School Leader Use of Social Media for Professional Discourse

Candice Barkley
Virginia Commonwealth University

Follow this and additional works at: https://scholarscompass.vcu.edu/etd
Part of the Educational Leadership Commons

© The Author

Downloaded from
https://scholarscompass.vcu.edu/etd/2701

This Dissertation is brought to you for free and open access by the Graduate School at VCU Scholars Compass. It has been accepted for inclusion in Theses and Dissertations by an authorized administrator of VCU Scholars Compass. For more information, please contact libcompass@vcu.edu.
SCHOOL LEADER USE OF SOCIAL MEDIA FOR PROFESSIONAL DISCOURSE

A dissertation submitted in partial fulfillment of the requirements for the degree of Doctor of Philosophy at Virginia Commonwealth University

by

Candice Kaye Apple Barkley
M.Ed., University of Missouri-Columbia, 1999
B.A., Stephens College, 1996

Director: Dr. Jonathan D. Becker, J.D, Ph.D.
Assistant Professor, Department of Educational Leadership

Virginia Commonwealth University
Richmond, Virginia
April 2012
Acknowledgement

I wish to thank my committee members for their commitment and support. First, Dr. Jonathan Becker, I thank for his encouragement and assistance. From the initial independent study to finding Connected Principals, he believed in this study and supported my use of different methodologies. In addition, his continued support whether allowing me to bring my son to meetings or just repeating my graduation date to me, was invaluable. He will always have my gratitude for getting me to the finish line. I also want to thank Dr. Harold Wright and Dr. Joan Rhodes for their questions, comments, and suggestions. I am honored that such outstanding faculty would take the time to be on my committee despite never having me as a student. Finally, I want to thank Dr. Jennifer A. Johnson for venturing over to the School of Education. I hope that we might encourage others to incorporate Social Network Analysis into educational research.

In addition, I must thank Dr. Jo Lynne DeMary for her compassion, understanding, and encouragement. I might not have made it to this point without her guidance. At the most difficult time imaginable, she sought ways for me to continue, while I dealt with more important matters.

Long before I could even think about this dissertation, my “cohorties” were there with me. We did so much of this together, as well as celebrating milestone such as birthdays, babies, and marriages, that I cannot imagine this process without them.

Last but not least, I thank my family. My parents, Vance and Linda Apple, always believed in me and whatever feat I set out to accomplish including this degree.
My dear friend, Brigette Newberry, whom I consider family, made this dream possible with her encouragement and willingness to take on the role of Aunt Briggie. Another dear friend and sister, Beth Collier, was a fresh set of eyes when mine were very tired. My husband, Chuck, has believed in me, supported me, and done anything possible to help me reach this goal, his love and support has meant everything. Finally, my little man, Sam, unknowingly gave up time with mommy so that I could pursue another dream. I thank God for each of you everyday, I love you.
Dedication

This degree is in loving memory of my grandparents, Pete and Edna Apple.
You taught me about hard work, honesty, love, and so much more. I hope I have made you proud. If I have accomplished that, there is no higher honor.
# Table of Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acknowledgements</td>
<td>ii</td>
</tr>
<tr>
<td>Dedication</td>
<td>iv</td>
</tr>
<tr>
<td>List of Tables</td>
<td>ix</td>
</tr>
<tr>
<td>List of Figures</td>
<td>x</td>
</tr>
<tr>
<td>Abstract</td>
<td>xi</td>
</tr>
<tr>
<td>Chapter</td>
<td></td>
</tr>
<tr>
<td>1 INTRODUCTION</td>
<td>1</td>
</tr>
<tr>
<td>Brief Overview of the Study</td>
<td>2</td>
</tr>
<tr>
<td>Study Significance</td>
<td>2</td>
</tr>
<tr>
<td>Literature/Research Background</td>
<td>3</td>
</tr>
<tr>
<td>Research Questions</td>
<td>4</td>
</tr>
<tr>
<td>Methodology</td>
<td>4</td>
</tr>
<tr>
<td>Summary</td>
<td>5</td>
</tr>
<tr>
<td>2 REVIEW OF LITERATURE</td>
<td>7</td>
</tr>
<tr>
<td>Introduction</td>
<td>7</td>
</tr>
<tr>
<td>Definitions</td>
<td>8</td>
</tr>
<tr>
<td>Theoretical Framework: Social Capital</td>
<td>9</td>
</tr>
<tr>
<td>Professional Development</td>
<td>12</td>
</tr>
<tr>
<td>Teachers</td>
<td>12</td>
</tr>
<tr>
<td>Principals</td>
<td>13</td>
</tr>
<tr>
<td>Section</td>
<td>Page</td>
</tr>
<tr>
<td>------------------------------------------------------------------------</td>
<td>------</td>
</tr>
<tr>
<td>Informal Learning and Communities of Practice</td>
<td>15</td>
</tr>
<tr>
<td>Social Media</td>
<td>18</td>
</tr>
<tr>
<td>Social Network Sites</td>
<td>18</td>
</tr>
<tr>
<td>History and Growth of Social Media Technology</td>
<td>19</td>
</tr>
<tr>
<td>Blogging and Microblogging</td>
<td>20</td>
</tr>
<tr>
<td>Virtual Communities of Practice</td>
<td>21</td>
</tr>
<tr>
<td>Summary</td>
<td>24</td>
</tr>
<tr>
<td>3 METHODOLOGY</td>
<td>26</td>
</tr>
<tr>
<td>General Design</td>
<td>26</td>
</tr>
<tr>
<td>Setting of the Case</td>
<td>27</td>
</tr>
<tr>
<td>Data Collection</td>
<td>30</td>
</tr>
<tr>
<td>Data Analysis</td>
<td>32</td>
</tr>
<tr>
<td>Content Analysis</td>
<td>33</td>
</tr>
<tr>
<td>Blog Post Analysis Process</td>
<td>33</td>
</tr>
<tr>
<td>Interview Analysis Process</td>
<td>34</td>
</tr>
<tr>
<td>Social Network Analysis</td>
<td>35</td>
</tr>
<tr>
<td>Rigor of Study</td>
<td>37</td>
</tr>
<tr>
<td>Ethical Considerations</td>
<td>38</td>
</tr>
<tr>
<td>Limitations</td>
<td>39</td>
</tr>
<tr>
<td>4 FINDINGS</td>
<td>40</td>
</tr>
<tr>
<td>Introduction</td>
<td>40</td>
</tr>
<tr>
<td>The Connected Principals Story</td>
<td>41</td>
</tr>
<tr>
<td>Table 1: Connected Principals’ Blog Contributor Information</td>
<td>30</td>
</tr>
<tr>
<td>----------------------------------------------------------</td>
<td>----</td>
</tr>
<tr>
<td>Table 2: Connected Principals’ Blog Topic Information</td>
<td>44</td>
</tr>
<tr>
<td>Table 3: Connect Principals’ Twitter Network Measures of Centrality</td>
<td>63</td>
</tr>
<tr>
<td>Table 4: Communities of Practice vs. Affinity Spaces</td>
<td>75</td>
</tr>
<tr>
<td>Figure</td>
<td>Title</td>
</tr>
<tr>
<td>--------</td>
<td>----------------------------------------------------------------------</td>
</tr>
<tr>
<td>Figure 1</td>
<td>Communities of Practice Generating Social Capital</td>
</tr>
<tr>
<td>Figure 2</td>
<td>Connected Principals’ Homepage</td>
</tr>
<tr>
<td>Figure 3</td>
<td>Connected Principals’ First Year Frequency of Blog Posts</td>
</tr>
<tr>
<td>Figure 4</td>
<td>Sample Blog Posts’ Title Word Cloud</td>
</tr>
<tr>
<td>Figure 5</td>
<td>Sociograph of Connected Principals’ Twitter Network</td>
</tr>
<tr>
<td>Figure 6</td>
<td>Sociograph of Connected Principals’ Twitter Network Subgroups</td>
</tr>
<tr>
<td>Figure 7</td>
<td>Sociograph of Connected Principals’ Twitter Network/Node Size by Degree</td>
</tr>
<tr>
<td>Figure 8</td>
<td>Affinity Spaces Generating Social Capital</td>
</tr>
</tbody>
</table>
Abstract

SCHOOL LEADER USE OF SOCIAL MEDIA FOR PROFESSIONAL DISCOURSE

By Candice Kaye Apple Barkley

A dissertation submitted in partial fulfillment of the requirements for the degree of
Doctor of Philosophy at Virginia Commonwealth University

Virginia Commonwealth University, 2012

Major Director: Dr. Jonathan D. Becker, J.D., Ph.D.
Assistant Professor, VCU School of Education

The purpose of this case study was to explore how a group of principals from
diverse backgrounds and different locations create and perpetuate a virtual community of
practice. This investigation is a case study of Connected Principals, a group that has
come together to create a regular blog on significant issues within education and the
principalship. In addition, this group regularly disseminates pertinent information on
Twitter via a hash tag. The study includes a content analysis of the blogs posted by
Connected Principals as well as social network analysis of the group’s Twitter network
and of the key players within the Twitter network. In addition, the investigation includes
interviews with six of the key blog and Twitter contributors in order to triangulate the
information gleaned from the other analyses. The results of the study provide a thorough
description of Connected Principals. While the study set out with the framework of a
community of practice, the findings led to the idea that what was actually created by this group is an affinity space. In addition, the results give indication that the members of the group generate social capital within their field. Overall, the study contributes to the literature by providing an in-depth look at a relatively new field in education.
“The advent of cyberspace is apt to be seen in two ways, each of which can be regretted or welcomed, either as a new stage in the etherealization of the world we live in, the real world of people and things and places, or, conversely, as a new stage in the concretization of the world we dream and think in, the world of abstractions, memory and knowledge” (Benedikt, 1991).

Chapter 1

INTRODUCTION

Students today are not only of a different age generation than their teachers and administrators; they are of a techno-generation, and the pervasiveness of technology in their lives affects what they do and how they learn. This generation of students does not conduct research, they “Google it”; they do not write letters, rather they email or text; they do not listen to albums, eight-track, cassettes or even CDs, they download from iTunes to their iPods, they do not read print and paper books, they read digitally from e-readers, and they don’t use home phones, phone books, or carry plan books, they refer to their cell phones which contain all of this information in one spot. In this generation, “friend” can be a verb and a “tweet” is not a bird call. This techno-landscape is where teachers have to provide instruction and where school principals, who may remember the coming of techno-color, have to lead instruction.

In addition to leading a technology-saavy generation, principals must find meaningful professional development in order to satisfy license requirements and stay on top of their field. One solution to the professional development dilemma may lie in the world where the students are the experts; the virtual world. The advances of social media allow for principals to come together with their colleagues and build their own community of practice and lead their own professional development. The group
Connected Principals has recently done exactly this through a website and blog as well as through discussions on Twitter. On their website, they claim, “This blog is the collected thoughts of school administrators that want to share best practices in education. All of the authors have different experiences in education but all have the same goal; ensuring we do what is best for students” (Connected Principals, 2010).

**Brief Overview of the Study**

The purpose of this case study was to explore how a group of principals from diverse backgrounds and different locations create and perpetuate a virtual community of practice. This investigation is a case study of Connected Principals, a group that has come together to create a regular blog on significant issues within education and the principalship. In addition, this group regularly disseminates pertinent information on Twitter via a hash tag. The study includes a content analysis of the blogs posted by Connected Principals as well as social network analysis of the group’s Twitter network and of the key players within the Twitter network. In addition, the investigation includes interviews with five of the key blog and Twitter contributors in order to triangulate the information gleaned from the other analyses.

**Significance of Study**

“Building online communities in the service of learning is a major accomplishment about which we have much to learn” (Barab, Kling, & Gray, 2004)

This quote from the introduction of a book on virtual communities in the service of learning gives the key to the significance of this study. The importance lies in the need for information about a model of a virtual community of practice for principals. Within
this model, we must further examine the content being discussed and how the key players
operate within the broader Twitter network. Insufficient opportunities for professional
development for principals can be seen throughout school districts and may be caused by
a lack of knowledge about the impact of virtual communities of practice. The data from
this study will be important for educators desiring relevant and accessible professional
development as well as school districts that are considering the design, budget, and
implementation of professional development for their administrators. The results could
also have important implications for educators hoping to gain social capital in their field.
Finally, this study may lead to an understanding of what may work and what does not
work in a virtual community of practice as it relates to professional development. In
general, when it comes to virtual communities of practice for educators, we have much to
learn.

_Literature Research Background_

Professional development for educators is a well-studied and much debated topic.
Included in this on-going discussion are the various formats for professional
development. For administrators, professional development becomes an even greater
concern because there are fewer of them in any particular location, and their ability to be
out of their respective buildings is decreased. Research on communities of practice has
shown that an alternative format for professionals in all fields can greatly contribute to
collective knowledge and individual social capital. Social media have further provided a
means for such communities of practice to organize. The on-line nature allows principals
from diverse backgrounds and dispersed geographic locations to come together.
Therefore, this study will contribute to the knowledge base of how a virtual community of practice forms, the knowledge shared within the community, and how this group’s work is extended to a larger audience of school administrators.

*Research Questions*

The research began with research questions that helped focus the study and represent the starting point of the study. These research questions acted as a foundation for the researcher and were reviewed and refined as the study proceeded. These questions also assisted the researcher in focusing the data collection.

The research questions include an overarching question as well as three sub-questions. First, the main point to be addressed is,

- **How do principals form a community of practice using social media?**

The related issues are:

- What does the community of practice look like?
- What are the benefits of this type of community of practice?
- What are the advantages and disadvantages of using social media as opposed to other forms of communication?

*Methodology*

A case study design was utilized to examine the Connected Principals community. This design allowed for an in-depth understanding of the phenomenon with an extensive description of the case and its context (McMillan & Schumacher, 2001). In this case study, there is a single case, a network of principals that has been created to foster meaningful professional development within the group. This examination included the
background and basis of the group gathered from their website and blog as well as how they disseminate information to a larger audience via Twitter. Further information came from interviews of five of the key contributors to the blog and Twitter network.

Content analysis of a simple random sample of the blog posts from Connected Principals’ first year was performed using weft QDA, software specifically designed for this task, in order to determine the main topics and ideas explored by the group. For the sample of blogs, codes were used to identify recurring themes and topics. Similar content analysis was conducted on the interview transcripts to discern the basis and background of the Connected Principals group. Finally, social network analysis was applied to the network formed on Twitter using the Connected Principals’ hash tag, #cpchat. The Microsoft Excel template, NodeXL, was used in order to create a sociogram or picture of the group’s Twitter network as well as to identify key measures for the group. This analysis provides information on how the group disseminates information to a wider audience.

Summary

Following the introduction found in chapter 1 of the dissertation, chapter 2 contains the literature review on professional development in education, informal learning and communities of practice, social capital, social network sites, including their history and growth, micro-blogging and Twitter, and the intersection of social media and communities of practice or virtual communities of practice. Chapter 3 outlines the methodology of this case study. This includes descriptions of the content analysis of the blog and interviews as well as social network analysis of the Twitter network. Chapter 4
summarizes the findings of this study including the results of all three sources of data.

Finally, chapter 5 reports the overall conclusions and recommendations from the study.
Chapter 2

REVIEW OF LITERATURE

Introduction

Educators and especially principals need access to meaningful professional development in order to keep their practice at the forefront of the field (Grogan & Andrews, 2002; Knight, 2001). Peterson (2002) found that professional development programs for principals tend to be fragmented with little attention to coordinated long-term learning. However, the idea that significant long-term learning can be done informally and that learning often involves participation in a community of practice is nothing new. In fact, the literature shows that these ideas are indeed quite well accepted (Boud & Middleton, 2003; Eraut, 2004; Gray, 2004; Johnson, 2001). However, online social network sites (SNSs) are very new. At the intersection of these “old” ideas about learning and the “new” online capabilities lies the world of online, informal, communities of practice. Interestingly, educational leaders, who have been accused of not being prepared to be technology leaders (Flanagan & Jacobsen, 2003), are active participants in the realm of social media (edWeb, IESD, Inc, MCH, Inc., & MMS Education, 2010). As a result these communities develop among a network of similar educational leaders and generate social capital. These virtual communities of practice may therefore be a meaningful form of professional development. To better understand this intersection, literature on informal learning, communities of practice, and social media must be examined. In order to understand the features of these online communities of practice,
after defining some of the technological terminology, I will discuss first the framework of social capital.

Definitions

In order to understand the world of virtual communities of practice, there is a specific vocabulary. These definitions will begin with the broadest idea and gradually narrow toward more specific technologies and attributes of those technologies.

Social media, also referred to as Web 2.0 technology, is the umbrella term for those websites that have the capabilities of connecting people to one another.

Social network sites have been defined by boyd and Ellison (2008) as “web-based services that allow individuals to (1) construct a public or semi-public profile within a bounded system, (2) articulate a list of other users with whom they share a connections, and (3) view and traverse their list of connections and those made by others within the system” (p. 211).

Social network analysis is a methodology for analyzing relational data by examining a group of entities and the ties between them (Wasserman & Faust, 1994).

Blogs or weblogs were defined by Walker (2003) as a frequently updated website consisting of data entries in reverse chronological order, whose content is mostly created by one person.

Blog post is a single entry on a blog. Blog posts usually have the capabilities for readers to post comments.

Microblogs later came about as a simpler version of a blog. According to McFedries (2007), a microblog is a weblog that is restricted to 140 characters per post, but is
then enhanced with social network facilities.

*Tags* are key words or short phrases used to describe the topic of a blog post.

*Twitter* is the oldest and best known micro-blogging service (Galagan, 2009). On this service, users send their messages called “tweets”. Users may “follow” other users meaning that the follower will receive the followed user’s updates.

*Hash tags* denoted by the # symbol, according to the Twitter website, is used to mark keywords or topics in a Tweet. It was created organically by Twitter users as a way to categorize messages. When a Tweet is posted with a specific hash tag, it signifies to other users that the Tweet pertains to a particular interest area.

*Theoretical Framework: Social Capital*

Researchers in the social sciences have used social capital to understand components of communities such as trust, shared understanding, reciprocal relationships, network structure, and norms (Schwier & McCalla, 2003). Social capital generally brings to the core the importance of networks of strong personal relationships that develop trust, cooperation, and collective action (Jacobs, 1965). Social capital may be seen as a resource for social action and the conduct of social affairs (Bordieu, 1986). Coleman (1988) adds that social capital is gained when networks promote the sharing of norms and values. In brief, Lin (1999) claims that social capital is captured from embedded resources in social networks. Lin further states that there are generally three reasons why these embedded resources enhance outcomes: facilitation of the flow of information, the exertion of influence among members of the network, and the gaining of social credentials from participation in the network.
Despite the lack of a single definition of social capital, researchers have consistently supported the value of social capital within communities. Putnam (1995) claimed that networks serve as a conduit for information dissemination that contributes to achievement of goals. In terms of education, mentoring, networking, and mutual support associated with high levels of social capital contributes to success (Coleman, 1988). Likewise, Prusak & Cohen (2001) state that social capital promotes knowledge sharing due to trust relationships, common norms, and shared goals. Others state that social capital facilitates the development of knowledge capital due to the exchange of information and sharing of knowledge (Nahapiet & Ghoshal, 1998).

Onyx and Bullen (2000) concisely identified five main themes that are consistent throughout the literature on social capital. First, social capital depends upon networks of relationships among entities. The second is that social capital is based on reciprocity; that is, at some point a participant will receive resources in return for those they have contributed. The third theme is that of trust. Trust, as the authors state, “entails a willingness to take risks in a social context based on a sense of confidence that others will respond as expected” (p. 24). Fourth, social capital requires social norms; the shared values and common goals of the group that provide an informal social control. Finally, there is a theme of personal and collective efficacy. The members of the community have a willingness to participate within the group.

The application of the concept of social capital in a community of practice has also been examined. Lesser and Prusak (1999) go so far as to say that communities of practice are valuable because they specifically foster the development of social capital.
They further elaborate how social capital is linked to communities of practice on three different dimensions. On the structural level, communities of practice foster the development of a network of individuals with relevant knowledge, allow for the evaluation of other member’s knowledge, and connect individuals from the outside (Lesser & Prusak, 1999). The relational dimension is where the communities allow for interpersonal interactions that build trust, share relevant knowledge, and construct norms and values commonly held among the group (Lesser & Prusak, 1999). Finally, in the cognitive dimension, because of the commonality of the group, a shared vernacular and artifacts are created by the community (Lesser & Prusak, 1999). Even one of the pioneers of communities of practice, Etienne Wenger (2000) says that the depth of social capital created within a community of practice is an indicator of the strength of that community.

*Figure 1: Communities of Practice Generating Social Capital*
As seen in Figure 1, communities of practice are subsets of professional development that often overlap the field of informal learning. Each of these entities can create social capital for the members. Therefore, in order to examine a virtual community of practice, it is important to first delve into the foundations of professional development, informal learning, and communities of practice, as well as explore the vehicle of these communities - social media.

**Professional Development**

The standards movement in education called for higher standards for students, but also heralded an age of higher standards for teachers (Wilson & Berne, 1999) and principals (Grogan & Andrews, 2002). This call for higher standards then resulted in the need for changes in professional development for educators (Wilson & Berne, 1999). Although professional development itself was not new, there grew an interest in what makes professional development effective (Penuel et al., 2007). In this current vein of research on professional development and what features make it effective lays the possibility of virtual communities of practice.

**Teachers**

Studies on teacher professional development identify various characteristics that determine effectiveness. One of the first features that spans the research is duration. That professional development needs to be on-going is a consensus (Abdal-Haqq, 1995; Garet et al., 2001; Little, 1993; Penuel et al., 2007). Another feature that gains universal support is that professional development must be collaborative in nature (Abdal-Haqq, 1995; Burbank & Kauchak, 2001; Garet et al., 2001; Little, 1988). Other features that
foster effective professional development for teachers include reflective practice (Abdal-Haqq, 1995; Boud & Walker, 1998), which focused on the specific needs of teachers (Abdal-Haqq, 1995; Garet et al., 2001; Little, 1993; Penuel et al., 2007), and which treats teachers as professional adult learners (Abdal-Haqq, 1995; Putnam & Borko, 2000).

While these features mostly address formal professional development opportunities, other vehicles are acknowledged. Berne & Wilson (1999) specifically list informal learning locations such as conversations and experiences shared with colleagues. In addition, researchers have addressed professional development within communities of practice (Berne & Wilson, 1999; Knight, 2002; Schlager & Fusco, 2003). These communities of practice for teachers have been cited as effective, sustainable professional development systems (Schlager & Fusco, 2003). Smylie et al. (2001) state that, “A professional community characterized by a focus on student learning, peer collaboration, and reflective dialog provides social and normative support for teacher participation in professional development” (pp. 57-58).

In totality, the literature on effective professional development contributes key features that are in alignment with communities of practice. In addition, communities of practice are specifically identified as effective vehicles for teacher professional development.

*Principals*

Although teacher professional development is important in improving student achievement, principals serve as instructional leaders and therefore also need meaningful professional development (Grogan & Andrews, 2002). The connections between
principal quality and school performance (Hallinger and Heck, 1998 and Waters et al. 2003) as well as teacher satisfaction, morale, and retention (Stockard and Lehman 2004; Ingersoll and Smith 2004) are well-documented by research. While these studies illuminate the importance of strong building level leadership, other studies show that such leadership is hard to find. Peterson (2002) reported from a Public Agenda survey that fifty percent of superintendents have trouble recruiting qualified principals. In urban settings, recruiting and retaining principals is a problem for sixty percent of superintendents (Darling-Hammond et al. 2007). At the heart of this issue is the need for quality professional development for principals.

Although most of the literature on principal professional development centers on formal professional development (Grissom & Harrington, 2010), there are several aspects have implications for professional development in an informal setting. These aspects include a professional sustenance orientation, a reflective inquiry approach, and the role of networking. The unifying factor in these situations of professional development is the role of the principal as the initiator of the activity.

Dempster (2001) defines a professional sustenance orientation for professional development as emphasizing “learning derived from individual and collective subjective experience of people in their everyday educational practice” (p. 5). This orientation seeks to meet personal and collective needs as they arise during daily practice. Administrators need a means to receive immediate feedback on a given situation. These needs are often not met through the traditional professional development models of college coursework or workshops. Likewise, the reflective inquiry approach to
professional development generates knowledge through a process of systematic inquiry. The goal is for principals to explore new skills and concepts and apply their new knowledge in real school contexts. Two of the key components of this approach are mentoring and networking.

Principal networks are commonly seen as an important professional development activity for principals. Collegial support is necessary for effective school leaders. These networks can assist in problem-solving, provide a broad knowledge base, and offer professional feedback. Garber (1992) also found that networking can help reduce the isolation that principals feel. Studies have also reported that a large percentage of principals perceive networking as being helpful to their practice. A report by the National Staff Development Council (2000) notes that the best professional development activities for principals focus on the “real work” of the principal. This “real work” criterion is often met through principal networks.

Informal Learning and Communities of Practice

As defined by Livingstone (2001), informal learning is “any activity involving the pursuit of understanding, knowledge or skill which occurs outside the presence of externally imposed curricular criteria” (p 4). Marsick & Volpe (1999) give a similar definition, “. . . learning that is predominantly unstructured, experiential, and noninstitutional” (p 4). Some of the key concepts of informal learning include the flexibility and freedom for learners, the significance of learning from others, and that it is a complementary partner to learning from experience (Eraut, 2004). The nature of informal learning must be integrated with work and daily routine, an inductive process of
reflection and action, and linked to the learning of others (Marsick & Volpe, 1999).

Based on these definitions, concepts, and the nature of informal learning, a community of practice overlaps the field of informal learning.

For most, learning means the acquisition of knowledge. However, in the late 1980s and early 1990s, two researchers, Lave & Wenger, proposed a new model of “situated learning” that involves participation in a community of practice. This model proposes that people learn by pursuing various enterprises within a group. Wenger (1998) defines a community of practice through this group pursuit.

Over time, this collective learning results in practices that reflect both the pursuit of our enterprises and the attendant social relations. These practices are thus the property of a kind of community created over time by the sustained pursuit of a shared enterprise. It makes sense, therefore to call these kinds of communities communities of practice. (p. 45)

These communities therefore have a joint enterprise, require mutual engagement that binds the community as a social group, and include a shared repertoire of communal resources (Wenger, 1998). This provides a benefit of the generation and dissemination of knowledge that is often difficult to communicate because it is embedded in a context.

Situated learning places learning in the context of social relationships where a process of participation leads to the construction of identities and practices. Initially, members begin on the periphery and move to a center role. As Lave & Wenger (1991) state, “This social process, includes, indeed it subsumes, the learning of knowledgeable
skills” (p 29). This model is not just learning by doing, but requires full participation in the community and in generating meaning.

Wenger (1998) also differentiates communities of practice (CoPs) from formal groups, teams, and informal networks in terms of purpose, membership, binding, and length. Rather than delivering a specific product or just passing along information, communities of practice develop members’ capabilities and create a forum to build and exchange knowledge. The members select themselves instead of being assigned to the group. Likewise, instead of being given a goal, the group’s “passion, commitment, and identification with the groups’ expertise” binds the community together (Wenger 1998). Finally, a community of practice lasts as long as the group is committed.

According to Wenger (1998), in terms of the creation, accumulation, and dissemination of knowledge, Communities of Practice serve several functions. First, they are basic channels for information flow. Because of the shared understanding and common ideas of the group, relevant information is communicated in useful ways. Second, CoPs fosters the retention of knowledge because they are useful to practitioners. Next, they steward competencies to keep the members on the forefront of their field. This makes membership valuable because the members develop a professional identity as keeping up with or pushing new developments in the field. Finally, CoPs provide homes for identities. These groups develop a particular identity that guides them in deciding what information is important; what they pay attention to; what they participate in, and what they avoid. Overall, CoPs foster professional growth through the sharing of knowledge and development of relationships.
Social Media

Social Network Sites

Online social network sites currently have millions of users around the world. However, the purpose of the various sites can be confusing to many. Likewise, it can be difficult to determine what websites are actually considered social network sites (SNSs). Therefore, for this study, a definition by boyd and Ellison (2008) will be used. They defined an SNSs as “web-based services that allow individuals to (1) construct a public or semi-public profile within a bounded system, (2) articulate a list of other users with whom they share a connections, and (3) view and traverse their list of connections and those made by others within the system” (p. 211). A note about this definition is that it describes social network sites, not social networking sites. Although the two terms are often used interchangeably, there is a subtle difference. Social network sites tend to support existing networks as opposed to offering a means to meet new people. Social networking sites would include those sites that aid in meeting new people such as on-line dating sites.

SNSs begin with an individual user profile. These profiles include basic information about the user, but can vary slightly depending on the site. These profiles may be open to anyone who is a member of the particular SNS or may be kept private to the user’s list of connections which are commonly called friends, contacts, or fans. Once a user has created a profile, they create a list of contacts within that site. Then a user can generally see the profiles of their friends and send messages to these friends that can be either public or private. In addition to these basic features that are common to most
SNSs, some sites also provide photo- and/or video-sharing, blogging, and instant messaging features.

History and Growth of Social Media Technology

In 1997, SixDegrees.com was launched allowing members to post a profile, list friends, and even surf friend lists. Although this site did not last long, closing in 2000, it provided a glimpse into what would become a global trend. Following close behind SixDegrees.com new social network sites began hitting the web including Friendster in 2002, LinkedIn and MySpace in 2003, a high school version of Facebook in 2005, and the modern version of Facebook and Twitter in 2006. Although these constitute the most well known SNSs, numerous other sites have been launched as well.

Although it was not the first SNS, Friendster was critical in building the popularity of this technology. When it was launched, it was actually designed to compete with on-line dating sites. It allowed users to view the profiles of people who were four degrees or fewer away. Friendster’s popularity surged, and within a year of launch had gained 300,000 users (boyd & Ellison, 2008). However, this popularity was more than their server’s and data bases could handle, and the site had regular disruptions. The popularity of Friendster soon faded just as MySpace was beginning.

MySpace was able to attract many of the disgruntled users of Friendster, but then took the technology further as well as allowing for more personalization. Soon, rock bands began creating profiles for their fans. When teenagers began joining MySpace, the popularity of this site snowballed. Unfortunately, allowing minors to have profiles created problems when illegal adult relationships with minors were linked to MySpace.
While MySpace was still popular, Facebook began in 2004 as a Harvard-only SNS (Cassidy, 2006). Users had to have a Harvard e-mail address. Soon, Facebook was serving other schools, but continued to require users to have university e-mail. In 2005, Facebook expanded to high school users, and in 2006 it opened to everyone. The growth of Facebook has now become a world-wide phenomenon even leading to the use of “friend” as a verb. In 2010, Facebook reached the 500 million active-user mark; confirming the site as the world’s largest SNS and the world’s most popular website (Facebook, 2010).

Interestingly, the growth of Facebook is not entirely unique and has not diminished the growth of other SNSs. Golbeck (2007) collected data on every SNS found over a two-year period from 2004 to 2006. In this time period, the number of sites almost doubled from 125 to 223 and the number of members grew four-fold from 115 million to 490 million (Golbeck, 2007). While this study pre-dated the opening of Facebook to everyone, it shows that the interest in SNSs was already on an upward trend. In 2006, the other major SNS to come on-line was Twitter. With a slightly different purpose, but similar audience, Twitter’s growth has also followed an impressive trend reaching the 190-million user mark around the time Facebook hit 500 million (Schonfeld, 2010). It is now common to find icons for both Facebook and Twitter side by side on websites for companies, schools, and celebrities.

**Blogging and Microblogging**

“The power of microblogging can be summarized as the fastest mobile exchange with people of similar interests all over the world” (Ebner, 2009).
In the development of on-line journaling, first there were blogs, an online forum for a person’s thoughts and opinions. Blogs can be an ideal forum for informal learning since they enable users to exchange information and share experiences (Ferdig and Trammell, 2004). Although still quite popular; for many, blogs are too time-consuming and difficult to maintain long-term. In the interest of time and ease of access there is instead microblogging. Microblogging is the posting of short thoughts and ideas in a personal blog using instant messaging software or even a mobile phone. In this world of microblogging, Twitter is the site with the most hype.

Since March of 2006, people have been able to “tweet” about what they were doing or thinking and have a ready audience for that thought. This is due to Twitter’s combination of microblogging and social networking. Like other SNSs, a Twitter user can choose to follow certain people while others can choose to follow that user. When a particular user or “twitterer” posts a “tweet” all of the people following them are instantly updated. In addition to the follower/followee relationship, Twitter has other features from the SNS realm such as customization of profiles, the ability to make postings public or private, and the ability to block followers. These SNSs features make Twitter attractive to users, but key to Twitter’s success remains in the microblog aspect perfect for the concise multi-tasker that desires instant information. And, the “micro” part of Twitter is very specific; each “tweet” must be 140 characters or less.

Virtual Communities of Practice

Before the invasion of SNSs, McLure-Wasko & Faraj (2000) looked at electronic CoPs noting that, “Knowledge sharing is enabled through mechanisms that support
posting and responding to questions, sharing stories of personal experience, and discussing and debating issues relevant to the community” (p. 161). They found that the participants in these electronic communities of practice considered knowledge to be a public good and felt an obligation to share. While technologies such as listservs, discussion groups, bulletin boards, and chat rooms aided such communities, the technology would soon make these electronic communities even stronger. The proliferation of SNSs and other online collaboration tools coupled with communities of practice has given rise to a new form of collective learning and knowledge sharing: virtual networks of practice (McLure-Wasko, Teigland, and Faraj, 2009).

Chiu, Hus, and Wang (2006) defined virtual communities as “online social networks in which people with common interests, goals, or practices interact to share information and knowledge, and engage in social interactions” (p. 1873). Ardchivili (2008) found that participants in virtual communities of practice did so for profession-related benefits, increased self-esteem, community ties, and norms such as shared values and reciprocity. Gray (2004) found online CoPs to be ideal for individuals who are geographically dispersed or have few opportunities to meet face to face to share best practices. Finally, McLure-Wasko et al. (2009) defined electronic networks of practice as “a self-organizing, open, activity-system focused on practice that exists through computer-mediated communication” (p. 256). They found that electronic CoPs are sustained though generalized exchange, supported by a critical mass of members, and that the members develop strong ties with the community as a whole (McLure-Wasko et al., 2009).
In the world of education, the role of SNSs in informal learning for students has been examined at both the high school (Greenhow & Robelia, 2009) and college level (Ebner, Lienhardt, Rohs, & Meyer, 2009). However, there is little information on the use of SNSs for the creation of electronic networks of practice for educational leaders. However, the report *School Principals and Social Networking in Education*, a joint effort from edWed.net, IESD, Inc., MMS Education, and MCH, Inc. (2010), found that most principals indicated that social networking sites have value as a way to create professional learning communities. About half of the principals in the discussion group phase said they had used social networking sites to share ideas, questions, and/or solutions with other education professionals (p. 5). These principals further stated that they used SNSs to communicate with colleagues outside their school district. In these situations, SNSs were seen as both a tool for sharing information, ideas, and experiences as well as providing access to information for themselves.

A new generation of educators specifically designs virtual communities for the service of learning (Barab, Kling, & Gray, 2004). To this end, Barab, MaKinster, & Scheckler (2004) define these communities as “a persistent, sustained network of individuals who share and develop an overlapping knowledge base, set of beliefs, values, history and experiences focused on a common practice and/or mutual enterprise” (p. 23). Such communities are not simply created groups; they require group identity and an explicit goal of supporting the work of the group whatever that work may be (Schwen & Hara, 2004). Schlager, Farooq, Fusco, Schank & Dwyer (2009) state that the social capital gained in face-to-face educator communities has similar or even more powerful
potential results in virtual communities, especially for those educators for whom expertise and resources are least available.

Although virtual communities of practice in the field of education are quite new, there exist some analyses of a few successful groups such as Tapped In (Schlager & Fusco, 2003; Schlager, Fusco, & Schank, 2002) the Inquiry Learning Forum at Indiana University (Barab et al., 2004) and the Math Forum (Renninger & Schumar, 2002). Although these communities differ in design, in each case, the authors describe these projects along the lines of virtual CoPs. In particular, Tapped In was specifically designed to be a virtual community of practice for K-12 educators. The premise for Tapped In was that technology infrastructure could support teacher professional development that was transformative, sustainable, and scalable (Schlager, et al., 2002). Although, the authors would not yet claim “success” with Tapped In (Schlager et al., 2002), it continues to provide a professional community for thousands of education professionals (Schlager et al. 2009). However, the need for models of virtual CoPs for educators continues (Schlager et al. 2009).

Summary

Social capital is gained through resources embedded in networks (Lin, 1999). CoPs have been linked to the building of social capital (Lesser & Prusak, 1999). In addition, researchers cite participation in communities of practice as a source of effective and sustainable professional development (Schlager & Fusco, 2004). The pervasiveness of social networking in popular culture holds promise for its use in education (Resnick,
2002). At the crossroads of these concepts lay the virtual community of practice and its potential for meaningful professional development for educators.
Chapter 3

METHODOLOGY

The purpose of this case study is to explore how a group of principals from diverse backgrounds and different locations create and perpetuate a virtual community of practice (CoP). In order to focus the study, the guiding question is, “How do principals form a community of practice using social media?” Additional questions include; “What does the community of practice look like?”; “What are the benefits of this type of community of practice?”; “What are the advantages/disadvantages of using social media as opposed to other forms of communication?”

General Design

To better understand a virtual (CoP) created by principals in order to improve their practice, we must understand both the environment in which the community exists and the individuals responsible for the community. Therefore, a mixed-methods case study design was utilized to examine the Connected Principals community. This design allowed for an in-depth understanding of the phenomenon with an extensive description of the case and its context (McMillan & Schumacher, 2001).

Case study designs can contribute to theory and practice by exploring and reporting on a particular case as well as by analyzing a particular practice (McMillan & Schumacher, 2001). Generally, these studies explore the particular case over time in detail, employing multiple sources of data found in that case (McMillan & Schumacher, 2001). These cases are chosen for their uniqueness or to illustrate an issue (Stake, 1995). The study then provides a description of the case, including themes or key issues and the
researcher’s conclusion or “lessons learned” (Guba and Lincoln, 1989). These “lessons learned” are naturalistic generalizations of the patterns found in the data.

The naturalistic mode of research was chosen because it can be used to gain new perspectives on a situation. Despite the electronic nature of this case, the case is nonetheless a social setting. The naturalistic case study provided opportunities for rich details and insights from key contributors to the Connected Principals group (Stake, 1995). As Yin (2009) states, the naturalistic case study examines a phenomena in its real-life context and is best used for “how” or “why” questions about a contemporary set of events over which the investigator has little or no control.

In this case study, there is a single case, a network of principals that has been created to foster meaningful professional development within the group. This examination includes the background and basis of the group gathered from their website and blog as well as how they disseminate information to a larger audience via Twitter. Further information came in the form of interviews of five of the key contributors to the community. The conclusions of this study contribute to theory by providing information on a topic that has little prior research (McMillan and Schumacher, 2001). Likewise, this study contributes to practice by increasing the understanding of a potentially powerful means of professional development for principals.

Setting of the Case

The setting for this study is a unique case as the participants within the community of practice are principals from different districts across the country and around the world. On their website, their group is described as, “the collected thoughts of
school administrators that want to share best practices in education. All of the authors have different experiences in education but all have the same goal; ensuring we do what is best for students” (Connected Principals, 2010). Connected Principals has ten **Guiding Principles** for their blog contributors. These ten principles include:

1. All of our decisions focus first on what meets the needs of the children we serve.
2. Building strong relationships is the first basis of creating a strong school environment.
3. It is imperative that we value the gifts, contributions and uniqueness of each individual student, staff, or parent.
4. We can do more together than we can alone.
5. All educators need to be lifelong learners.
6. All members of our school community should be given opportunities to become leaders.
7. Parents are our partners in education.
8. Critical thinking and deep learning opportunities for our students are necessary to ensure that they become strong 21st century citizens.
9. Technology should be used to create opportunities for students to ensure that we are meeting their needs and creating opportunities to network and learn from others.
10. We care about our results; we seek to educate for deep understanding and transferable skills, and seek to use the right data to measure our outcomes and use
that data not to punish but to inform our organizations’ continuous learning and development (Connected Principals, 2010).

These Guiding Principles are the basis for the views represented by the authors. Based on their Guiding Principles, the contributors publish blog posts on the topics of best educational practices, principal quality standard, distributed leadership, professional development, leadership essentials, school branding, parental involvement, and technology integration. This relatively new group began their blog in June of 2010. They soon added a Twitter hash tag, #cpchat. As of the end of May of 2011, Connected Principals had already published 376 blog posts and been nominated for six Edublog Awards, including best group blog, best school administrator blog, best new blog, best use of a social network, most influential tweets, and best use of a Professional Learning Network.

In January of 2011, there were thirty contributors to the Connected Principals blog representing a diverse group of educators. Each of the contributors is described through a personal biography on the Connected Principals’ website. Although all of the contributors appear to be Caucasian on their profile pictures, and most are principals or assistant principals, there are educators from various positions, including district level administrators. Table 1 shows the breakdown of this group by sex, position, level, and location. Of note for the location is that although most of the group are from either Canada or the United States, they represent four Canadian provinces and sixteen U.S. states as well as three foreign countries.
**Table 1: Connected Principal Blog Contributor Information**

<table>
<thead>
<tr>
<th>Category</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>9</td>
</tr>
<tr>
<td>Male</td>
<td>21</td>
</tr>
<tr>
<td>Position</td>
<td></td>
</tr>
<tr>
<td>Principal or School Director/Head</td>
<td>20</td>
</tr>
<tr>
<td>Assistant or Vice Principal</td>
<td>7</td>
</tr>
<tr>
<td>District Level Administrator</td>
<td>3</td>
</tr>
<tr>
<td>School Level</td>
<td></td>
</tr>
<tr>
<td>Elementary</td>
<td>11</td>
</tr>
<tr>
<td>Middle</td>
<td>3</td>
</tr>
<tr>
<td>High</td>
<td>6</td>
</tr>
<tr>
<td>K-12</td>
<td>5</td>
</tr>
<tr>
<td>Location</td>
<td></td>
</tr>
<tr>
<td>Canada (4 Provinces)</td>
<td>9</td>
</tr>
<tr>
<td>China (English school)</td>
<td>1</td>
</tr>
<tr>
<td>England</td>
<td>1</td>
</tr>
<tr>
<td>United Arab Emirates (American School)</td>
<td>1</td>
</tr>
<tr>
<td>United States (16 States)</td>
<td>18</td>
</tr>
</tbody>
</table>

**Data Collection**

A naturalistic inquirer attempts to understand a situation without influencing the events. Yin (2009) outlines the steps involved in such data collection. Following these steps, the study began with a focus for the inquiry and decisions on the data to be collected. The data collection was performed for the two different modes of information dispersal: the blog and the Twitter hash tag as well as from interviews of key contributors. A simple random sample of Connected Principals’ blog posts from the group’s first year produced the first set of data. The sample includes 95 blogs, which constitutes 25% of the blogs posted in the first year. These archived blog posts were
accessed from the Connected Principals’ website. Of the original group of 95 blogs, three were removed from the list. Each of the blogs removed from the sample contained embedded video, graphics, or a link to an outside file all of which were essential to the content of the blogs. These three were then replaced again via a simple random sample. Content analysis was then used to glean the main ideas from these blogs.

In addition, a database was created to record descriptive data on the sample of blog posts. This database included the blog post titles, authors, date, URL, word count, number of comments, number of tweets, and any tags provided by the authors. From this database, a brief descriptive data set was created. Likewise, author information was generated from this database, which then led to information on the top authors as determined by the number of posts by each author in the sample.

For the second set of data, information from the Twitter hash tag, #cpchat, was pulled using the Microsoft Excel template, NodeXL. NodeXL is an open source extension to the widely used spreadsheet application and provides a range of basic network analysis and visualization features. This template also allows the user to import network data from the on-line sources of Flickr, Twitter, and You Tube. The Connected Principals’ hash tag was entered into the import feature of NodeXL and the program then retrieved the nodes (people and groups with Twitter accounts) that respond to posts that included that hash tag. Included in this retrieval are the edges that indicate relationships between those nodes. In the case of Twitter, a relationship is formed by one Twitter account holder choosing to “follow” another account holder. By “following” someone,
the follower receives the other account holder’s Twitter updates. Each time the followed person posts a new tweet, it appears on the follower’s home page in real time.

Finally, five of the key contributors were identified to be interviewed via social media. These key contributors were identified through three inputs. During the reading of the blog sample, two of the contributors were identified as the originators of the Connected Principals’ idea. Also from review of the blog sample, I deduced that some of the contributors were more active than others. Finally, from the social network analysis, some contributors emerged as being more active than others within the group’s Twitter network. These interviews were used to capture the perspectives of the participants using open-ended questions. Content analysis was again used to determine main themes within the interview data.

Data Analysis

Data analysis included separate analyses of the three data sources: blog content, Twitter network, and interviews. Using multiple sources of data allows for triangulation of the data across the different inquiry methods (McMillian and Schumacher, 2001). Triangulation is the cross-validation among data sources, which in turn increases construct validity (Yin, 1994). Each of the three data sources was analyzed individually. As each data set was analyzed, emerging themes were recorded for that set. After individual analyses, the predominate findings in the data sources were compiled and compared in order to gain a full picture of the Connected Principals group.
Content Analysis

Content analysis is a systematic, replicable technique for compressing large units of text into a few content categories based on coding (Krippendorff, 1980). Although content analysis can be applied in a variety of applications, in this study, it was used to examine patterns and trends within a group of documents and a set of interview responses. In the first set of data, the population consisted of all blog posts published on the Connected Principals’ website in its first year. The second set of data for which content analysis was utilized included the transcripts of the interviews.

Blog Post Analysis Process

The blog post population consisted of the 376 blog posts published on the Connected Principals website in its first year, from June 2010 until the end of May 2011. From this population, a simple random sample of 95 blog posts was taken, constituting 25% of the first year’s posts. In this simple random sample, the blog posts were numbered from 1 to 376 and then 95 were selected using the random number generation capabilities of a Ti-nspire graphing calculator. Initially, three posts from the sample were removed because of embedded video or graphics or a link to an external website, without which the content of the actual blog post was rendered meaningless. These three posts were then replaced by another simple random sample utilizing the process outlined previously. The final sample was then analyzed within the eight topic areas listed by the Connected Principals’ group in January 2011. These blog posts were coded within their topic using an emergent approach. In this emergent approach, categories were established from a preliminary examination of the data through reading and use of Weft
QDA, qualitative analysis software specifically designed for efficient content analysis of large amounts of text. Initially, as the posts were read, sections were highlighted in eight colors according to the eight categories listed on the Connected Principals website. As key words or phrases emerged within the color coded sections, the search feature of Weft QDA was used to search the entire sample for those or similar key words and phrases. From the initial eight topic areas designated on the Connected Principals’ website, three main content areas were identified as being the most consistently discussed topics appearing in 25% or more of the posts.

In addition, a database was created to record the title, author, date, URL, word count, number of tweets, number of comments, and tags for each blog post in the sample. This database was then used to compile descriptive data on the blog posts and authors. These descriptive data included the number of contributors represented, the number of blogs generated by each of those contributors, and how the bloggers classified their own blogs within Connected Principals’ twelve topic areas. From the sample database, further descriptive data on the word count, comments, and tweets were also reported.

*Interview Analysis Process*

After careful review of the authors in the blog post sample and the data from the Twitter network, six key contributors were selected to be interviewed. These six include founder, George Couros; second on board, Patrick Larkin; and four others who registered highly in terms of number of blog posts in the sample and showed up in the Twitter network: Eric Sheninger, Jonathan Martin, Dave Meister, and Larry Fliegelman.
The six contributors selected for interview were contacted via an email, where they were invited to be a part of the study and provided the Letter to Participants included as Appendix A. The interview protocol was reviewed by the Internal Review Board (IRB) and was granted approval #HM13975. All six agreed to be interviewed and were interviewed between January 16, 2012 and February 1, 2012, using Google Video Chat. The interviews were recorded using the sound recorder on the computer, then transcribed using Dragon speech recognition software. Due to the inability of the software to recognize “um” or “uh”, the transcriptions were verbatim with the exception of these two fillers. These transcriptions were sent to the interviewees for review of accuracy before their analysis.

The interview content was analyzed similarly to the blog post content. The interview transcripts were analyzed using an emergent approach where categories were established from a preliminary examination of the data through reading and use of Weft QDA, qualitative analysis software that is specifically designed for efficient content analysis of large amounts of text. As interview transcripts were read and key words or phrases emerged, the search feature of Weft QDA was used to search the entire sample. Three main content areas were determined through the process of reading and use of software.

Social Network Analysis

Social Network Analysis (SNA) is a method widely used in the social sciences that focuses on relationships between entities (Wasserman & Faust, 1994). This methodology graphs networks of entities, measures certain traits of these graphs, and
assists in finding important features of these relationships. Because of this focus on relationships, SNA is a method that is well-suited to answering questions about CoPs created via Twitter. In order to address such properties, the methods of analysis involved in SNA are different from the traditional statistical measures. Likewise, a particular vocabulary is important in work with SNA.

At the most basic level, a network is a group of actors, whether they are individuals or organizations, connected by ties through which resources, information, etc., are passed. In this project, the actors are principals, and the ties are the replies to and received Twitter posts. When all of the actors and ties for this situation are graphed, a picture of the network will be presented. Some of the actors will have a large number of ties to the network where as others will have a small number of ties. These numbers of ties are referred to as the degree of the node. This degree measure will indicate which administrators are more or less connected than others.

In addition to degree, there are several other measures of interest at the actor level. Degree is a measure of centrality in a network, giving the number of other actors with which a node has direct contact. The node with the highest degree will be the one with the most replies either to or from other nodes. However, direct ties are not the only measure of centrality. Closeness is a measure that describes how close an actor is to all of the other actors in the network, not just the ones with direct ties. The actor that has the least number of “steps” to all of the other actors would have the highest closeness. The final measure of centrality is betweenness. The actor with the highest betweenness can be thought of as the middle man, the one through whom information must flow. Overall,
these measures indicate which administrator or administrators in the network are the most involved or most crucial to the operation of the network.

While these measures can be used to answer questions about a particular principal, other measures can be used to answer questions about the network as a whole. When comparing the number of ties in a network to the total number of ties possible, one gets the density of the network. The density of the network will give information about the extent to which the network is being utilized. A dense network will indicate that there is information flow between a high number of members where a less dense network will show the opposite. This will give insight into whether or not Twitter is truly creating a good vehicle for a network of professional discourse.

These SNA metrics of interest were calculated using NodeXL. Likewise, this program was used in visualizing the graphs of the Connected Principals’ Twitter network. Because this program allows for the importation of data directly from Twitter, it eliminated the time-consuming task of data entry as well as allowed for quick calculations of the metrics.

*Rigor of Study*

One of the main concerns with case study research is a lack of rigor. Yin (2009) outlines tactics that can be applied in the four tests of quality research in order to enhance rigor. In the first test, construct validity, the researcher can use multiple sources of evidence (triangulation), establish a chain of evidence, and have informants review a draft of the report (McMillan and Schumacher, 2001). This study included the first two of these tactics. McMillan and Schumacher (2001) identify the value of immersion in the
context to enhance validity. This foundation in the context can be achieved through triangulation and the chain of evidence. Although the key informants did not review a draft of the report, they were given an opportunity to review the transcripts of the interviews for accuracy. Rigor in the data analysis is built for internal validity. In order to establish rigor in the data analysis, the researcher performed pattern matching across the data sources and built an explanation that addresses rival explanations. For the test of external validity in the research design, the researcher used theory for the single-case study. Finally, in order to provide rigor in terms of reliability, the researcher used a case-study protocol and developed a case study database.

Ethical Considerations

Due to the public nature of most of the data, ethical considerations for this study pertain to the data collected by interview. The most relevant principles for ethical research in education are those presented by the American Educational Research Association (AERA). The principles that then pertain to interview data include disclosure of the purpose of research, protection from mental discomfort, informed consent, confidentiality, and a provision of the study results to the subjects (AERA, 1992). In order to ensure that these ethical principles were followed, the researcher included a letter to the participants that outlined the nature and purpose of the study. This letter included sections pertaining to the purpose of the study, a description of the study and the subjects’ involvement, the risks and benefits of participating, and voluntary participation and withdrawal. In addition, subjects were provided an opportunity to
review interview transcripts for accuracy and will be provided a summary of the findings of the study.

Limitations

Case studies provide little grounds for generalization to populations. However, as Yin (2009) states, the goal of case study research is to expand and generalize theories. McMillan and Schumacher (2001) describe qualitative techniques as providing an extension of findings that enables others to understand similar situations and apply the findings in subsequent research or practice.
Chapter 4

FINDINGS

Introduction

The overall guiding question for this study is about how principals form a CoP using social media. Under the auspices of this guiding question, the purpose of such a case study was to provide a rich description of the composition this community including what they are discussing, describe the benefits of such a community, and the advantages and disadvantages of using social media for this type of community. In short, the desired outcome was a complete story of Connected Principals as a CoP. Therefore, this chapter begins with the story of Connected Principals, which actually derives from all of the data sources. The sections on the blog post analysis address the topics of concern within this community, including three main trend areas: classroom/teacher practices, leadership practices, and technology, as well as sub-topics within those three main areas. A pleasant surprise from the blog content was that several of the blog posts addressed the benefits of belonging to the community in addition to the discussion topics. The social network analysis of the Twitter data gives a physical picture of the community as well as providing descriptors of the physical community. Finally, the interview analysis lends further information on the story of the community, which is presented at the beginning of the chapter, the benefits of the community, as well as the advantages/disadvantages of using social media. Taken as a whole, these analyses present a comprehensive picture of this group and how they have created their on-line community.
The Connected Principals Story

In the summer of 2010, Canadian principal, George Couros, called fellow principal Patrick Larkin and presented his idea about creating a blog where interested administrators could post their thoughts and ideas to promote conversations about education. Larkin agreed to come on board, and Couros set up the blog using WordPress. Both Couros and Larkin then posted to Twitter what they were doing. Larkin states that when he first began on Twitter there were not many principals connecting, but they sent out information to those few with whom they were connected through Twitter. However, Couros and Larkin disseminated information to their Twitter network, and in addition to them, six other contributors began to get the blog started.

At the end of June 2010, Couros added the first three posts to the Connected Principals blog. At the beginning of July, he added two more, including one inviting administrators to be a part of the group. With the exception of the post inviting administrators to the group, these first posts were re-posts from Couros’ blog. He wanted to ensure that when people visited the website there was content. The rest of July was quiet, but in August 2010, the blog took off. In that month, there were 57 total posts; Couros posted his vision for the group; and Larkin announced the group’s Twitter hash tag, #cpchat. As of December 2010, there were 45 contributors to the blog, and 718 users of the #cpchat hash tag, showing that the group had continued to grow. Figure 2 presents a screenshot of the Connected Principals homepage, www.connectedprincipals.com, taken on February 22, 2012. This figure shows all the features of this blog: the Guiding Principals, the contributors, blog topic areas, and some of the most recent blog posts.
Descriptive Data of Blog Posts

The entire first year of the Connected Principals’ blog consisted of 376 posts or an average of 31.33 posts per month. As can be seen in Figure 3, the group started slowly in their first couple of months, with a large jump in posts in August 2010. The number of posts then became fairly steady with the second highest number of posts coming in January 2011.
Figure 3: Connected Principals’ First Year Frequency of Blog Posts

By using a simple random sample of Connected Principals’ blog posts from their first year, the data gleaned should be representative of the entire population. Not only should this be true for the content of the blogs, but also for the data on the authors and types of blogs written. The Connected Principals’ website originally listed eight topic areas under which the contributors wrote their blog posts. The authors classify their blog posts according to these categories, with the ability to classify further a single post under multiple categories. Authors may also add a topic area for their post if they do not feel one of the pre-existing topic areas covers their post. In addition to the eight topic areas listed in January of 2011, three additional topic areas were cited by the authors. Some of those topic areas added by the authors later became part of the official list of topics on the
Connected Principals website. Table 2 shows the frequency of these topic areas cited by the authors for the sample of blog posts.

*Table 2: Connected Principal Blog Topic Information*

<table>
<thead>
<tr>
<th>Category</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Best Educational Practices</td>
<td>61</td>
</tr>
<tr>
<td>Leadership Essentials</td>
<td>30</td>
</tr>
<tr>
<td>Technology Integration</td>
<td>12</td>
</tr>
<tr>
<td>Professional Development</td>
<td>11</td>
</tr>
<tr>
<td>Distributed Leadership</td>
<td>8</td>
</tr>
<tr>
<td>Principal Quality Standard</td>
<td>5</td>
</tr>
<tr>
<td>School Branding</td>
<td>4</td>
</tr>
<tr>
<td>Parental Involvement</td>
<td>4</td>
</tr>
<tr>
<td>*Networked Leadership</td>
<td>3</td>
</tr>
<tr>
<td>*Students</td>
<td>2</td>
</tr>
<tr>
<td>*Grading and Assessment</td>
<td>1</td>
</tr>
</tbody>
</table>

*Topic areas not originally included by Connected Principals.

As seen in Table 2, Best Educational Practices and Leadership Essentials are the most frequently reported categories, with Technology Integration and Professional Development well behind and the other topics rarely reported.

The sample of posts ranged in length from 127 to 2,313 words with a mean of 720.88 words. Readers of the blog posts are allowed both to leave comments on the post and re-tweet the post on their own Twitter network. The number of comments for the sample of posts ranged from 0 to 26 with a mean of 4.54. The number of tweets ranged from 0 to 143 with a mean of 22.18.
Although tags often give clearer descriptions of a post's content than the title, only 23 of the posts contained tags. In addition, several of the tags used were the author's name or a Twitter hash tag. Therefore, the tags did not contribute significantly to the description of the content. A final analysis from the database that assisted in finding key words from the content was a word cloud of all of the titles from the sample. Figure 4 shows the resulting word cloud.

Figure 4: Sample Blog Post Title Word Cloud

In word clouds, the words are sized by the number of mentions in the text. So, the larger the word, the more times it was mentioned. In Figure 4, the key words are learning, school, and students. Although titles are not necessarily descriptive of the content of a
particular blog post, this word cloud does show many of the expected topics for an educational blog. Of particular importance is that all of the content eventually leads back to learning.

**Description of Blog Post Authors**

In January of 2011, the Connected Principals’ website listed thirty contributors from five different countries, including four provinces of Canada and sixteen American states. Of those thirty, twenty-nine contributors were represented in the sample. The number of posts ranged from 1 to 16 for each author with a mean of 3.28 posts per author for the sample. Since the sample represented 25% of the first year’s posts, by extension, in the first year, the average number of blog posts per author for the population would be 13.12 posts.

Most of the contributors in the sample wrote three or fewer of the sample posts. However, five of the contributors had six or more posts in the sample, making them noteworthy in both the description of the community as well as possible subjects for the interview portion of the study. These five authors were Jonathan Martin (16 posts), Larry Fliegelman (9 posts), Dave Meister (9 posts), George Couros (8 posts), Akevy Greenblatt (6 posts), and Lyn Hilt (6 posts). Each of these authors’ names are hyperlinked to their biography on the Connected Principals’ website for more information.

In this group of contributors, all are school principals within various school settings, including two elementary principals, a lower school principal, two high school principals, and a K-12 principal. The authors in this group also have their own blogs in addition to posting on the Connected Principals’ blog. Of special note is that one of the
authors, George Couros, is the creator of the Connected Principals’ blog. This group is geographically diverse representing Arizona, Illinois, Pennsylvania, Tennessee, and Alberta, Canada (one author did not list his/her location). Three of the authors also mention in their biography how they can be followed on Twitter. Although these “top five” authors are noteworthy in their contributions, importantly most of the contributors listed on the website were also represented in the sample, indicating a level of dedication to this group.

Content Analysis of Blog

Although the Connected Principals’ website listed eight topic areas, the four main topic areas were Best Educational Practices, Leadership Essentials, Technology Integration, and Professional Development (as seen in Table 2). After careful reading of the blog posts, three main content areas emerged along these lines: Classroom/Teacher Practices, Leadership Practices, and Technology. The topic of Best Educational Practices was divided between what teachers should do in the classroom and what principals/leaders should do to influence what happens in the classroom. Professional Development was not dropped as a category, but rather incorporated into the two topics of Classroom/Teacher Practices and Leadership Practices. Technology Integration was only self-reported in twelve blog posts, but use of technology registered highly in many posts and was therefore listed as a more general content area. Through the use of qualitative data software, it was then discovered that the key words for all of the blogs were “collaboration” and “relationships”.
The top topics areas are an important piece of the Connected Principals story, but it is also important to understand what the readers of these posts find interesting. Therefore, a section on the most commented on blogs is included to give an insight into what the readers felt strongly about.

Although the topic of Connected Principals as a community did not register in the top three themes, it is important to note that the authors wrote about their experience in this community. Because these comments directly related to the topic of the study, the final section of the content analysis discusses these important thoughts. These reflections give insight into how participants in this community view their contributions to and their benefits from participation.

*Classroom/Teacher Practices*

Under the topic area of Classroom/Teacher Practices, many ideas for improving instruction and student performance were discussed. However, four ideas were predominate in the discussions. These four ideas can be captured in a quote from one of the blog posts, “Our students today both want and need to be active, engaged, collaborative, on-line, vigorous empowered, creative solvers of real-world problems” *(Martin, 2010c)*. The four ideas mentioned in this quote: collaboration, relationships, technology, and problem-based learning, constitute the majority of discussions in this category.

Collaboration was a key across all the blog posts. As a classroom practice, it was discussed in two main facets: group work and on-line learning. As a skill vital to the world of work, students need to be able to collaborate both face-to-face and digitally in
various forms. As a teacher practice, collaboration was also dual-faceted. The discussions centered on both teachers working collaboratively with colleagues as well as teaching collaboration skills to their students. Collaboration with colleagues not only spreads support and an exchange of ideas but models for students this valuable skill.

Collaboration, of course, both depends upon and develops relationships. However, the relationship most discussed was the one between teacher and student. “We’ve spent a generation trying to reorganize schools to make them better, but the truth is that people learn from the people they love” (Martin, 2011). This thought reverberated through several blog posts in stories and discussions of how teacher/student relationships motivate learning, develop life-long collaboration skills, and change lives. Another aspect of the relationship piece was that of being student-focused, with teachers willing to meet students where they are and move them forward. Without relationships, several authors noted that remaining student-focused is difficult if not impossible.

Technology is a tricky topic area in that it emerged in numerous ways. However, in terms of classroom practices, students’ ability to use technology was the focus rather than teacher use of technology to deliver instruction. Teacher use of technology for delivery was mentioned as a good practice, but overwhelmingly the discussions centered on student use for collaboration and production. Several poignant statements enforce this idea. “Regardless of the device, the emphasis has to be on how the students will use the technology to demonstrate and improve learning” (Carter, 2011). “But as our digital generation comes to school, entirely familiarized with the use of digital tools on a daily basis to communicate, research, collaborate, plan, organize, investigate, create, and
publish, how dare we say to them they cannot use these same tools in school as they use outside of it?” (Martin, 2010c).

Finally, project-based learning (PBL) was a common topic of discussion. “. . . effective PBL achieves so much of what we are aiming for in education . . .” (Martin, 2010d). PBL figured highly in discussions of 21st century education, and two PBL schools were referenced by several authors as what they aspire to in their schools. PBL was shown as a challenging but potentially highly successful means to instill the skills students will need in the world of work. The idea behind PBL is summed up as, “Start learning with a challenging problem that students can find some relevance or interest in, and then allow them to develop their own curiosity for it” (Martin, 2010b).

Leadership Practices

The second main strand, leadership practices, was similar to the teacher/classroom practices strand in that there were many topics discussed with three recurring themes: empowering and supporting teachers, collaboration both within and outside of the building, and technology. Considering the relationships both required for and created through empowering and supporting teachers, relationships are still key for the leadership practices topic.

The area of empowering and supporting teachers came across in many different ways throughout the blog posts. Support and empowerment was discussed in terms of building morale, providing meaningful professional development, building leaders, and collaborating on school issues. In some of the blog posts, the main theme was simply using empowering words with staff or giving frequent, sincere praise. This area is best
summed up as, “Good leadership consists of motivating people to their highest levels by offering them opportunities, not obligations’ (Fliegelman, 2011).

Again, collaboration is closely related to relationships and was even discussed as a form of empowerment for teachers when leaders offered opportunities to collaborate to their staff. However, it appeared equally important for leaders to collaborate with other leaders. The authors discussed collaboration with other educational leaders in various ways, including professional learning networks, interactive CoPs, professional learning communities, and virtual professional learning networks. Overwhelmingly, the collaboration with other leaders focused on the use of technology even referred to as digital leadership. In reference to himself as learner-in-chief, Martin (2010a) says, “Collaborative learning is more stimulating, more challenging, and more current; fortunately we live in an age which dramatically enables ongoing social learning: the internet.” This collaboration with other leaders is vitally important to this study and provides excellent support for the relevance of such a study. Therefore, this theme is addressed further in a separate section.

Technology

While technology came up in leadership practices for collaboration, it was also a strong theme in other ways. Leaders reported using technology to communicate with parents and the community through video, blogs, and podcasts. Several authors referred to blogging as a method of reflecting on their practice. Also, it seemed important to several of the authors that leaders be able to model the uses of technology that they would like to see in their teachers and students.
Although technology was included in both the classroom/teacher practices and leadership practices strands, it seems important to reiterate that technology was discussed in terms of student use, teacher use, and leader use. In describing both his own predisposition to technology use as well as the world our students inhabit, Carozza (2010) refers to his father, “… he would have an iPhone, an iPad, and a very fast desktop. He’d be a texter, a blogger, a Facebooker, and his house would be networked. He would probably enjoy helping me with my monthly podcast, dabble into screencasts, and he’d be into digital photography.” The world described by Carozza is the world that many other authors seemed to aspire to provide in their schools. In fact, with the exception of digital photography, all the technology mentioned by Carozza was also discussed in at least one other blog post.

*Top Comment Blog Posts*

Just reading a blog post may increase the reader’s knowledge; however, some of the benefits of a blog, as discussed more later in the interview analysis, include the ability of readers to comment, writers to then respond, and a larger discussion to occur. Thus, the top five commented upon blog posts from the sample are discussed in order to give an idea of what topics are being discussed by the audience of Connected Principals. The number of comments listed for each blog post includes responses to comments made by the author, so often the number of commenters is much lower than the total number of comments. On all of these posts, the author did respond to the comments given, and in many situations, a brief dialog developed.
The most commented on blog post in the sample, with 26 comments was, “3 Keys to a Flipped Classroom” by David Truss. This post is part of perhaps the “biggest” ongoing discussion on the Connected Principals blog. This post actually refers to two previous posts by Jonathan Martin, “Reverse Instruction: Dan Pink and Karl’s Fisch Flip” and “Advancing the Flip: Developments in Reverse Instruction”. Although neither of Martin’s two posts was in the sample for this study, they rank highly in number of comments with 56 and 24, respectively. The comments on Truss’ post include responses from Jonathan Martin and a few other Connected Principals contributors, as well as comments from six people not associated with the Connected Principals group. Overall, this post seems to represent the classroom practice that is being discussed the most by a large group of educators on this blog. In addition to the large number of comments, the dialog around these posts was mentioned specifically by two of the interviewees. Also In addition, none of the other top five posts in terms of comments discusses a classroom practice.

The second most commented upon post, “Creating a Vision for Connected Principals, was written by Connected Principals founder, George Couros, and is actually part of the discussion surrounding the development of Connected Principals’ Guiding Principles. This post is one of the first for the group, with most of the 23 comments coming from other contributors to the blog. However, there were comments by three outsiders, indicating that even from the beginning, educators were paying attention to this group. The high ranking of this post also indicates that a high level of care and concern was put into creating the vision for this group.
“to iPad or not to iPad” by Amber Teaman, which prompted 22 comments, is summarized by the title. In the post, Teaman describes her search for the right technology for her needs and gains quite a bit of advice in response. This post is interesting in that it showcases the group’s interest in technology as well as provides an example of how support can be derived from the group.

The number four blog post, with 19 comments, was again by George Couros. This post, “Our First Days: The Gift of Time”, describes how he handles his first-of-the-year staff development days. In the post, he discusses his choice to give his teachers more time in their classrooms after the necessities are taken care of, rather than trying to pack in professional development. In contrast to his previous post, all but one of the comments was from people outside the Connected Principals group.

Finally, Dave Meister’s “Why You Should Blog, Twitter, and Comment” was a brief post on the importance of educational leaders being a part of online discussions about education. Although there were only 14 comments on this post, it shows the value that the contributors and followers of Connected Principals give to this forum. This post is also a fitting transition into the Connected Principals comments upon their group.

*Connected Principals on Connected Principals*

As previously noted, several authors discussed the necessity of collaborating with other educational leaders. In order to provide the best description of their ideas, several statements on this topic follow. The Connected Principals’ contributors cited below all reflect positively on their experience, as would be expected.
• One of the most positive aspects of interacting with other educators via social media, whether it be Twitter, Ning communities, or a meeting of the minds such as the Reform Symposium, is the array of talented individuals working in education today (Hilt, 2010).

• In the last 8-9 months, I have really been involved in getting to know so many educators from all over the world through Social Media. This has been through mediums such as Twitter and my blog, along with the “Connected Principals” website. My knowledge in several areas has grown a tremendous amount through not only connecting with information, but more importantly people (Couros, 2010).

• . . . recognizing that the most important way for educators to confront and accept the challenge to educate effectively in this fast-changing era is to embrace both the responsibility and the opportunity to grow and learn, ourselves, each and every day, in collaboration with each other at schools which make serious commitments to this collaboration, and via the power of social networks online (Martin, 2010e).

• These interactive communities of practice will propel schools forward in preparing to be college, career, and citizen ready. And it all starts with the leader” (Nichols, 2011).

• This Connected Principals blog is a great learning space that has provided me with insights and lessons from people I admire and respect” (Truss, 2011).
Further, two contributors specifically addressed the benefits of blogging in a community.

- For me, blogging is about creative expression . . . an opportunity to produce something and share it with the world” (Delp, 2011).
- I blog as a means to reflect on my work as an educational leader and to open up my ideas to elicit constructive feedback from a global collection of exemplary educators” (Sheninger, 2011).

These authors all appear to truly believe that their participation in this type of community is important to their practice. They describe a community of trust and respect where knowledge is freely given and received.

**Summary of Blog Analysis**

In summary, the blog analysis gives two different insights. Primarily, this analysis shows what the Connected Principals discuss, but to a smaller extent it also shows both how the group interacts and the wider audience they reach. In terms of what is discussed by the group, the three main topic areas may include teacher/classroom practices, leadership practices, and technology, but the comments show that the followers of the group are interested in the same things. Additionally, the posts about the group itself give an insight into the value the members find in belonging to this group. This brief glimpse into the discussions on the blog post also hint at an even larger group included in what many of the authors describe as their Professional Learning Network, which in addition to the blog, includes Twitter.
Social Network Analysis of Twitter Data

Not long after the establishment of the Connected Principals blog, co-founder Peter Larkin, established the #cpchat hash tag on Twitter, giving Twitter users the ability to continue discussions on blog posts or other topics of concern in the field. Therefore, this network created by those Twitter users who are a part of Connected Principals is an important aspect in understanding the group as a whole. In order to understand a Twitter network, social network analysis was used to analyze this part of the group.

As previously noted, the social network analysis methodology graphs networks of relationships, measures certain traits of these graphs, and assists in finding important features of the relationships. Initially, an entire network is visualized in order to have an understanding of what the connections between the nodes, in this case Twitter users, looks like on paper. In the case of Connected Principals, data on their Twitter network were pulled on December 14, 2011, by using the import feature of NodeXL that allowed for data to be pulled specifically for users of the #cpchat hash tag. This import resulted in a network with 718 nodes or vertices and 25,125 edges. These relationships are directional; some users “follow” other users and then may or may not be “followed” in return. Therefore, a directed graph was created for this network. The arrows point in the direction of who is “followed” in the relationship. As can be seen in figure 5, this is a large network, creating some difficulty in finding key components based only on the visualization.

Despite the dense appearance of the network sociograph, the network density was only .0488 meaning 4.88% of all possible edges existed within the network. The
maximum distance within the graph is four, with an average distance of 2.1148. Distance represents the shortest path between any two nodes on the graph, so despite 718 total nodes, the average shortest path is just over two with a maximum path of four. However, figure 5 demonstrates numerous nodes in the center of the network with surrounding members on the periphery. From the arrows, it can be seen that some of the peripheral nodes are sometimes “followers” of those in the center and are sometimes the “followed”.

*Figure 5: Sociograph of Connected Principals’ Twitter Network*
While some directionality can be seen on the outer edge, the graph does not clearly show what is happening towards the center. Therefore, a second sociograph of the network was created.

*Figure 6: Sociograph of Connected Principals’ Twitter Network Subgroups*

The graph in figure 6 shows the four subgroups found by NodeXL using the Clauset-Newman-Moore method. This method, developed by physicists, finds subgroups within large networks and is the default method for this procedure for NodeXL. The four subgroups are also coded by color. These are the same colors that appear in the overall
network sociograph in figure 5. In figure 6, however, the edges that connect the subgroups to one another are not shown so that more detail of the individual subgroups can be discerned. Figure 6 shows the four subgroups for the Connected Principals’ Twitter network. The graph in the top left (dark green) is the largest of the subgroups, bottom right (dark blue) is next, top right (light blue) is third in size, and the graph bottom right (light green) is the smallest of the subgroups. Even within these smaller subgroups, the features of the center of the graphs are difficult to discern.

Since subgroups or clusters indicate nodes that are more closely related to one another than to those in other groups, it is important to know more about the different subgroups. Although degree, the measure of number of connections, is discussed later, figure 7 uses degree to adjust the size of the nodes. This gives a “picture” of the most connected nodes for each of the subgroups.

In addition to the node size being dependent upon degree, those nodes whose combined in- and out-degree are 300 or more have their Twitter label showing in the center of their node. Finally, in figure 7, the labeled nodes have been pulled to the edges in order for them to be seen clearly.

From figure 7, although more information can be discerned about the clusters, the clusters are regularly inter-connected to one another. However, from the re-grouping of the clusters, it is easier to see who “anchors” the four subgroups in terms of degree.
The largest of the clusters, shown in dark green nodes, has 282 nodes, 7573 edges, and 17 nodes with a total degree of 300 or greater. The highest overall degree in this group is Shelly Terrell, a frequent contributor to the Teach Paperless blog, which is another node in this cluster with a degree over 300. This cluster includes five contributors to Connected Principals with a degree over 300, including co-founder Patrick Larkin, Eric Sheninger, Dave Meister, Lyn Hilt, and Akevy Greenblatt. The “anchors” of this cluster also includes three other blogs: HP Teacher Experience.
Exchange, 21st Century Principal, and Teach Paperless. The final eight “anchors” are all educators and bloggers, including Tom Whitby the founder of EdChat, a weekly education discussion on Twitter.

The second cluster, denoted by the dark blue nodes, has 196 nodes, 4269 edges, and only eight nodes with a degree over 300, but the highest ranking node in this cluster is Connected Principals founder, George Couros. The other “anchors” here are Connected Principals contributors David Truss, Shannon Smith, Jessica Johnson, and Chris Wejr, and three other educators and bloggers. Among these other educators and bloggers is Dr. Alec Couros, an education professor at the University of Regina in Saskatchewan, Canada, and the brother of George Couros.

The final two clusters are much smaller in size as well as nodes with a degree over 300. The light blue group has 181 nodes, and 939 edges, but only three “anchors”, the education blog, Edutopia; Connected Principal contributor, Justin Tarte; and educator/blogger, Steven Anderson. The light green cluster has 59 vertices, 118 edges, and two “anchors”, Mark Brumley, the moderator of HP Teacher Experience Exchange, and the website, Teacher Learning Community.

Overall, the clusters give some information about how the larger community is composed of some smaller inter-connected communities. It follows that because George Couros and Patrick Larkin were the founder and co-founder, their previous networks would be brought into the group as such inter-connected clusters. Although there is not the same link with the two smaller clusters, with the addition of certain other nodes to the larger group, the resource base grew.
Although the overall graph metrics and clusters give some detail of the relationships within the network, it is also important to know about the key nodes within the network. This information is found through measures of centrality. For the Connected Principals’ Twitter network, four measures of centrality were calculated, with the results of the top ten in each category given in table 3.

In-degree represents the number of arrows coming in to a node or in Twitter terms, how many times a person/group has been “followed”. Out-degree then represents the number of arrows coming out of a node or the number of people/groups that node “follows”. The average in-degree was 34.993 as was the average out-degree. In terms of the top ten shown in table 3, the highest in-degree was 420 and the highest out-degree was 339, showing that the most central users were following and followed by hundreds of others.

Table 3: Connected Principals’ Twitter Network Measures of Centrality

<table>
<thead>
<tr>
<th>Rank</th>
<th>In-Degree</th>
<th>Out-Degree</th>
<th>Betweenness</th>
<th>Closeness</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>web20classroom</td>
<td>markbrumley</td>
<td>edutopia</td>
<td>edutopia</td>
</tr>
<tr>
<td>2</td>
<td>edutopia</td>
<td>edutopia</td>
<td>markbrumley</td>
<td>web20classroom</td>
</tr>
<tr>
<td>3</td>
<td>nmhs_principal</td>
<td>davidwees</td>
<td>web20classroom</td>
<td>gcouros</td>
</tr>
<tr>
<td>4</td>
<td>tomwhitby</td>
<td>gcouros</td>
<td>gcouros</td>
<td>markbrumley</td>
</tr>
<tr>
<td>5</td>
<td>shellterrell</td>
<td>hpteachexchange</td>
<td>hpteachexchange</td>
<td>tomwhitby</td>
</tr>
<tr>
<td>6</td>
<td>gcouros</td>
<td>bhsprincipal</td>
<td>nmhs_principal</td>
<td>bhsprincipal</td>
</tr>
<tr>
<td>7</td>
<td>markbrumley</td>
<td>shellterrell</td>
<td>tomwhitby</td>
<td>nmhs_principal</td>
</tr>
<tr>
<td>8</td>
<td>cybraryman1</td>
<td>courosa</td>
<td>bhsprincipal</td>
<td>shellterrell</td>
</tr>
<tr>
<td>9</td>
<td>bhsprincipal</td>
<td>tonnet</td>
<td>teachpaperless</td>
<td>cybraryman1</td>
</tr>
<tr>
<td>10</td>
<td>courosa</td>
<td>datruss</td>
<td>cybraryman1</td>
<td>davidwees</td>
</tr>
</tbody>
</table>
Betweenness shows the key flow-through nodes, meaning that they are the main path through which information flows. Although the nodes with the highest degree are not necessarily the same as those for betweenness, as seen in table 3, several of the same nodes appear in all of the top ten lists. This is also true for the final centrality measure, closeness. Closeness measures the shortest average distance from one node to another, indicating that the highest ranking nodes in closeness can be connected to all other nodes in the fewest number of steps.

In this case, within the top ten of all four centrality measures, there were only 15 different nodes represented. Of those 15 nodes, four were contributors to the Connected Principals’ blog, three were educational organizations, three were contributors to blogs on those educational organizations, and the remaining five were various educators/bloggers. Table 3, shows that four of the group appeared in the top ten of all the centrality measures. Of those, one is George Couros/gcouros, the founder of Connected Principals; another, Patrick Larkin/bhsprincipal, is a co-founder and contributor to the Connected Principals’ blog; Edutopia is an educational organization; and the final one, Mark Brumley/markburmley, is the moderator of the educational blog hosted by HP Teacher Experience Exchange/hpteachexchange. One final note about a member of the top ten centrality group, courosa is Alec Couros, previously mentioned as the brother of Connected Principals founder, George Couros.

Although the social network analysis provides a snapshot of this group, neither does it tell the full story of the group, nor does it give any indication of why this group
has become so large. Therefore, the information from the interviews is of vital importance.

**Description of the Interviewees**

The blog analysis gave a rich description of what is discussed by Connected Principals, and the social network analysis gave a picture of the Twitter network, but neither of these analyses really told the story behind the group or explains why the group has become so prolific. Only through interviews could the “story” be discovered.

The six interviewees were chosen based on three criteria: previous knowledge of their role in starting Connected Principals, multiple blog posts in the sample, and involvement in the Twitter network. **George Couros** was known to be the founder of Connected Principals, but through reading the blog post sample, it became apparent that **Patrick Larkin** was also involved in the creation of the Connected Principals community. Both of these interviewees had posts in the sample and they ranked in the top 10 in all four centrality measures in the Twitter network. The top three contributors in terms of posts in the sample were **Jonathan Martin** with 16, **Dave Meister** with 9, and **Larry Fliegelman** with 9. **Eric Sheninger** was added because although he had only three posts in the sample, he was in the top 10 centrality measures in three of the four categories. All six of the interviewees are white males, and all are principals of schools, although Dave Meister’s official title is “Director” and Jonathan Martin’s title is “School Head”.

Although there was little diversity in race, sex, or job title, they represent an elementary school, three high schools, a 6-12 school, and a K-12 school. The interviewees also vary in experience in education from 12 to 22 years, with an average of 17.33 years. Time in
their current position varies from 1 to 11 years, with an average of 4.33 years. The hyperlink on each of the names goes to the biography provided by each of the interviewees on the Connected Principals website.

Content Analysis of the Interviews

Twelve questions were asked in the interviews in order to glean vital information about the group. These questions are those listed in section II of Appendix B. The analysis of the interview transcripts then led to three separate areas of information: the background information on the group, the importance of the group/network in terms of the interviewees’ professional lives, and the role of social media in their professional discourse. Most of the background information on the group was presented at the beginning of this chapter in order to set the background for the other analyses. The rest of the data from the interviews are presented in the following sections.

The Importance of Connected Principals

“It (Connected Principals) was an idea for principals to collaborate to enrich each other’s professional practice by sharing ideas and resources” (D. Meister, personal communication, January 16, 2012).

Connected Principals began with the desire to enrich the professional practice of administrators, and the interviews show that the idea has become a reality. In fact, all the interviewees used similar language about the group promoting connected or networked learning, creating a centralized location for resources, and discussed ways in which their practice had improved through their participation. However, these ideas are best presented in the words of the interviewees.
• What the whole thing is about for me is we share ideas not because we think that they’re the best ones, but because we’re excited about it, and we want to have a conversation. But then, you get people you’re connected with and they take your ideas and take them a step further, making your ideas even better, so I think that’s really the power of the thing (Patrick Larkin, 2012).

• The ideas that are talked about and debated and written about on Connected Principals and also on the #cpchat hashtag have enriched my practice immeasurably (D. Meister, personal communication, January 16, 2012).

• I think the goals and purposes are to broaden our leadership horizons, push each other to get better, provide constructive feedback on ideas, to present new ideas that have worked, and to also add a layer of transparency to what we do as administrators (E. Sheninger, personal communication, January 18, 2012).

• I gain an instant audience to bounce ideas back, to comment on what I write, tell me what ways to think differently. I also gain a good sense of validation…I think it’s really nice when somebody writes in or another principal posts something that cements an idea for me, or confirms something that I either am doing already or want to do (L. Fliegelman, personal communication, January 19, 2012).

• A large piece of it is just our shared commitment to networked learning, to our learning journeys, to our growth of understanding and knowledge, that most of us feel we learn by writing, and we learn by reading other peoples’ writings” (J. Martin, personal communication, January 25, 2012).
Everyone there (Connected Principals) has joined because they felt there was an opportunity to share their voice, and share what they believe, and share their learning (G. Couros, personal communication, February 1, 2012).

Overall, the interviews demonstrated that this group had come to be a vital part of each of the interviewees’ professional growth and a rich resource for their professional needs.

The Role of Social Media in Professional Discourse

The key to this group is the platform of social media. Neither the blog nor Twitter network could have existed just a few short years ago. In fact, blogs have only been around since the 1990s, and as previously stated, Twitter did not start until 2006. This group would not have begun if George Couros and the others did not see a value to using social media. Therefore, it was important to understand the perspective of the interviewees in regard to the use of social media for professional discourse. As with any medium, there are advantages and disadvantages to its use, so the interviews included questions about both of these aspects of social media.

Almost unanimously, the interviewees mentioned time, convenience, and the number and location of people they could connect with as the advantages of social media. In addition, two of the interviewees provided other advantages of social media. Jonathan Martin discussed the ability of social media to give continuity to learning. He discussed how there was a definite end to a book or a conference, but that with social media he could follow authors of books or continue conversations from conferences. “Social media is opening a book, extending the conference, gaining that continuity that helps you
keep learning alive” (J. Martin, personal communication, January 25, 2012). George Couros also added a different aspect of social media, the ability to listen. “I think when you use traditional things like newsletters or even a traditional 1.0 website, there is only talking, there’s no listening, and I think in this medium you’re showing your willingness to be open, and connect and listen to the thoughts of others to become a better administrator” (G. Couros, personal communication, February 1, 2012).

Although these interviews gave a sense that the pros greatly outweighed the cons, they did share two disadvantages of social media. The main disadvantage given by the group was the lack a true face-to-face relationship. The comments included: “The most important way to communicate is still face-to-face” (P. Larkin, personal communication, January 16, 2012), “There’s a perception that you are disconnected from people” (E. Sheninger, personal communication, January 18, 2012), and “I have these relationships with people I have never met” (L. Fliegelman, personal communication, January 19, 2012). The other disadvantage given was that one could waste time with social media, specifically in the process of determining whether information was valid.

Summary

The three data analyses each contributed to the description of this on-line CoP for school leaders. The content analysis of the blog aimed to describe what these administrators were discussing within their community. Teaching students and teachers to collaborate and build relationships, leaders collaborating with teachers and other leaders, and all of the above using technology to expand the ability to collaborate would somewhat summarize the blog content of Connected Principals. However, this analysis
also gave some indication of what the followers of the group found important and provided information about the people contributing to the group and how they viewed the group itself. The social network analysis of the Twitter network, provided a graphical picture of the group, but also showed the groups within the group, the central connections within the group, and just how large the overall audience of the group truly is. Finally, the interviews provided the story of Connected Principals. This final piece shows that even though the community is large, there are valuable connections being made that would never have been possible without social media.
Chapter 5

CONCLUSIONS AND RECOMMENDATIONS

Introduction

The purpose of this case study was to explore how a group of principals from diverse backgrounds and different locations create and perpetuate a virtual community of practice. The specific group chosen for this study, Connected Principals, is a group that has come together to create a regular blog on significant issues within education as well as to discuss these issues on Twitter via a hash tag. In order to provide a comprehensive description of this group, data were gathered from blog posts and the Twitter network, and through interviews. The findings of the study are reported in the previous chapter. This chapter frames the findings within the research questions and literature review, discusses the findings as they relate to professional development and through the lens of social capital, describes the challenges and limitations of the study, and finally provides recommendations for further research on this topic.

Framing of the Findings

This study is descriptive in nature. According to Barab, Kling, & Gray (2004) there is a need to understand and describe on-line CoPs for educators. The original idea of the study was that through the three data analyses, an understanding and description of one such on-line CoP, Connected Principals, would be added to the literature. However, the results were not exactly as expected. Although in many ways this group fits the descriptions of a CoP, two key attributes more closely align this group with an affinity
space. What follows are the conclusions of how Connected Principals fits the literature on CoPs in most circumstances, and how it better fits with theories on affinity spaces.

*Connected Principal: Almost an On-line Community of Practice*

In many ways, the data verified the creation of a CoP through Connected Principals. Situated learning places learning in the context of social relationships where a process of participation leads to the construction of identities and practices. This is clearly seen within Connected Principals through their creation of Guiding Principles and in their descriptions of improved practices specifically based on knowledge gained from members of the group. Wenger (1998) also differentiates CoPs from formal groups, teams, and informal networks in terms of purpose, membership, binding, and length. Rather than delivering a specific product or just passing along information, CoPs develop members’ capabilities, and create a forum to build and exchange knowledge. Again, this development is seen within this group as the members cited examples of their growth however, the size of the forum they have created also demonstrates the creation of a large knowledge-base. Next, the members select themselves instead of being assigned to the group. This aspect is shown in the ability of any administrator to request to become a contributor and the ability of anyone with a Twitter account being able to join those discussions. Finally, according to Wenger (1998), in terms of the creation, accumulation, and dissemination of knowledge, CoPs serve several functions. First, they are basic channels for information flow. The design of the blog with posts and comments, and then the ability to continue or begin new discussions on Twitter show this group’s channels for flow of information. Second, CoPs foster the retention of knowledge
because of their usefulness to practitioners. Many members refer to the group as their Professional Learning Network. This description in addition to their comments verifies the usefulness of this group to these educators. Next, CoPs steward competencies to keep the members at the forefront of their field. The topics discussed on Connected Principals indicate that these educators are trying to stay at the forefront of education and leadership. Finally, CoPs provide homes for identities. These groups develop a particular identity that guides them in deciding what information is important: what they pay attention to, participate in, and avoid. As mentioned previously, this identity is well-established in the Guiding Principles. Overall, CoPs foster professional growth through the sharing of knowledge and development of relationships, a result that has clearly been accomplished by this group.

*Connected Principals as an Affinity Space*

The troubling aspects of Connected Principals as a CoP come in the definition of its membership and the idea of who belongs to the group. Although the contributors to the blog are easily identified, that does not constitute all the “members” as many other people read and comment on those blogs. On the Twitter network, 718 unique nodes show that there are many people involved in those discussions that are not contributors to the blog. From this perspective, it is difficult to say with any certainty who would claim that they are members of, or belong to, Connected Principals.

According to Gee (2004), the idea of community carries a connotation of close personal ties among members. He further states that the key problem with a CoP is that it attempts to label a group of people when it is not always possible to identify who is and is
not a part of the group. Gee then offers the idea of a space where one can then speak about the extent that a people interact even if they do not form a community. Because of the use of modern technology, these spaces do not usually describe a physical space, but any forum through which people interact. An “affinity space” then is more specifically defined by Gee (2001):

What people in the group share, and must share to constitute an affinity group, is allegiance to, access to, and participation in specific practices that give each of its members the requisite experiences. The process through which this power works, then is participation or sharing. For members of an affinity group, their allegiance is primarily to a set of common endeavors or practices and secondarily to other people in terms of shared culture or traits (p. 111).

Although these “affinity spaces” have much in common with CoPs, they have the key difference of so-called members of “affinity spaces” being able to move in and out of the space as it suits their needs. Connected Principals then meets all of the criteria for an “affinity space” as the “members” all have an allegiance to, access to, and choose to participate in the blog, the Twitter network, or both. The primary allegiance is to the needs of children in the world of education. Whether the contributors to the various discussions consider themselves a “member” of Connected Principals or not, they interact within the space of the group. These interactions do not usually then lead to close personal ties among the “members” as a community would. In fact, the interviews showed that one of the disadvantages of using social media for such a group is the lack of
face-to-face interactions. Although some “members” have met each other at conferences, they do not have close personal ties to many, if any, of the other “members”.

**Table 4: Communities of Practice vs. Affinity Spaces**

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Community of Practice</th>
<th>Affinity Space</th>
<th>Connected Principals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participation leads to identities and practices</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Participators build and exchange knowledge</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Participators self-select</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Group has a defined membership</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Participators have close personal ties</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>


Table 4 shows a comparison of the main attributes of a CoP and affinity space and where the Connected Principals group fits with those attributes. Both CoPs and affinity spaces are part of a participatory culture that is increasingly seen within social media (Jenkins, 2006). However, within the various social media, some groups appear to have clear membership, where participants develop close bonds and others remain more open and less intimate. It is this open and less intimate environment created by Connected Principals that defines it as an affinity space.

**Discussion**

Two implications of describing how a group of principals come together in order to create an on-line CoP, or in this case an affinity space, were that there would be an example of meaningful professional development for principals and that those principals
Professional Development

Dempster (2001) defines a professional sustenance orientation for professional development as emphasizing “learning derived from individual and collective subjective experience of people in their everyday educational practice” (p. 5). For principals, this type of learning seems to be difficult to find, but Dempster (2001) claims that two main vehicles are mentoring and networks. Principal networks are commonly seen as an important professional development activity for principals. These networks can assist in problem-solving, provide a broad knowledge base, and offer professional feedback. Garber (1992) also found that networking can help reduce the isolation that principals feel. Studies have also reported that a large percentage of principals perceive networking as being helpful to their practice. A report by the National Staff Development Council (2000) notes that the best professional development activities for principals focus on the “real work” of the principal. This “real work” criterion is often met through principal networks.

Through all of the data analyses, the creation of a strong network of principals was verified. First, in the blog analysis, several of the blog posts had comments on the importance of the Connected Principals group for their professional practice. In both the blog posts and interviews, there were references to Connected Principals as the participants’ Professional Learning Network. The social network analysis of the Twitter network presented a picture of a large network from which the participants can draw
information. The four subgroups within that network then indicate smaller groups that participants are more closely related to and from which their information is derived.

Finally, the interviews unanimously supported the value of this group in terms of their professional learning. Problem-solving, a large knowledge base, and professional feedback were all attributed participation in this group both through the blog and the Twitter network. Overall, the findings of this study indicate that participation in such a group is an extremely meaningful and accessible means to professional development for principals and other administrators.

The findings of this study present an important consideration for school districts looking to recruit, develop, or retain qualified administrators. Peterson (2002) reported from a Public Agenda survey that 50% of superintendents have trouble recruiting qualified principals. In urban settings, recruiting and retaining principals is a problem for 60% of superintendents (Darling-Hammond et al. 2007). In light of such staggering difficulties, the development or support of on-line affinity spaces for administrators could be a boost to school districts. By developing or supporting the use of these groups, school districts could claim the network as part of the benefits to administrators, use the same network to develop administrators already in place, and the network might then also be part of a support for administrators that would encourage them to stay in that district.

Generation of Social Capital

Another important aspect of this study was the generation of social capital. Although the basis of this study originally lay within the realm of CoPs, as seen in Table 4, many attributes are similar to those of affinity spaces. Onyx and Bullen (2000)
concisely identified five main themes that are consistent throughout the literature on social capital: a network of relationships between entities, reciprocity, trust, social norms, and personal and collective efficacy. All five of these requirements are met through the Connected Principals space. Therefore, the generation of social capital can still be considered for this group. Figure 8 shows an adjusted version of Figure 1 for this situation.

*Figure 8: Affinity Spaces Generating Social Capital*

Lesser & Prusak (1999) outlined four aspects of social capital linked to CoPs: the formation of a network of individuals with relevant knowledge; development of trust among members; knowledge sharing among members; and the creation of group norms. These aspects are all seen in Connected Principals. Throughout the three data analysis, a strong network of educators with a wide range of knowledge has clearly formed.
Although the number of contributors to the blog is relatively small, a wider audience is involved in discussions through that forum via comments and replies to comments. The Twitter network then shows just how wide an audience is involved in the group overall. Trust was indicated initially in the willingness of educators to participate. However, trust was further examined through a specific interview question on how trust develops within this group. The responses varied on how trust develops: through agreement with the Guiding Principles; through experience with people’s posts; through consistent discussions; and in some cases through name recognition. However they described the development, all those interviewed indicated that there was trust among the group.

Knowledge sharing within this group is implied simply by taking part. “It’s making learning transparent, that’s the big basis of Connected Principals, is that we can make our learning visible to others” (G. Couros, personal communication, February 2, 2012). The final aspect is that of group norms, which this group has clearly stated through their Guiding Principles.

**Implications of and for Social Capital**

In a simplistic definition, social capital is the positive consequence for individuals and communities that comes from involvement and participation in groups. Social capital can be a source of power and influence. However, Portes (1998) outlines four negative aspects of social capital, “exclusion of outsiders, excess claims on group members, restrictions on individual freedoms, and downward leveling norms” (p. 15). In the case of Connected Principals, there may be a negative implication, the exclusion of outsiders.
Although Connected Principals is seemingly open to any who wish to participate, there are many principals who may not be able to do so. From the analysis of the contributors listed on the website, it was clear that the group was dominated by white males. Similarly, those contributors selected for interview were all 6 white males. Considering the inclusive ideas from the group, this exclusion may exist due to natural inequities in schooling. It is possible that the participants in this group come from a privileged class; they lead schools where they have the time in their day to participate, they have access to the technology necessary to participate in such a group, and their school districts support the practice. This group may therefore be exclusionary to those principals who lack the time, technology, and support to participate. It may be likely that those principals in the excluded group are leaders of schools with lower socio-economic status. In addition, those leaders are most likely in large urban school districts with higher levels of minority students as opposed to the included participants who are likely from mostly white suburban school districts. This inequity of access then perpetuates a cycle of social capital increasing within a dominant group.

Challenges and Limitations

This study posed several challenges: the limitation of time; issues with both the blog analysis and social network analysis; and the limited number of interviews. Of these three, the greatest challenge came in the limitation of time. Connected Principals is a very new group, and therefore, it made sense to examine their first year of existence. However, analyzing a changing group’s first year well into its second year caused some trouble with accurately presenting the information as it was in the first year. For
example, contributors to the group can self-select at any time by contacting George Couros. This was not known until well into the study, so the listing of contributors created in January of 2011 does not give a picture of when contributors joined. Likewise, it was impossible to track the addition of topic areas over time. Finally, without classifying every post within the first year, it is impossible to discern if particular topic areas are discussed more frequently in certain months. In general, time was a limiting factor in the amount of research that could be performed.

In the blog analysis there were two main issues: embedded information that could not be analyzed and the sheer number of posts. Initially, three posts from the sample were removed due to embedded video, graphics, or a link to an external website, without which the content of the actual blog post was meaningless. Although these three posts were replaced, it would be advantageous to be able to include different types of information in addition to the written comment of the post. All of the blog posts also have at least one image at the top of the post. Many others have various graphics embedded throughout. Although these graphics did not necessarily render the written commentary meaningless, they do add to the overall message of the post. The other challenge with the blog analysis was the total of 376 posts in the first year. An analysis of all these posts from the first year would have provided the most accurate description of the group, but such an analysis was just not feasible.

The social network analysis used in this study was both limited and challenging. Only a small amount of this methodology was utilized because of the researcher’s limited knowledge within this field. Although the information from this analysis was essential to
the goals of the study, the methodology could have been used to a greater extent using more advanced analyses. This analysis was also limited in the size of the network. Although social network analysis is continually being used to analyze larger and larger networks, it is still difficult to create a clear sociograph of such a large network. Again, a researcher with more knowledge and skill within this methodology could create a superior sociograph of this network.

Finally, this study is limited by the number of interviews included. Although the six interviewees were carefully selected for their involvement in the group, their perspectives were quite similar. For the purposes of this study, these six individuals provided vital information to describe the formation, benefits, and use of this group, but a larger interview pool could have contributed further.

\textit{Suggestions for Further Research}

The suggestions for further research primarily stem directly from the challenges and limitations of this study. First, more information is needed about this type of group for educators over time. As mentioned previously, changes to the group and topics discussed need to be tracked over several years to determine how such an on-line space changes and grows. In addition to the need for time, more in-depth studies would be valuable in all three data analyses. A larger sample of blog posts would provide more accurate information about the topics being discussed. In several of the interviews, blog posts were referred to that were not a part of the sample in this study. The addition of these posts and more would generate a clearer picture of the topics of concern for this group. A more in-depth use of social network analysis both could give a clearer
sociograph of the group and provide more data on how information flow through the members of the group. This advanced social network analysis would give information on group dynamics that are not discerned in this study. Additional interviews would also greatly contribute to further studies. The interviews for this study were purposefully selected; however, interviews of those who only participate on the blog, only participate on the Twitter network, and those who are not contributors but comment on blog posts would give information on such a group from three different perspectives not represented by the current study.

There are two other suggestions in addition to the further research related to challenges and limitations to this study. Within the social network analysis, several other educational blogs with Twitter hash tags were revealed. Research comparing two or more of these groups would greatly enrich the literature in this field by showing similarities and variations within these spaces. Specifically, the blog, Edutopia, was a central node in the Connected Principals network. A comparison of Edutopia and Connected Principals would provide great insights into on-line affinity spaces in education. This study also viewed on-line CoPs and affinity spaces as generators of social capital. Although this study supports other work on social capital within such groups, it does not attempt to measure social capital in any way. Studies that focused on the generation of social capital in this area could provide even further support for the formation of these communities to meet the professional development needs of educators.

All the suggestions for further research would build on the findings of this study and add to the creation of a full body of literature in this relatively new field. As stated
by Barab, Kling, & Gray (2004), “Building online communities in the service of learning is a major accomplishment about which we have much to learn”. The same could be said for online affinity spaces in the service of learning. Although this study contributes to the literature, much more remains to be discovered.

Conclusion

Although the students of today are equipped with technology, so are their teachers, and as this study shows, so too are their principals, if they choose to seek it. Not only can the education of students be enhanced with technology, but administrators can enhance their own professional growth. Blogging and tweeting may sound like it is for the birds, but they can be used to create a dynamic and empowering resource for school leaders. “I think the purpose (of Connected Principals) is to broaden our leadership horizons, push each other to get better, provide constructive feedback on ideas, to present new ideas that have worked, and to add a layer of transparency to what we do as administrators . . . it is a powerful tool for administrators that might be thinking of taking calculated risks or trying something new” (E. Sheninger, personal communication, January 18, 2012). Indeed, this group seems to have done just that.
References


and guidelines on online social-and educational-networking. Alexandria, VA.

Retrieved September 18, 2010 from
http://www.nsba.org/site/docs/41400/41340.pdf


Appendix A: Letter to Participants

Study Title: SCHOOL LEADER USE OF SOCIAL MEDIA FOR PROFESSIONAL DISCOURSE

Dear _____________.

My name is Candice Barkley and I am a doctoral student in the School of Education at Virginia Commonwealth University. I am conducting a study as part of the requirements of my degree in Educational Leadership, and I would like to invite you to participate. This study is being done under the advisement of Dr. Jonathan Becker, Assistant Professor in the Department of Educational Leadership.

PURPOSE OF THE STUDY

Your interview is part of a larger investigation, framed as a single case study design, which aims to provide a rich, thick description of how school principals are using blogs and Twitter, a micro-blogging service, to connect with educators around the world for professional purposes. You are being asked to participate in this study because you are known as one of the key contributors to the Connected Principals blog and Twitter network.

DESCRIPTION OF THE STUDY AND YOUR INVOLVEMENT

In this study, initially, a content analysis of the Connected Principals blog will be conducted in order to determine major themes. Then, sociographs of your Twitter network will be generated from publicly available data and analyzed to determine, among other things: the frequency of interactions with other educators, the strength of ties to other educators, and the overall picture of your professional learning network. Finally, you would participate in an interview that contains background questions and also a series of open-ended questions aimed at eliciting your experiences with and attitudes towards the use of Twitter and other forms of social media for professional and personal learning. Collectively, these data will offer a rich, thick description of your use of social media.

RISKS AND BENEFITS

There are no foreseeable risks to participating in this study. Other than the data that is publicly available, all data will remain on a password-protected computer in the possession of the principal investigator. Also, no names or other identifying information (of the individuals or their employers) will be used in any of the reporting. Although benefits to participation may only be indirect, they are noteworthy. The information we gather from this study may cause other school leaders to consider the affordances of social media for their work and for student and adult learning.
VOLUNTARY PARTICIPATION AND WITHDRAWAL

You do not have to participate in this study. If you choose to participate, you may stop at any time without any penalty. You may also choose not to answer particular questions that are asked in the study. Your participation in this study may be stopped at any time by the study staff or the sponsor without your consent. The reasons might include:

- The study staff thinks it necessary for your health or safety;
- You have not followed study instructions;
- The sponsor has stopped the study; or
- Administrative reasons require your withdrawal.

QUESTIONS

In the future, you may have questions about your participation in this study. If you have any questions, complaints, or concerns about the research, contact me at appleck2@vcu.edu or my faculty advisor, Dr. Jonathan Becker, at jbecker@vcu.edu. If you have any questions about your rights as a participant in this study, you may contact:

Office for Research
Virginia Commonwealth University
800 East Leigh Street, Suite 113
P.O. Box 980568
Richmond, VA 23298
Telephone: (804)827-2157

You may also contact this number for general questions, concerns, or complaints about the research. Please call this number if you cannot reach the research team or wish to talk to someone else. Additional information about participation in research studies can be found at http://www.research.vcu.edu/irb/volunteers.htm.
Appendix B: Interview Questions

Study Title: SCHOOL LEADER USE OF TWITTER FOR THE CREATION OF INFORMAL LEARNING NETWORKS

Interview Protocol

I. About You

What is your current position?

How long have you worked in education? (number of years)

How long have you worked in your current position? (number of years)

II. About the Connected Principals Blog/Website

Please describe how the Connected Principals idea came about.

Who were the key players in the beginning of this idea and what were their roles?

What did the initial phases of this project involve?

What are the goals/purposes of this group?

How were the blog topic areas selected?

How does change occur within the structure of the group?

Give an example of a time when someone shared an idea that influenced your practice.

How, if at all, does trust develop among members?

What benefits do you gain as a contributor to the blog and twitter discussions?

What benefits do you perceive for the followers of the blog and twitter discussions?

What are the advantages of using social media as opposed to other forms of communication?

What are the disadvantages of using social media as opposed to other forms of communication?
Vita

Candice Kaye Apple Barkley was born in Bakersfield, California, but raised in the small town of Marlow, Oklahoma. She attended college at Stephens College in Columbia, Missouri, earning a Bachelor of Arts in Mathematical Sciences. She stayed in Columbia, earning her Master of Education in Mathematics Education at the University of Missouri and then beginning the first five years of her career in education teaching math at Oakland Junior High School.

In 2004, she moved to Richmond, Virginia and began teaching at Open High School where she is in her seventh year as a teacher and now department chair.