldom/Never |
|---|---|---|---|
| 9(30) | 9(30) | 6(20) | 6(20) |

*Note. N = 31*

Table 4.7 illustrates the participants' responses to survey question number nine: "Do you use separate social networking accounts for your personal versus professional activities?" The responses were recorded in one of the four categories according to levels of time that accounts remained separate: *all*, *most*, *some*, and *none*.

This survey section asked participants to share the level of distinction that users make in their personal and professional use of social media, Web 2.0 tool, or virtual community of practice. Nearly 36% or eleven of the thirty participants stated that they always keep their personal and professional social networking websites separate.

Table 4.7

*Personal Versus Professional Social Media Usage.*

| All | Most | Some | None |
|---|---|---|---|
| 11(36.6) | 8(26.6) | 5(16.6) | 6(20) |

*Note. N = 31*

Eight participants or 27% stated that they differentiate most of the time. Twenty percent (n=6) stated that they don't make any distinctions between personal and professional websites. On participant skipped through the survey leaving on thirty actual participants. Finally, 17% (n=5) of the participants responded that they keep their accounts separate some of the time.

Table 4.8 illustrates the participants' responses to survey question number twelve: "How likely are you to join a new or additional social networking site in the next 12 months for professional development or networking?" The responses were recorded in one of the three categories of joining: *very likely*, *somewhat likely*, and *not likely*.

Table 4.8

*Likelihood of Joining a New Social Networking Site*

| Very Likely to Join | Somewhat Likely to Join | Not Likely to Join |
| --- | --- | --- |
| 6(20) | 13(43.3) | 11(36.6) |

*Note: N = 31*

This survey section asked participants to share the level of likelihood that they would join a social network within the next 12 months. Nearly 43% (n=13) stated that they are somewhat likely to join. Eleven participants or 37% stated that they are not likely to join. Twenty percent (n=30) stated that they are very likely to join a new social media site or virtual community of practice.

**Open-ended responses.** Educators were asked to complete open-ended questions four and thirteen as follow up responses to survey items three and twelve. Open-ended question four asked, "If you answered 'yes' in question three, what was your reasoning for using social media for professional development and/or networking?" Eight participants skipped this question resulting in twenty-three total responses. The responses for this survey question could be categorized into three thematic categories: collaboration, staying current with research, and sharing resources. The participants suggested that by using social media they could remain current in their field while locating and sharing the best practices in their respective fields of practice. One participant stated, "I joined Twitter to connect and share resources with other educators." While another participant shared, "Keep abreast of current research, methods of teaching, and professional dialogue about educational issues." The trend continued with a third participant stating, "I use Pinterest for speech therapy ideas, and I use Facebook to stay in touch with my professional organizations."

Open-ended prompt thirteen asked participants to consider providing "specific support for your response to question number twelve." All thirty participants responded to this particular prompt. The comments could be divided into positive and negative tone responses. Of the negative responses there were several themes that emerged. Participants perceived that social media was a professional infringement upon personal time and asked for too much commitment from the user. Others felt that they were already members of the site that were of the most benefit while some posited that they were merely Luddites with a distaste for all technology applications. One participant stated, " I haven't used the ones I belong to and pressures from the job and the technology I need to use leave little time to experiment with others." In the positive category, users felt that positive building-level tech support about current education based applications prompted the desire to join more social networking websites. Another theme that emerged yet again was the desire to collaborate with other educators within the same discipline to get job-embedded advice for specific pedagogical issues.

**Phone interview.** Interview questions two and three provided more detailed support into the collective habits of educators who participate in social media for professional development. Again, one administrator and three classroom teachers agreed to participate in the interview phase of the study. The second interview prompt stated, "What social media site, Web 2.0 tool, or online community of practice did you explore? Why?" The administrative participant AP1 stated, "The one we used was Google Docs and that was the one that most folks were most comfortable with."

Participants TP2 and TP3 both provided responses about using subject-specific sites that were directly related to their content. TP2 stated that FL Teach was a website

that was utilized "on a consistent basis" because it is a "worldwide community of foreign language teachers…hosted out of the University of New York at Cortland."

TP3 also clarified the initial response with the following quote about consulting her own German-language VCoP:

>"I couldn't really find that information anywhere else that would be applicable to me in the classroom."

TP4 also had some insightful comments about the VCoP that she utilizes on a consistent basis: *Francois Facile*,

>It is a forum where teachers that teach French around the world provide tests, videos, MP3s, files, pre-made lessons, pre-made tests that you can download and modify if you want for your own class…it is a service that is offered in Europe, as are some of the other sites for languages in Europe that have been around for the last 25 years, and it is free to teachers.

Interview question three stated, "Approximately how long were you actively engaged in this social media site, Web 2.0 tool, or online community of practice? Why?" The administrative participant AP1 stated that the Google Drive tool is used on an as-needed basis with different groups within the district. This participant also conceded that teacher groups, although not mandated by the district, have utilized Google Drive on a more consistent basis.

The teacher participants' responses ranged from hours to decades based upon the interpretation of the question. TP3 responded that the last social media session meant to find answers to classroom problems lasted about an hour and half until an adequate

solution was found. The other two teacher participants (TP2 and TP4) both talked about the totality of their membership in their virtual communities of practice. TP2 stated that the membership was started in 2003 and continues to the present. TP4 stated that her membership has lasted for 20 years. When asked to clarify why, she stated,

> Because in the United States on Google, Yahoo, Hotbot, etc., they started doing something like this for foreign language about ten or twelve years ago. A lot of the other stuff was to sell stuff that was not set up for language acquisition, but their advertising said otherwise.

TP2 also clarified his response with the following statement,

> But it is kind of the 'goto' place for not just this methodology of teaching Spanish…but also of ideas for any kind of foreign language classroom. It's just been ah…when you need a tool you reach into your toolbox and this has just always been there. It is just a natural first stop, if you don't mind me using that metaphor.

**Thematic analysis.** Survey questions seven and nine asked participants to select a response that matched their current social media habits in usage rates and separation of personal and private usage respectively. The data indicate that a majority of participants are checking social media sites on a daily/weekly basis (60% of participants). When considered with the data in question nine an interesting theme emerges. The data from question nine leads one to believe that participants are delineating between their professional and personal social media usage. Thirty six percent of the participants make an effort to separate their personal and professional virtual communities of practice and

Web 2.0 tools. Educators are spending time daily/weekly on professional development virtual communities of practice as professionals.

Survey question three asked participants to indicate whether or not they have ever joined a social networking website for professional reasons. Seventy seven percent (n=23) of participants responded that they have joined a social media site looking for professional development in one form or another. Open-ended question four sought support for selections in survey question three. Three themes emerged from the responses. Participants stated that they join these professional social media networks to collaborate with others who share the same experience, teaching/administrative practices. Another reason that was cited by participants was a need to stay current with trends in education. The educational reform movements are moving at such a rapid pace that districts cannot keep up with their static professional development days. Participants feel that social media participation allows one to stay current and relevant. Finally, the last theme that emerged is the sharing of practices by those who teach in similar content areas. Teachers are joining these networks in search of materials that have been used and vetted by other teachers within their content areas. For example one participant stated, "I joined a listserve for the purpose of following and staying current with the best foreign language teaching practices." Another participant also stated, "Connect with other professionals in my subject area and interests to share resources and be a better teacher for my students."

Survey question twelve asked participants to respond to the likelihood that they would join a new social media site or Web 2.0 tool in the future. Sixty three percent (n=19) of participants responded that they would join a new social media site. Open-

ended question thirteen sought out the reasoning behind why participants would be

willing to join another social media site or virtual community of practice. The thematic

connections that were gleaned from the data fell into both positive and negative topics.

Of the 37% of participants who responded that they would not want to join a social media

site in the future, the reasoning fell upon a perceived infringement of professional

responsibility on personal time. One participant stated, "Don't have the time." While

others stated that it was just too much of a time commitment to be an active member in a

virtual community of practice. The final negative thematic link in the data suggested that

people were content with the virtual communities of practice that they were already

members of and did not seek out new collaborative or communicative venues. On the

positive side of the thematic spectrum, participants stated that strong tech support and

supportive collaboration were the reasons that they would continue to seek new virtual

communities of practice to join.

In phone interview questions two and three, AP1 statements can be combined for

a deeper clarity of understanding as to what social media site or Web 2.0 tool he used and

how long he used this tool. AP1 stated that he and his administrative team use the Web

2.0 tool Google documents because this is the one virtual tool "that most folks were most

comfortable with."  He went on to explain that this tool is also used by the faculty on a

case-by-case basis because of the asynchronous nature of the collaboration. Teams of

individuals can work together on a common document without having to be in the same

room at the same time. He admitted to the fact that his faculty more than likely uses

Google documents as a Web 2.0 on a more frequent basis than his administrative team.

TP2, TP3, TP4 all responded to phone interview questions two and three with responses that contain a common thematic thread. All three participants were looking to join a virtual community of practice that not only matched their subject area, foreign languages, but was specific to their specific language. TP2 stated that he used FL Teach because it allows him to be a member of a "worldwide community of foreign language teachers." He also stated that he has been a member of this virtual community of practice since 2003. TP3 stated that she joined a German-related website that allows for her to have access information "applicable to me [her] in the classroom" that she could find elsewhere. Finally, TP4 said that she is currently a member of the French website Francais Facile and has been a member for the last 20-25 years. This virtual community of practice provides its members "…tests, videos, MP3s, files, pre-made lessons, and pre-made tests that you can download and modify, if you want, for your own class." These participants were looking for a specialized form of professional development that spoke to the job-specific practices of their individual disciplines.

**Research Question Three**

Research question three: *How does a classroom teacher's social media participation in an online community of practice affect his/her everyday teaching practice?* This research question addressed educator participants' perceptions of the benefits of participation in online Communities of Practice. Survey question ten focused on the impact of social media usage on professional practices within the district. Open-ended questions eight and eleven allowed for participants to elaborate on their survey choices. Phone interview questions four and five were designed to allow for a more personal view into the perceived impact of social media usage on professional practices.

**Survey.** Table 4.9 shows the educator participants responses to question 10. The statement was categorized into one of three specific responses as to the relative value of the social network on professional development practices.

This majority of participants (n=25) found that the social media participation was *very valuable* and/or *somewhat valuable*. Five of the thirty participants found it *very valuable*; whereas, twenty found it *somewhat valuable*, and only five participants found it *not valuable*. One participant skipped through this question leaving only thirty participant responses.

Table 4.9

*Value of Using Social Media for Professional Development*

| Very Valuable | Somewhat Valuable | Not Valuable |
|:---:|:---:|:---:|
| 5(16.6) | 20(66.6) | 5(16.6) |

*Note: N = 31*

**Open-ended responses.** Educators were asked to complete open-ended questions as follow up responses to survey items. Open-ended question eight asked, "Please state the professional social networking site, if any, that you use most often to meet your professional development needs." Thirty participants out of thirty-one total participants answered this question. The most popular response was the social media site Twitter with nine respondents. Pinterest came in a close second with seven respondents, and five respondents responded that they *don't belong* to any social media site for professional development. Google+ came in fourth with three respondents and LinkedIn was fifth with only two participants. The following sites were listed by only one participant each: email, PLC Canvas, DIIGO, YouTube, Edutopia, Facebook, and American Model Teachers' Association website.

Teachers, administrators, and support staff were asked in question eleven to support in an open-ended response their selection in the survey question ten, "Please indicate the value of using social networks for professional development and/or networking to solve classroom issues or concerns." The responses can be divided into two opposing participant tones: positive and negative. Of the positive responses, there were two themes that developed. The first respondents called for collegial networking with many educators with different perspectives. They also stated comments about the use social media to learn current pedagogical trends and best practices. On the negative side of the responses, two themes also emerged from the collective responses. Some participants (n=3) did not think social media was a viable option because of the lack of personal or communal commitment. One participant stated, "Only valuable if all stakeholders are engaged and participate in the site/networking. PD [professional development] should be consistent among all stakeholders." Others responded (n=2) that they preferred professional development that utilizes face-to-face communication during the contractual school day. One participant responded, "I don't use electronic social networking to figure out problems. I talk face-to-face with teachers in the district or those who teach elsewhere."

**Phone interview.** Interview questions four and five provided the final pieces of data to answer the third research question. The fourth interview prompt stated, "If a solution was located by professional participation on the social media site, Web 2.0 tool, or online community of practice, please provide a small narrative of the implementation of the solution and its outcome." The administrative participant AP1 stated that the

district administrative team leveraged Google Drive to keep a running record of all the

teacher effectiveness evaluations.  The AP1 further stated,

> It was very revealing. What we found out was that our areas of weakness
>
> in the district are in criterion 3d and 3c [Danielson Framework]…which is
>
> the heart of teaching… Of all the scores in all of the domains they were
>
> the lowest areas…and they are probably the most important two criterion
>
> for teaching…and we discovered that using that tool.

Participants TP2 and TP3 both spoke along the general theme of improving their

instructional materials to facilitate enhanced student learning through differentiation and

formative assessment. TP2 further said,

> There was a teacher in Kansas; I think it was a lady who wrote back and
>
> had this like really easy to follow, detailed, choreographed, line-by-line
>
> instruction for me on how to teach that routine or procedure to my kids.
>
> That was one of those shazam moments where you go, 'Wow! This was
>
> cool. It really worked. That was from FL [Foreign Language]Teach.

Participant TP3 was not at the implementation phase for her most recent social

media discovery but was forming a plan when she was being interviewed.

The fifth interview prompt stated, "Please explain the professional value of using

the specific social media site, Web 2.0, or online community of practice to reach a

solution to your professional problem." AP1 stated that the use of Google Drive to track

teacher effectiveness evaluations allowed for "transparency, efficiency, and fluidity" in

data management. All the other teacher participants (TP2, TP3, and TP4) spoke about the

common theme of professional collaboration within the confines of their content-specific disciplines.

TP2 further explained the power of professional collaboration with others who share the same academic discipline,

Well I started teaching twenty years ago and for the first decade and a half…if you had a problem…and you needed a solution to it, you could go to your colleagues, maybe one or two in number, one or two people in the building might be able to help you out. And all of a sudden with this explosion in Web 2.0 communities…that number…you can literally ask your question of hundreds if not thousands of people…It has been a game changer.

TP3 clarified the effectiveness of the scope of professional collaboration in locating content-specific information for classroom teachers,

I think that being able to go on and actually pinpoint that information…also doesn't limit us…as far as I can talk to a German teacher in Germany now. I can link up with somebody in California. I am not bound to the demographics of my area…It is nice to have influence from other places…It is immensely valuable that we are able to collaborate a lot more and be more actively engaged in our professional development because we are the ones that are initiating that.

Only TP4 offered a response that clarified the specific role of an individual participant within a professional community of practice. TP4 explained,

I would definitely recommend, but I would give the caveat that expect…it

may not be true for other disciplines…for languages, expect to spend

hundreds of hours taking what you can get off of a website, Web 2.0

format and have to edit it and craft is so that it can be used for your own

students.

**Thematic analysis.** Survey question ten was designed to determine how valuable

the participants found social media usage for professional development. Eighty three

percent (n=25) of participants found their participation in a virtual community of practice

to be somewhat or very useful. Open-ended question eleven sought out the reasoning

behind the subjective ratings of the participants. The data responses indicated that the

reasoning behind the usefulness is the ability to collaborate in a collegial community and

stay relevant with the current trends and best practices in education. Of the 16.67% (n=5)

who rated that virtual communities of practice do not deliver what is promised, the

reasoning is the lack of personal or communal commitment of participants. Individuals

have to be committed to being active in a virtual community of practice for it to be

beneficial. Some do not have the personal spare time for such a professional

commitment. Others stated that they are very comfortable with the level of professional

development that they are currently receiving through traditional face-to-face methods.

The face-to-face community of practice of their individual district and school building

meet their collaborative needs.

In order to determine a cohesive response to answer research question three, it

was imperative that the responses to phone interview questions four and five be

combined before analysis. AP1 stated that the Web 2.0 tool Google documents proved

very useful for his administrative team. He explained that they use the virtual platform to track teacher observations across the district. They are currently using the Danielson Framework for Effective Instruction as their teacher-rating tool. Administrators from all over the district can collaborate asynchronously on the Google document. In using this Web 2.0 tool to collaborate and communicate district data on teacher effectiveness, they were able to determine that teachers, district-wide, showed weaknesses in criterion 3d and 3c. He stated, "no wonder we aren't doing well…we can't teach." This lead AP1 to state, "It was very revealing." The Web 2.0 tool allowed the community of administrators to see common weaknesses within the district and attempt to support teachers by providing professional development in those areas. Finally, AP1 stated that he would continue usage of this Web 2.0 tool because it allowed his administrative team the ability to be "transparent, efficient, and fluid" with their instructional leadership strategies.

TP2's responses to phone interview questions four and five, when combined yield an interesting insight into the benefits of virtual communities of practice on teaching practices. TP2 explained that he once had an issue with developing an appropriate seating arrangement in his classroom. He consulted his virtual community of practice, FL Teach, and a solution was provided by a virtual community member in Kansas. She provided him detailed instructions on how to adapt his physical classroom environment so that it would be more student-friendly. In the midst of explaining how he was able to solve this particular classroom issue, TP2 became very excited and began to talk about a parallel virtual community of practice that he is also a member of recently, Pinterest. Upon first mentioning this VCoP he stated, "I thought Pinterest was something that my mom and her friends were interested in only. It was only for ladies. How wrong I am!" He went on

to explain that searching the boards on Pinterest yielded a teaching aid for telling time in Spanish. This particular tool allowed him to better instruct his students because of a tool that was found using a social media platform. Ultimately, he responded to phone interview question five that joining virtual communities of practice "has been a game-changer" for this 20-year veteran teacher.

TP3 and TP4 had similar experiences with finding solutions in virtual communities of practice and their perception of its relative usefulness in professional development. TP3 stated that the original issue that triggered her to seek out answers on a social media site is still in need of a solution. Although she has spent time looking for answers in a multiple virtual communities of practice, she is still not ready for the implementation phase. Although the solution is still in the near future, TP3 stated that her experience in a virtual community of practice as been "immensely valuable." TP4 went in a slightly different direction and stated that she was able to differentiate lessons and assessments for students with "dysgraphia, dyslexia, and vision field" because of her involvement in a virtual community of practice. She explained that her virtual connection to the local intermediate unit has allowed her to digitize materials and have them translated into Braille for her students who suffer vision impairment. TP4 is supportive of professional participation in a virtual community of practice but offers the caveat that one should be mindful that shared materials made need some adaptation before successful implementation can occur in one's classroom.

**Summary**

Chapter Four reported the results of this research study using three research questions regarding the perceptions of educators on the impact of social media, Web 2.0

tools, and virtual communities of practice on professional development. The perceptions of administrators, teachers, and staff members were employed during the research phase of this study. Thirty-one educators were surveyed and provided with open-ended responses. Phone interview questions were constructed to delve into the rationales expressed in the survey questionnaire. Chapter Five contains the researcher's conclusions, relationship to other research, limitations, and implications for future research.

**Chapter Five – Discussion**

**Summary of the Study**

The purpose of this study was to determine the perceptions of educators who are seeking and actively participating in their own professional development using social media, Web 2.0 tools, or virtual communities of practice. The changing face of current, school reform policies are forcing classroom teachers to seek out pedagogical solutions to classroom issues on social media and/or Web 2.0 websites (Harwell, 2003; USDOE, 2010). Chapter Five provides a summary of the results, relationship to other research surrounding virtual professional development, and limitations and recommendations for future research.

**Summary of the Results**

The three research questions that guided this study focused on understanding the perceptions of educators, both administration/staff and teachers, who turn to social media or virtual communities of practice for professional development. Qualitative data was collected for analysis to determine answers to the research questions. The survey, open-ended responses, and phone interviews were analyzed to determine emergent themes and establish how educators are turning to virtual communities of practice to meet their professional development needs. The results have been organized in this section by the topic headings of the three research questions. Despite the differences in job descriptions and years of experience of the participants, the findings indicated that the research participants are joining virtual communities of practice to meet professional development needs and extend their community of collaboration beyond their face-to-face connections.

**Virtual communities of practice (VCoP) participation.** Research question one asked how educators are leveraging social media and Web 2.0 technologies to solve professional development needs. The reasons that these social networking and Web 2.0 tools are being used were supported by two open-ended questions. Four in-person interviews were conducted, and interview question one sought to determine the triggering event that caused the participant to seek out alternate means of professional development.

There were three trends or themes that emerged from the data about how educators use social networking websites and Web 2.0 tools. The use of social networking sites such as Twitter and Facebook allow users to connect with other educators in a safe collaborative environment. This type of interaction results in the sharing of effective lesson plan ideas. For others who turn to these types of virtual connections, they are looking to stay current with all the trends that emerge within the profession. Web 2.0 tools like Google Drive and YouTube allow users to work asynchronously on projects and increase their professional workflow. The ability for multiple team members to be able to participate on a collaborative document within a timeframe that suits their schedule allows for increased productivity. Other educators explained the power of many voices when working with subjects and materials. They expressed the power of differentiating content for students by allowing YouTube teacher channels and videos to be a mini virtual, lecture-based platform for instruction. Many participants reported that increased student engagement should be used as the ultimate test of a pedagogical intervention.

Another trend that appeared within this section of the study centered upon those educators who appear to be using social media and Web 2.0 tools to reflect upon their

profession in a format that allows for professional criticism and support. Blogging is a Web 2.0 tool wherein individuals have the power to self-publish their thoughts and feelings upon a subject and have others comment. This type of intense reflective endeavor allows for both individual and collective growth within the education profession.

**Social media habits of educators.** The second research question examined the habits of K-12 educators as they attempt to build a personal virtual community of practice for professional development. To gain an insight into this question the researcher asked survey questions three, seven, nine, and twelve. The responses in the survey questions were supported with more details gathered from open-ended questions four and thirteen. Open-ended question four provided deeper meaning into survey question three, and open-ended question twelve provided more insights into survey question twelve. Finally, phone interview questions two and three were used to truly reach an even deeper understanding of the habits of connected educators who participate in virtual communities of practice.

Of those educators who participated in the study, a majority of respondents reported joining a social networking site and visiting this site on a daily or weekly basis. These educators also expressed their habits around the belief that their social media usage should be sub-divided into personal and professional usage. Interestingly, a majority also stated that they would be likely to join another professional social media site. The reasons why educators have developed these professional habits is that it provides them with specific professional development support without much time or money. Teaching materials for specific-subject teachers seem to be outdated, so teachers turn to online resources. The difficulty is locating credible materials within an Internet where there are

no gatekeepers of information. Teachers reported that they rely on their VCoP to share resources and provide the type of job-embedded coaching that leads to increases in student  achievement. For those teachers who participated in the phone interviews, they reported their habitual use of VCoPs for over a decade.

    **VCoP impact on professional practice.** The third research question examined the impact of participation in a VCoP on the professional practice of educators. Survey question ten provided initial insights into this question. The responses in the survey questions were supported by open-ended questions eight and eleven. Open-ended question eleven provided deeper meaning into question ten. Finally, phone interview questions four and five sought a deeper level of clarity on the perceived impact of virtual communities of practice participation on professional practices.

    As evidenced in the summaries of the previous two research questions, educators are seeking professional development support using virtual communities of practice. This section of the study sought out educators' perceptions on how their participation in virtual communities of practice impacted their professional development. The majority found their usage of social networking sites like Twitter and Pinterest somewhat and very valuable for professional development. Professional collaboration with a cacophony of differing professional opinions allows for a richness of understanding that is just not felt in a face-to-face professional development setting. Several participants in the phone interview stated how they are not provided adequate professional development for their specific academic discipline. As a result of this perceived deficiency, these educators reported that they rely on their virtual communities of practice to help them stay current in the field and with differentiated materials for the classroom.

**Limitations Found in the Study**

Because of the nature of this qualitative study, there were some inherent limitations that do not allow the results to be generalized to other groups of educators. One limitation was the subjectivity involved in seeking out personal perceptions about research questions. The results could be changed as participants' change their perceptions with technology usage with both formal and informal professional development. The research study took place over the summer semester break. Because of the summer break from the professional schedule it was difficult for the researcher to elicit participation and responses from both teachers and administrators. In addition, the number of participants in the survey and open-ended questionnaire (N=31) was low with one person who skipped all of the responses. The phone interview participant group (N=4) was also much lower than the researcher was originally planning. The research sample also only included one administrator (AP1) and three classroom teachers. An additional limiting factor was that the three teachers were all from the same foreign language department. Thus, the results of this study cannot be applied to a broad spectrum of the general teaching population. Finally, the format of the survey and open-ended questionnaire was developed using an online research tool, *Survey Monkey*. The invitations to participate in the study were also issued in a digital format. Those individuals who are not comfortable with digital communication or collaboration may have been left out of the study because of the use of technology as the main form of communication. Furthermore, the researcher's participation in multiple, parallel communities of practice may have influenced responses during the phone interview.

**Relationship to Other Research**

The findings of this research study support the research of many current

educational researchers Matzat, in press; Shea & Bidjerano, 2010; and Lave & Wenger,

1991. The research results appeared to be consistent with the researcher's initial theories

as to social media habits of connected educators. As educational reform initiatives make

use of new research data, educators will have to take control over their own professional

development in order to meet the new rapidly changing demands of their profession. The

static, linear development of district-provided professional development may not be able

to provide the specific academic needs of classroom educators. In order to make sense to

the project as a whole, the following connections were made within the organizational

pattern of the initial research questions.

Research question one: How are teachers using social media platforms to develop

virtual communities of practice that are leveraged to solve perceived problems at the

classroom level?

Results for the data instruments in this section support the research of Matzat, in

press; Shea and Bidjerano, 2010; Lave and Wenger, 1991. Matzat (in press) and Shea

Bidjerano (2010) stated that teachers are seeking alternative forms of professional

development to supplement their current face-to-face school mandated trainings. Many of

the educators in the studies are participating in virtual communities of practice. Findings

of the current study suggest that this is a process that is also occurring in this research

location. As a result, local districts should extend the definition of professional

development to include these new practices. Teachers are participating at greater rates in

virtual communities of practice and are not receiving any professional development

credit. As an unchecked form of professional development, districts may have educators who are seeking development in theoretical areas that are not part of the district's vision statements.

Lave and Wenger (1991) suggested that communities of practice form when those who participate are involved in an activity that closely resembles authentic job-related scenarios. The findings of this study suggest that teachers are using Twitter and Pinterest to socialize and share information. The environments of these two social media platforms closely resemble the faculty room style atmosphere. Teachers can freely enter and leave and "sit down" with certain individuals based upon perceived commonalities. The hashtag system on Twitter allows English teachers to follow conversations that are relevant by searching for #engchat. All "tweets" that are tagged with this hashtag are available in one conversation thread for users. Pinterest works on a similar tagging approach, which allows users to follow only those community members who share a common practice. State departments of education should begin to develop platforms and district-level accountability measures for academic subject specific educators to develop virtual communities of practice. This would allow for the tracking of the time on task and richness of participation with teachers seeking specific pedagogical support within their field. It is important to note that organizations can only inspire and support such grass-roots initiatives. Once too many organizational restrictions are placed on this very personal form of professional development it might lose its appeal. Thus, reflection and reporting out strategies need to be open to allow for differentiation among individual professional learners to share their virtual learning artifacts with the administration and larger school community.

Research question two: What are the social media habits of K-12 educators attempting to build a virtual community of practice?

The research results that fall under the heading of this research question support the findings of Darling Hammond, et al. (2009), Casey & Evans (2011), Wenger (1998), Gulamhussein (2013), and Ostashewski & Reid (2010). Darling Hammond et al. (2009) stated that many individuals in their research sample report that professional development is a string of meaningless activities with no overall mission. All three of the teacher participants in the phone interview portion of the research project reported the need for content specific professional development that is relevant to their unique teaching environment. According to Casey and Evans (2011), new habits are forming around a form of professional development that does not rely on a centralized flow of information from an expert. Educators are forming what Wenger (1998) terms communities of practice where participants develop new identities as they move from novice to expert in virtual communities of practice. Many of the participants in the research study reported professional collaboration and the sharing of best practices as the reasons they seek parallel communities of practice outside their land-based schools. Most importantly is Ostashewski and Reid's (2010) findings that teachers are seeking professional development on personal time. The findings are consistent with this research base with a majority of participants reporting that they check their social media connections on a daily and/or weekly basis. Local school districts could benefit from establishing a virtual clearinghouse of professional development materials that are located and discussed on teachers' personal time. These local clearinghouses could be curated and include individual blogs of those teachers who wish to follow up the implementation of new

instructional and assessment strategies with professional reflection, i.e. blogs. This type

of professional virtual library allows for users to access the information asynchronously.

Research question three: How does a classroom teacher's social media

participation in an online community of practice affect his/her everyday teaching

practices?

The data that was collected to answer this research question was also consistent

with the findings of related researchers. Gulamhussein (2013) stated that professional

development can only be considered effective when it is consistent and on-going. Two of

the research participants (TP2 and TP4) both stated in the phone-interview portion of the

data collection that they have spent more two-decades as members of their respective

virtual communities of practice. Finally, Sun et al. (2013) stated that the only effective

measure of professional development is its ability to move an organization in a positive

direction. Considering that the results collected during the survey, open-ended responses,

and phone interviews, participants overwhelming found value in social media usage as it

provided them with a broader base for professional collaboration and with valuable

resources that could be tailored to fit any classroom situation.

School districts could be forward thinking while maintaining cost-effectiveness if

they embraced the individual efforts of those teachers who seek professional answers on

social media and Web 2.0 tools. The easiest method of recording their efforts would be to

initially in-service the staff on the Web 2.0 tool of blogging and simple social media

participation on Twitter. Allow the early adopters to seek their own solutions and this

type of professional development will grow from the bottom up. Informal meeting times

could be established where individuals drop-in if they require face-to-face support for the

virtual professional development. If this initiative is to succeed, it is vital to allow the individual educator to seek out new web portals and platforms for professional communication. Release from the district-sponsored, face-to-face professional development time could be provided to those educators who seek answers in a virtual community of practice and record their reflections. Just as freedom to seek virtual solutions needs to be granted, there must also be freedom for individuals to seek out the Web 2.0 tools used to share their professional reflections. Ultimately, the classroom teacher blogs or reflective media presentations could provide quantifiable data that social media and Web 2.0 participation is challenging educators to identify problems, seek virtual solutions, and reflect on their impact on student learning.

**Recommendations for Further Research**

This research study examined the self-perceptions of educators regarding their participation in social media and Web 2.0 tools to develop virtual communities of practice within one school district located in Pennsylvania. To add another dimension to the collective understanding regarding social media, virtual communities and professional learning gathered, this study should be replicated across the state of Pennsylvania. As budgets tighten, new technologies emerge and the speed at which educators must now learn, personal professional use of social media will likely need to become a viable alternative to support personalized, authentic, and ongoing professional development.

Additionally, it would also be interesting to research how districts document the amount of informal, educator-initiated professional development that is occurring in their district through the social media and virtual communities of practice. These informal groups could continue to exist and utilized to determine the course the district takes in

providing face-to-face professional development. Teachers who already use this type of virtual professional development could also be encouraged to share their findings and results with others in a face-to-face model. Professional collaboration could be enhanced within a district and/or building with the incorporation of virtual communities of practice. It would also be interesting to determine how the informal professional development actually supports the formal professional development plan.

Finally, it would be beneficial to actually target users on specific social media sites who have moved from legitimate peripheral participation to full participation as knowledge creator. Many educators have become professional experts in certain social media platforms and Web 2.0 tools. They could document their journey from participating on the edge of these web-based tools into actively creating and sharing their own content. This type of professional activity could encourage others to take a similar journey and seek a virtual community of practice for their own academic discipline. Ultimately, educators could have the power to differentiate their own professional learning while receiving hands-on, job-embedded support for new and emerging instructional and assessment strategies.

**Conclusion**

The K-12 educators in this research study represented a small population of teachers and administrators who are seeking alternative forms of de-centralized professional development. As the USDOE (2010) calls for more virtual communities of practice to form and improve education, research studies such as this one need to examine at the habits and impact of social media usage on professional practices. As the results of this study indicate, the informal professional development practices of

connected educators is improving the personal professional practices of educators. Educators are using social media to record their experiences and share their successes and failures with their professional community using social media and virtual communities of practice.

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**Appendix A**
**Educator Survey and Questionnaire**

*This survey and questionnaire was adapted and is being used with the permission of Lisa Schmucki, CEO & Founder of EdWeb.net.*

Dear Colleague,

Please complete the following survey that focuses on your social media usage to meet your on-going professional development needs in your school district. Please select all that apply for responses that require multiple answers. Please answer the open-ended extension questions in a short and concise manner. Your honest input and assistance in recording your social media habits is much appreciated by the researcher.

1. What grade level do you work with?
   - o Elementary school
   - o Middle school
   - o High school
   - o Other (Please specify below.)

2. How many years have you been in education?
   - o First year
   - o 2 to 5 years
   - o 6 to 10 years
   - o 11 to 15 years
   - o 16 to 20 years
   - o 21-30 years
   - o More than 30 years

3. Are you currently a member of, or have you ever joined, a social networking website for educational or professional reasons?
   - o Yes
   - o No

   3b. If yes, what was your reasoning for using social networking for professional development and/or networking?

4. Are you a member of any of the following general social networking websites that you use for professional development and/or networking? (Please indicate all that apply.)
   - o Facebook
   - o Google +
   - o LinkedIn
   - o Twitter
   - o Instagram
   - o Edmodo

        o   Other (Please specify below)

4b. Which of the above sites do you use most frequently for professional development and/or networking? Why?

5. Please indicate how frequently you visit your preferred social media sites for professional reasons.
    - Weekly or more frequently
    - Monthly
    - Periodically
    - Seldom/never

6. Please name the professional social networking site, if any, that you use most often to meet your professional development needs.
    - Other (Please specify below.)

7. Do you use separate social networking accounts for your personal vs. professional activities?
    - I use separate accounts all of the time.
    - I use separate accounts most of the time.
    - I use separate accounts some of the time.
    - No, I don't keep my personal and professional activities separate.

8. Please indicate the value in using social networks for professional development and/or networking to solve classroom issues or concerns.
    - Not valuable
    - Somewhat valuable
    - Very valuable

8b. Please elaborate on your response in question number 8.

9. How likely are you to join a new or additional social networking sire in the next 12 months for professional development and/or networking?
    - Not likely to join
    - Somewhat likely to join
    - Very likely to join

9b. Please elaborate on your response in question number 9.

10. Which of the following Web 2.0 tools are you currently using for professional development and/or networking?
    - Blogs
    - Photo sharing (Instagram)
    - Video sharing (YouTube)
    - Document sharing
    - Social bookmarking

- o Webinars
- o RSS feeds
- o Podcasts
- o Social Networks
- o Wikis
- o Other (Please specify below)

10b. Please elaborate in more detail on your professional activity on any one of the responses in question 10.

**Appendix B**
**Phone Interview Script**

*This reflection was adapted from a survey and is being used with the permission of Lisa Schmucki, CEO & Founder of EdWeb.net.*

Dear Educator,

Thank you for your willingness to participate in this phone interview. For research purposes this phone call is being recorded and transcribed to capture the conversation.

Your participation in this study is completely voluntary and you may refuse to participate, or withdraw from the study at any time without consequence or prejudice. Confidentiality will be maintained during the entire study, with participants remaining anonymous. **Do you, *insert name*, consent to be a participant in this study?**

I welcome questions about the study at any time. Any questions you have about the research may be directed to me Gregory M. McGough, at (717) 951.0511 or by email at gregg.mcgough@pennmanor.net ; or my dissertation chair, Dr. Margaret Schooling, Education Department, 1145 King Road, Office 234 Loyola Hall, Immaculata University, Immaculata, Pennsylvania, 19345; or phone (610)647-4400 ext. 3658.

Any questions you have about your rights as a research subject may be directed to Dr. Tom O'Brien, at (610) 647-4400 ext. 3221; or by email at tomobrien@immaculata.edu .

*This phone interview was adapted from a survey and is being used with the permission of Lisa Schmucki, CEO & Founder of EdWeb.net.*

**Directions**: The following five questions were written to explore the

1. What is the purpose of your professional development participation in a social media site, Web 2.0 tool, or online community of practice?

2. What social media site, Web 2.0 tool, or online community of practice do you use most frequently to explore for professional solutions? Why?

3. Please provide a small narrative of a solution that was located on a social media site, Web 2.0 tool, or online community of practice that was implemented into your classroom.

4. Approximately how long are you actively engaged in professional social media sites, Web 2.0 tools, or online communities of practice?

5. Please indicate the value of using the specific social media site, Web 2.0 tool, or online community of practice to reach a solution to your professional development problem.

**Appendix C**
**IMMACULATA UNIVERSITY RESEARCH ETHICS REVIEW BOARD**
**REQUEST FOR PROTOCOL REVIEW – REVIEWER'S COMMENTS FORM**
**(R1297)**

**IMMACULATA UNIVERSITY RESEARCH ETHICS REVIEW BOARD**
**REQUEST FOR PROTOCOL REVIEW--REVIEWER'S COMMENTS FORM**
**(R1297)**

**Name of Researcher:** Gregory McGough

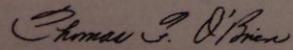**Project Title:** Perceptions of Professional Development in Virtual Communities of Practice

**Reviewer's Comments**

Your proposal is **Approved**. You may begin your research or collect your data.

PLEASE NOTE THAT THIS APPROVAL IS VALID FOR ONE YEAR **(365 days)** FROM DATE OF SIGNING.

**Reviewer's Recommendations:**

_____ Exempt          **X** **Approved**
_____ Expedited       _____ Conditionally Approve
_____ Full Review     _____ Do Not Approve

_Thomas F. O'Brien_                     May 20, 2014
_____          _____
Thomas F. O'Brien, Ph.D., Ed.D.                DATE