DISSERTATION

IMPLICATIONS OF ONLINE SOCIAL NETWORK SITES ON THE PERSONAL AND

PROFESSIONAL LEARNING OF EDUCATIONAL LEADERS

Submitted by

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ABSTRACT

IMPLICATIONS OF ONLINE SOCIAL NETWORK SITES ON THE PERSONAL AND

PROFESSIONAL LEARNING OF EDUCATIONAL LEADERS

The purpose of this study is to explore the ways in which five educational leaders make

use of online social network sites (SNSs) for their personal and professional learning.

Specifically, I focus on how participants use social networking tools to create and maintain

online learning communities, how they interact within these communities, and how they believe

their use of SNSs for this purpose has benefitted their professional practice.

From a post-positivist stance, the data are analyzed in light of the research on social and

informal learning theory, leadership development, and the sociological paradigm of communities

of practice. Using data gathered from participants' online behavior as well as through in-depth

interviews, I identify common themes across participants' narratives and examine how their

online behavior mirrors what the research describes as the key components of leadership

development.

The analysis suggests that participants interact via SNSs in ways that approximate face-

to-face communities of practice. Further, the social and informal nature of participation in online

communities supports learning that is relevant, timely, and contextualized – critical aspects that

the research indicates are necessary for professional growth.

Implications of the study findings are explored for educational leaders and those charged

with their professional development. Through this research, it is my hope that educational

leaders' use of online social networks sites and their perceived benefits can be better understood.

Evidence that supports that educational leaders experience real and perceived benefits as a result

of participation in SNSs suggests that they may have at their disposal a tool for continuous

learning and growth that is as close as their nearest computer or internet-connected device.

ACKNOWLEDGEMENTS

TABLE OF CONTENTS

CHAPTER 1: INTRODUCTION

It seems that everyone from Ashton Kutcher and Lady Gaga to Barack Obama and Pope Benedict XVI have a presence on an online social network. Even Fortune 500 companies have begun to use tools like Facebook and Twitter to reach out to existing and potential customers. The social web is also a regular feature in the lives of our youth (Ito et al., 2008) with a recent study by Pew Internet Research reporting that as many as 87% of students between the ages of 12 and 17 go online daily (Strom, Strom, Wing & Beckert, 2009).

It is not only A-list celebrities and teenagers who are finding new and innovative uses for online social networking sites, however. A school district superintendent in Houston uses Twitter to connect with leaders outside his area. A Salt Lake City school district posts information and announcements on its Facebook page. A Texas district uses Twitter groups to keep building principals updated on important events (Butler, 2010). A guidance counselor in Washington meets dropouts and potential drop-outs in the online spaces they frequent in order to open up informal dialogues about their academic options (McCrea, 2010).

In my own professional practice as a secondary school administrator, I have participated in virtual summer book studies organized through a university professor's blog. Through my connections on Twitter I have solicited and received support from other principals in overhauling my school's bell schedule to better support student learning. I can trace the decision to pursue my doctorate to interactions I had with two university professors — one in Iowa and one in Virginia — whom I met through our mutual participation in social network sites. Were it not for my interactions with them, I can say with certainty that you would not be reading this dissertation.

The rapid growth of social network sites into the hundreds of millions of users (Boyd &

Ellison, 2008) and the tens of thousands of educators who are engaged in them (Rutherford,

2008) suggest the need for research and analysis on the ramifications of social network sites for

practicing educational leaders. This examination of online social networks and their influence on

the professional practice of educational leaders is guided by the literature on informal learning,

the emergence and acceptance of social networks as a part of our day-to-day lives, and on the

theory that supports communities of practice as vehicles for knowledge transfer.

Social networks and informal learning predate the information age. From the master-

apprentice relationship to other informal groups that spring up in and out of the workplace, Lave

and Wenger (1991) maintain, "the social world is where work gets done, where meaning is

constructed, where learning takes place every day, where innovation originates, and where

identities are formed." This study aims to explore the extent to which online social networks

provide a virtual platform for this informal learning as groups of educational leaders engage in

the creation of informal learning communities and social groups that "arise, evolve, and

disappear with a life of their own" (Lave & Wenger, 1991).

In our hyperconnected modern society, access to the internet is not dependent on location

or time of day. A Pew Research report indicates that nearly half of all adults regularly go online

using a Wi-Fi or mobile broadband card and 40% report going online from their mobile phones.

In all, 59% of American adults access the internet wirelessly or from mobile devices (Smith,

2010b).

This trend, coupled with the increased use of social networking tools, suggests that we

are moving toward a fortuitous alignment of the tools, the content, and the willingness of users to

exchange information in a culture of collaboration. Not limited to teens and young adults, the

percentage of older Americans between the ages of 50 and 64 who access online social networks grew by 88% — from 25% to 47% — between April 2009 and May 2010. Further, 8% of Americans who are online use Twitter (Smith, 2010a).

Another recent study appears to contradict that the internet and online social networks promote isolation and loneliness. Among other interesting conclusions from the study, it appears that those who use technology to connect with others have larger and more diverse networks than those who do not. People who participate in online social networks are at least as active in community groups as those who do not in terms of attending meetings and participating in-group activities (Rainie, Purcell, & Smith, 2011).

The real power of online social network sites may lie in their ability to connect practitioners around their work. While Thompson (2007) calls Twitter "the app that everyone loves to hate," he points out that the real benefits of participation need to be experienced to be fully understood: "Critics sneer at Twitter [and other similar tools] as hipster narcissism, but the real appeal of Twitter is almost the inverse of narcissism. It's practically collectivist — you're creating a shared understanding larger than yourself" (Thompson, 2007). As we will see in the literature, the ability of practitioners to connect, share, and democratize knowledge through a network of connections is critical to understanding the role that social network sites play in supporting personal and professional growth.

Problem

As states and districts focus on improving student achievement, more is expected not only of teachers, but of principals and educational leaders as well. Diminishing funds make it increasingly difficult for districts to pay for the professional development opportunities that leaders need increase and maintain their effectiveness in their roles. Ironically, however, some

studies indicate that the most effective professional development for educational leaders is not the traditional planned, one-to-many delivery model; rather it takes the form of informal one-to-one or group mentoring (Boerema, 2011; Smith, 2007). In light of this, some educational leaders are taking ownership of their own professional and personal growth and turning to social network sites to connect with and learn from others in similar positions, building virtual learning communities in order to increase their knowledge and effectiveness. How educational leaders create and interact in these communities is not well understood, although many claim to realize professional and personal benefits from their participation.

In the United States, the percentage of adults who use of online social network sites has increased from 29% in 2008 to 65% in 2011 (Madden & Zickhur, 2011). With this growth in popularity among adult users, educators and educational leaders are among the expanding ranks of American adults using social network sites. Brunsell and Horejsi (2010) claim that connecting with other science teachers via Twitter has enriched their professional lives. Based on his personal experience, Ferriter (2010) believes that Twitter provides a continuous flow of new ideas and that support his classroom practice. Greenhow (2010) proposes that using social network sites to share anecdotes from classroom practice can support teachers in reflecting on their practice and being recognized for good work. Finally, Pascopella (2011) provides two examples of principals who believe that SNSs provide an efficient way for principals to gain professional development.

Testimonials from educators and educational leaders suggest that there are many who believe that social network sites have improved their practice, yet few of these generalizations are supported by empirical evidence. In addition, a significant body of research supports social and informal exchanges as a means to support powerful learning. Part of the difficulty in

4

providing evidence to connect online SNSs with social and informal learning may be a lack of effective methods to systematically study these unique, online interactions.

Purpose

The purpose of this study is to develop to an understanding of how SNSs contribute to the personal and professional learning of five educational leaders working in different settings. While some educators and educational leaders are claiming to find value in connecting with others online, I would like to provide evidence that these virtual communities provide real benefits to participants. Finally, I would like to use my findings to begin to change the perception that time spent interacting with colleagues in these environments is wasted time. To that end, I will attempt to answer the following research questions:

Research Question 1: How are educational leaders using SNSs to engage with colleagues in virtual communities of practice?

Research Question 2: How are educational leaders using SNSs to support their personal and professional learning?

Research Question 3: What is the evidence that supports the perception that educational leaders' participation in SNSs is helpful to their practice?

This study will be a qualitative design using a combination of narrative analysis of interviews conducted with educational leaders as well as descriptive statistics gleaned from a content analysis of their interactions on a particular social network site.

Parameters

The participants in this study were purposefully selected K-12 educational leaders. While studies are beginning to emerge on teachers' uses of social network sites for professional

learning, little is written about the ways that leaders are using them. As mentioned earlier, this study considers educators currently serving in titled leadership roles at the school- or district-level including principals, directors, and superintendents. Teachers, consultants, retirees, state officials, or others will not be included. This study, however, includes educational leaders in both public and private K-12 settings.

Though the research questions encompass a broader perspective of social network sites, including Facebook, blogs, and others, I chose to use participation in Twitter as a primary selection criterion for participants. I chose Twitter because, due to its public and open nature and rapid growth, it seems to be the site where most educational leaders connect. Facebook and LinkedIn are two other popular social network sites, however their purpose and use differ substantially from Twitter in that they eschew and open model where any user can follow any other user in favor of a closed ecosystem where connections between users must be bi-directional. That is, using Facebook or LinkedIn, a user cannot "follow" another user's updates if that user has not explicitly decided to allow it. I also established parameters to bias my selection to favor active Twitter users.

Assumptions

Efforts at accessing membership databases for professional organizations such as the National Association of Secondary School Principals (NASSP) or the Colorado Association of School Executives (CASE) were not successful due to these organizations' commitment to protecting the privacy of their members. The sample selected for the study, therefore, is a stratified, purposeful sample of educational leaders with whom I interact via Twitter. Using Twitter as my means for participant selection means that educational leaders who do not use

Twitter, but who may use other social network sites for similar purposes, were excluded from the study.

With respect to the Tweet analysis and interview questions, it is assumed that participants answer honestly and accurately. I also necessarily assumed that the identities of the participants as portrayed on Twitter are accurate. That is, if a participant represents him or herself as an educational leader, then he or she is actively in that role.

Due to the purposeful sampling method employed, the findings in this study will not be generalizable to all educational leaders who use online SNSs. They do, however, present a compelling case that educational leaders are reaping personal and professional benefits as a result of their participation in SNSs.

Significance of the Study

As described earlier, there is no shortage of published, first-person accounts that attest to the power of social network sites to positively impact professional practice (Brunsell & Horejsi, 2010; Ferriter, 2010; Greenhow, 2009; Pascopela, 2011), however very little research has been conducted to specifically identify who is using these SNSs, how they are being used to support professional growth, and what evidence is available to substantiate these testimonials. In my own experience, participation in virtual communities of practice have influenced my decision to pursue my doctorate, prepared me to interview for the principalship, and even contributed to the bell schedule currently in place in my school. If SNSs have supported me in these ways, it is likely that others have been similarly impacted.

In order to gain a more complete understanding of the ways that educational leaders are using social network sites for professional growth, as well as the benefits they believe they have realized, a qualitative study using both narrative interviews and descriptive statistics gathered

7

through content analysis was performed. Through the use of these analyses, as well as reflections of my own experiences with social network sites, I hope to present a more thorough analysis of how educational leaders are using social network sites to improve their practice. This study has the potential to provide support for the testimonials offered by others. If the use of social networks sites for professional growth can be better explained and understood, especially as it impacts student achievement, then educational leaders might have at their disposal a tool for continuous learning and growth that is as close as their nearest computer or internet-connected device.

Researcher's Perspective

This study is about the confluence of my professional and personal interests. As a middle school principal I work daily under the relentless pressure to improve student achievement with dwindling financial resources. I have been a school leader for the last eight years, serving first as a high assistant principal and eventually as a middle school principal. In my personal life, I have always been an early adopter of new technologies, including personal uses of social network sites. Over the time I have spent as an educational leader, the social aspects of the internet have evolved from cutting edge to mainstream.

Technology has always been a personal passion. As an elementary student in the 1980s, I would spend hours in front of the glowing green screen of my family's Apple IIc. In the early-90s, as a freshman at the University of Central Florida, I paid the $35 fee for a student email account that was primarily a novelty at the time. By the time I began my teaching career only four years later, email had become commonplace and the world wide web was in its infancy. It was through the use of instant messaging (IM) programs that I first began to understand the power of the internet to connect with others in real-time.

As technology use became more prevalent for professional and academic use, Blackboard and other online course management systems became supplemental instructional tools for professors in my master's degree program. In my teaching job gradebooks and student records moved from paper to student information systems stored online and accessible anywhere.

Now, in the second decade of the twenty-first century, internet connectivity has become nearly ubiquitous. Though I have always had a fascination with computers and their implications for students in the classroom, it was late-2006 when I began to look at "new media" or "social media" and wonder about its implications for teachers and leaders. It was at this point that my personal interest in emerging technology began to mesh with my desire to continue my professional growth beyond the limited professional development opportunities available in my suburban school district in Northern Colorado.

Early in 2007, as an experienced high school assistant principal, I started a blog, on which I periodically posted reflections and experiences about my practice as a school leader. Though now there are many similar blogs on the internet, at the time mine was one of a handful of blogs maintained by practicing principals. Within a few months I was contacted by *Education Week* and asked to begin writing a monthly column for a blog they were starting. As a result of this increased exposure I began to make new contacts with other principals from around the country and overseas. We would exchange comments on each other's blogs and an occasional email. Eventually I realized that, beyond my in-district colleagues, I had begun establishing connections with other educational leaders to whom I could turn for advice and camaraderie.

The long-form text I was able to share via my blog led me to the short-form posts on Twitter, a "micro-blogging" platform that allows users to share posts of 140 characters or less. When I first signed up in 2007, I immediately realized the potential uses of this tool to create *ad*

hoc networks that could be used for the exchange of information in a more real-time format than blogging would allow. Since first participating in Twitter more than five years ago I have remained an active user and have cultivated a personal network of other educators and non-educators with whom I can exchange ideas and participate in ongoing conversations.

In the summer of 2010, I was appointed to my new role as a middle school principal. Because of the timing of the appointment, I had never met a single member of the school community. Being newly appointed in mid-June could have been a lonely and stressful experience, but thanks to my network of in-person and virtual colleagues I was able to access the support I needed to start the year successfully. The individuals with whom I interact have impacted my school web page, the structure of my team meetings, and even my core beliefs and philosophies, to one extent or another. Many of those individuals I interact with solely in online spaces thanks to the proliferation of social network sites.

There are several examples school improvement in my school to which I directly credit my participation in social networks, but one stands out in particular. In early-2011, I worked with our school leadership team to create a new bell schedule for our school that would be learner-centered and would prioritize at-risk students. At several points in the process, I was able to turn to my network of connections for feedback, support, or to brainstorm a solution to a challenging logistical problem. Over the course of this change process, I was able to get outside feedback from a superintendent and two middle school principals in different states, each of whom worked in schools and districts with similar demographics. While the data on our student achievement will not be available for some time, the schedule we arrived at collaboratively in my school is very similar to the schedules of other middle schools who have received national recognition as "turn-around" schools who have significantly improved student achievement. This experience

10

served as a key reminder for me of the importance of my online connections to supplement and enhance the dialogue I have with my in-district colleagues.

Other, less "high stakes," decisions I have filtered through my network of virtual colleagues include decisions on dress code, fund raisers, professional development activities, and student fees. Again, my network of colleagues can share a depth and breadth of experience that is beyond what I would otherwise have the ability to access.

While certainly possible without such participation, it has been my experience that access to like-minded and sometimes differently-minded leaders and thinkers has the capacity to accelerate and support more rapid and systemic school change. I have been fortunate to have access to outstanding mentors in my building and in my district, however my participation in social network sites has considerably expanded the number of opportunities I have to positively impact student achievement in my school.

In subsequent chapters, I will present research on social and informal learning as well as best practices for professional development for principals. Through my research, I hope to use the lens of my own experiences in concert with the stories of others to increase the understanding of how social network sites can support personal and professional growth for educational leaders.

CHAPTER 2: LITERATURE REVIEW

In order to better understand the role social network sites play in the personal and

professional growth of educational leaders, this chapter will provide an overview of the research

that underpins my study. In this literature review I will share research indicating that principals

learn best when they are in control of their own learning and can learn from each other through

mentoring relationships in a job-embedded context. I will review existing literature on school

principals' use of social network sites, much of which will be limited to first-person testimonials

that will indicate the need for more rigorous research and set the stage for my study. This

literature review will be organized conceptually beginning with the broad topic of professional

learning and growth and culminating with a look at how some school leaders claim to be reaping

significant benefits from their participation in social network sites (SNSs).

I will begin with an overview of research in the areas of learning and professional growth

and then specifically examine these ideas as they relate to effective strategies for principals'

professional growth. I will explore one theoretical model called communities of practice that is

well-established in sociology and uniquely applicable in the context of this study.

I will provide definitions and context for social network sites (SNSs) and show that an

ever-widening cross-section of America is making use of these networks for a variety of

purposes, including organizing groups and accomplishing specific goals. Finally I will discuss

how SNSs might be leveraged to extend the reach of communities of practice into online spaces.

Learning and Professional Growth

Professional growth is, at its core, learning for practitioners. Rutherford (2010) suggests

four characteristics of effective professional development:

(a) It is sustained, ongoing, and intensive,

(b) It is practical and directly related to classroom practice and student learning,

(c) It is collaborative and involves the sharing of knowledge, and

(d) It is participant-driven and constructivist in nature.

As social beings, humans are characterized by their ability to form groups that hold more value than the sum of their individual members. At its most elemental level, a social network consists of three or more individuals who communicate and share information (Weaver, 2008). As such, before exploring the implications of online social networks in learning and professional growth for educators in general and school leaders in particular, it is worthwhile to begin by developing a theoretical framework around the concept of social learning.

The concepts of informal and social learning extend beyond the traditional educational construct that is typical in the American education system. In existing systems the knowledge is held by the teacher and is transferred to students in a one-to-many setting. Social learning is different, however. "In a social learning system, competence is historically and socially defined. How to be a physicist or how to understand the position of the earth in the universe is something that scientific communities have established over time. Knowing, therefore, is a matter of displaying competences defined in social communities" (Wenger, 2000).

Humans construct knowledge based on cultural practices and participation in social communities. When we think about learning, however, the pervasive construct in our modern civilization is that learning is solitary in nature. It consists of teachers lecturing to students seated in orderly rows, words on pages in books, and the acquisition of knowledge by individual learners. In short, "We have decreed that learning is not part of everyday life, that it requires special settings, that it is hard, and that we are for the most part lousy at it" (Lave & Wenger, 1991).

Even though many educators use terms like "learning organizations" and "life-long learning," the context for learning still tends to be solitary in nature, focusing on the learning process of the individual (Lave & Wenger, 1991). Traditional models of learning often involve the explicit transfer of knowledge in a context that is completely separate from the complexities of actual practice. Much of the literature reviewed herein, however, would suggest that actually becoming a practitioner involves learning and understanding that is developed in a communal context (Seely Brown & Duguid, 1991).

It is not enough, however, to bring people together and expect that learning will happen and that knowledge will be constructed. Borgatti and Cross (2003) offer evidence that three particular relational characteristics are critical in predicting information-seeking behavior in a social setting:

(a) knowing what another person knows,

(b) valuing what the other person knows with respect to one's work, and

(c) the ability to gain timely access to the person's knowledge.

The idea that educators are improving their practice based on participation in online communities draws from the theory that "knowledge is constructed actively by learners within a socio-cultural context" (Bose, 2010). If educators are working together — either in-person or using social network sites — this phenomenon may be a twenty-first century manifestation of the three-decades-old social learning theory of Bandura which postulates that the majority of human behavior is learned through observation and modeling (1977).

Leadership Development for Principals

More than two decades ago Harvard University researchers concluded that "the professional invigoration of the nation's principals deserves our attention because these

14

individuals have a profound influence upon their schools" (Barth, 1985). Describing then-current professional development for principals as a "wasteland," the Harvard Principals Center was created with the premise that "principals will be seriously involved in all aspects of their professional development." In a climate where principals were overwhelmingly resistant to professional learning, Barth (1985) proposed that "learning must be something principals do, not something that others do to or for them."

Despite the creation of the Harvard Principals Center in the mid-80s, it appears from that not much has changed with respect to leadership development for principals. Fullan (2009) proposed that, for school principals, "leadership development needs to be job-embedded, organization-embedded, and system-embedded. Few leadership development programs currently meet the first of these successively rigorous criteria, and almost no programs meet the other two."

Two tasks must be addressed by beginning educational leaders: surviving and becoming an instructional leader (Boerema, 2011). The survival aspect primarily involves the technical aspects of school management as well as developing an understanding of the school's social and cultural norms. According to Boerema (2011), the most common approach to leadership development is training the leader in a certain skill set generally accepted to be common in successful leaders. These skills include interpersonal communication, team building, coaching, and mentoring.

In his research, Boerema (2011) identified mentoring as a key factor in leadership development. Different from counseling which is focused on identifying problems and possible solutions, and coaching in which the coach works with the protégé to develop and improve skills, mentoring has a more relational focus. He noted that, "many principals reported that an

important element of support was being able to count on someone that was familiar with the principal's situation that they could call at any time." Through his interviewing of principals, Boerema (2011) discovered that when asked to discuss times when they felt most supported, many interviewees described instances of supportive actions by others such as listening and expressing concern, encouragement, or affirmation. These informal, supportive relationships were frequently identified in his research as helping administrators develop the knowledge, skills, and dispositions required for them to lead successful schools. It is not merely enough, therefore, to provide new leaders with information. Rather, "new leaders also need help in becoming connected to networks, as well as given information to help them be successful" (Boerema, 2011).

In addition to Boerema's (2011) research which focused primarily on one-to-one mentoring, Smith (2007) studied the impact of mentoring groups on the professional learning of both new and experienced school principals. Among the primary benefits identified for participants in the mentoring group, Smith (2007) cites the perception of status by the group members, the informal meetings, and the safety of the group. Participants viewed the group as having status because it helped reduce the stress associated with the principalship. Additionally, the group had been initiated by its own members which meant that its function evolved in response to its own needs (Smith, 2007).

Another aspect of the mentoring groups that members found beneficial was the informal meeting style that required minimal preparation. Rather than make use of professional readings and a rigid agenda, participants found value in the way group discussions focused on their everyday professional lives. "Collegial support as a function of the group was also viewed as important" (Smith, 2007). The most significant benefit Smith (2007) observed as a result of the

principals' mentoring group was that the group was a "safe place." The principals viewed each other as equals and, as a result, the focus group participants reported a high level of trust in matters brought to group meetings. As Smith (2007) noted, "In this way, the group members were all mentors; they were also simultaneously all mentees."

Further support for mentoring as effective leadership development for principals is evidenced in a meta-analysis of 40 studies identifying mentoring outcomes for principals. Hansford and Ehrich (2006) identified positive outcomes for participants in all 40 studies. Further, 16 of the studies in the meta-analysis also reported beneficial outcomes for the mentors. For mentees, the most common positive outcome reported in the analyzed studies was "support/empathy/counseling" followed by "sharing ideas and problem-solving" and then "professional development." For mentors, the top positive outcomes were "collegiality and networking," "professional development," and "opportunity to reflect" (Hansford & Ehrich, 2006).

Communities of Practice

When it comes to any type of learning, personal or professional, Lave and Wenger (1991) state that "information by itself is meaningless — as are the sounds of an unknown foreign language. Information only takes meaning in the context of the social practices of the communities that give it cultural life." The "faculty learning communities" in place at Miami University in Ohio are one example of the power of community in supporting professional growth for educators. While these "FLCs" are voluntary, the roughly 10% of the faculty who have participated have demonstrated more positive professional outcomes, including higher rates of tenure, than faculty who have not participated (Cox, 2004).

Beyond formal professional development or continuing education systems put in place in large organizations, a significant amount of learning takes place as a result of people's participation as members of communities of others with whom they regularly interact. Wenger (1998) calls these informal units "communities of practice" and indicates that they consist of people who are "fully engaged in the process of creating, refining, communicating, and using knowledge." These communities are not a part of the formal organizational structure, rather they consist of individuals who are informally connected via their interactions as a result of the work they do together.

Wenger (1998) differentiates communities of practice from committees or business units within organizations in several key ways. First, communities of practice are defined by the act of doing and consequently have more flexible boundaries for participation. Second, they differ from "teams" in that participants are bound together by shared learning and knowledge rather than by a task. Finally, they are deeper than a "network" in that they exist as more than simply a set of relationships, rather they produce a shared practice rooted in collective learning.

A key characteristic of a community of practice is that is exists whether or not it is recognized by the organization. As such, effective leaders need to work within them rather than attempt to design and control. The very nature of communities of practice as self-organized and self-sustaining units makes it difficult to use traditional positive reinforcement as a means of influencing or managing them. Organizations, therefore, need to strike a tricky balance between supporting communities of practice with time and space to collaborate while resisting "organizational meddling" (Wenger, 1998).

Communities of practice accelerate learning and innovation within organizations (Seely Brown & Duguid, 1991). As mentioned earlier, Cox (2004) emphasizes the importance of

community in our institutions through his faculty learning communities. Consider, then, how social network sites might support professional growth by allowing practicing educators to create their own virtual communities of practice where they can participate in an ongoing exchange of ideas that is grounded in practice. Consider, too, that formal, structured training sessions still occur, but now serve to support and amplify the professional growth that happens in these virtual communities of practice.

Wenger (2001) points out that we tend to use the word "community" to refer to any group that uses a website to connect around a common interest. A critical distinction of a community of practice is that its members build an online community that is "focused on a domain of knowledge and over time accumulate expertise in this domain. They develop their shared practice by interacting around problems, solutions, and insights, and building a common store of knowledge." Social network sites provide an ideal platform for these kinds of connections in that they eschew typical top-down models in favor of a democratic network of connections managed by individual users (Weaver, 2008).

Lave (1996) states that "the way we conceptualize teaching must be rethought within the perspective that takes learners learning as the fundamental phenomenon of which teaching may (or may not) be a part." He contends that teaching, as it is commonly understood, is not necessary for learning to occur. Further, he claims that current research tends to equate teaching and learning, and assume that there are certain practices and strategies that are best for transplanting knowledge into the heads of students. One anecdote he uses to support this idea is that we can all seem to recall great teachers from our schooling, but we do not have commonly understood ways of talking about what constitutes great teaching (p.158).

Current theories of social learning focus on the community as the teacher. Lave (1996) likens the relationships formed in a community to an apprenticeship model. He argues that this model is far more robust than the traditional, formal definitions of "teaching." Through the apprentice-master relationship, Lave argues that it is the informal practices that produce the most powerful learning. Deconstructed further, in traditional classroom one-to-many teaching — the prevailing construct of teaching today — the teacher in focused primarily on "learning transfer" which, Lave (1996) points out, "is an extraordinarily narrow and barren account of how knowledgeable persons make their way among multiply interrelated settings." Formal education is "out-of-context learning" in which the instructor is the course of the learning and understanding is built through generalization and abstraction. The result of this type of education is often referred to as "book learning." Lave (1996) takes the position that "teaching is neither necessary nor sufficient to produce learning." Compared to "book learning," learning that takes place via the apprentice-master relationship is "embedded in everyday activities" and "[takes] place through demonstration, observation, and mimesis" (Lave, 1996).

Through its nature as an always-on repository of an unprecedented amount of information, the digital world in general and SNSs in particular have lowered barriers to interest-based, self-directed learning (Ito et al., 2008). Unlike traditional professional development that can be narrowly focused and oriented to specific goals, social network sites create opportunities for educators to engage with each other and create opportunities for professional growth that are ongoing, collaborative, accessible, and free (Rutherford, 2010).

Indeed, the proliferation in the use of social network sites and social media to connect practitioners in communities of practice has been triggered what some educators have called a "learning renaissance" (Hargadon, 2007) where practitioners are learning from each other

through reciprocal engagement in an online community of practice. In a study of engineers who participated in a virtual community of practice, a majority indicated that they did so because they felt a moral obligation to share their knowledge with the community. Others participated because they felt it was the time in their careers when they should give back by mentoring newer employees. The same study found that those who use the virtual community as a source of new knowledge primarily do so because they view it as an encyclopedia of knowledge that is always available (Ardichvili, Page, & Wentling, 2003).

Communities of practice also provide important supports for principals' professional learning, though principals are not always part of the same organization. In Smith's (2007) research on mentoring groups for principals she notes, "Whilst a community of practice usually exists within a single organization or across divisions of an organization, it can also be made up of people from different organizations, such as the peer mentoring group described herein." As noted in her research, by bringing together principals who necessarily come from multiple schools into a single mentoring group, she created a community of practice "through which school principals may experience worthwhile and significant professional learning" (Smith, 2007).

Online Social Network Sites

In its infancy, the internet was largely regarded as a relatively static repository of information. With the increased use of online social network sites, however, the nature and function of the internet is evolving into a tool used by people to establish and maintain connections (Weaver, 2008). Indeed, social network sites (SNSs) have become a mainstream phenomenon and have attracted increasing academic interest (Beer, 2008). In the last several years, social network sites have "become more important in people's information flows" (Rainie,

2011). They have become important tools for community building as they allow the creation of new pathways for information and new avenues to mobilize group members (Rainie, 2011).

Boyd and Ellison (2008) generally define social network sites as online services that allow users to

(a) create a public or semi-public profile within the system,

(b) connect to other users and share a list of those with whom they are connected, and

(c) view and navigate their connections and the connections of others within the community.

Since the 1990s, tools like blogs and microblogs and sites like Facebook have allowed people to interact in online networks. In the broadest sense the intent of these networks is to share a common interest, let others know what you are doing, and keep track of what they are doing (Knobel & Lankshear, 2009).

In a recent study, Rainie, Purcell, and Smith (2011) found that social network sites are "deeply embedded in group and organizational life in America." Far from being isolated, 80% of internet users identify themselves as participating in some kind of group compared to 56% of non-internet users. The percentages are even higher among those who claim to participate in social media in general and Twitter in particular where 82% and 85%, respectively, identify as being group participants. When asked about the ways that social media has impacted group participation and activities, participants cited drawing attention to issues, connecting with other groups, impacting society at large, and recruiting other group members.

In the aforementioned study, Rainie, Purcell, and Smith (2011) also looked at the ability of social media to help groups achieve their collective goals. Among groups whose goals were achieved, these included getting a candidate elected to political office, raising awareness about

an issue, solving or changing an issue in society at large, and raising money for a cause. In groups who accomplished their goal, between 58% and 84% of group members report that social media had at least a minor role in their group's success. Regression analyses controlled for age, education, income, personal efficacy, religiosity, and trust suggest that the main predictors of people's perceptions that the internet has a major impact on their ability to find groups of like-minded individuals are being a daily internet user, being a social network user, and being a Twitter user (Rainie et al., 2011).

Social networking sites are not the exclusive domain of youth. In their research on adult use of social media, Madden and Zickhur (2011) noted that the percentage of adult internet users who say that they use social media sites has increased from 29% in 2008 to 65% in 2011. Of adult internet users between the ages of 50 and 64, 51% use social networking sites. Among adult internet users between 30 and 49, that number is 70%. Moreover, the only online activities in which adults engage more than social networking are accessing email and using search engines (Madden & Zickhur, 2011).

Madden and Zickur (2011) also identified the most frequently used one-word descriptors for participants' experiences using social networking sites. Among the positives, some examples are "informative, " "interesting," and "convenient." In contrast, some of the most frequently used negative descriptors are "overwhelming," "confusing," and "overrated."

Research by Hampton, Goulet, Rainie, and Purcell (2011) examines SNS use among adults more closely. Their study found that 92% of SNS users are on Facebook, 29% use MySpace, 18% use LinkedIn, and 13% use Twitter. Supporting the findings of Madden and Zickhur (2011), Hampton et al. (2011) noted that while SNS use across all age demographics increased in the last three years, the increase is most pronounced in adults over 35. Between

2008 and 2010, the average age of SNS users increased from 33 to 38. Today, more than half of all SNS users are over 35 (Hampton et al., 2011).

With respect to other demographic indicators of SNS use, the research of Hampton et al. (2011) indicates that users of Twitter and LinkedIn tend to be more educated, with 39% and 75% holding at least a bachelor's degree. In addition to the relatively educated user base on Twitter, it is also the most rapidly growing SNS with more than 60% of its users joining within the last year. Users of Twitter also have significantly larger overall networks than users of other SNSs and are half as likely as non-internet using American's to feel socially isolated.

Moving Communities of Practice into Virtual Spaces

As discussed earlier, after conducting her focus groups, Smith (2007) concluded that effective leadership development for principals involves their participation in peer mentoring groups grounded in the theory of communities of practice. "An initiative that provided for the development of peer mentoring groups based around the components of effective communities of practice would allow for active, organized participation in relevant and challenging learning for principals" (Smith, 2007). Online social network sites (SNSs) may have the potential to allow principals to form communities of practice in virtual spaces thereby reaping the benefits of belonging to and participating in mentoring communities without physical or geographical constraints.

To better understand how SNSs could support professional growth for school leaders, it is worth exploring how they have begun to supplant traditional means of online learning in post-secondary education. Many colleges and universities continue to rely on proprietary learning management systems (LMSs) to create virtual learning environments for students. In contrast to social network sites, these systems generally do not fully exploit the possibilities for digital

learning and are instead online manifestations of traditional classroom structures (Hemmi, Bayne, & Land, 2009). The increasing costs of proprietary learning platforms like Blackboard and WebCT combined with the proliferation of social network sites beyond of the world of education have created a perfect storm in which educators themselves are beginning to find value in using SNSs to design learning environments for their students as well as themselves (Bonk, 2009; Hoffman, 2010).

As evidenced earlier, Grant (2008) suggests that social network sites provide some unique advantages over the highly teacher-centered, text-based platforms found in most LMSs. SNSs allow students to create and share information in a collaborative environment while also supporting deeper student-to-student connections and interactions. Compared to proprietary online learning systems like Blackboard and WebCT, Minocha (2009) also points out that publicly available social tools offer instructors new ways of teaching that are more robust. The very act of having to login and navigate a typical LMS forces participants out of the real-world context in which they spend their lives and results in the loss of "informal, free-flowing, just-in-time banter and chit-chat" which help cultivate engagement and social presence (Dunlap & Lowenthal, 2009). SNSs, on the other hand, support a participatory, collaborative context through which participants can create a unique, media-rich learning space (Hemmi, Bayne, & Land, 2009).

The affordances that social network sites provide learners include the ability to easily share resources and collaborate with other learners in an inquiry-based environment (Minocha, 2009). They are ideally suited to a learner-centered approach and support both formal and informal learning in a constructivist setting (Boyd & Ellison, 2008). Earlier, we identified Borgatti and Cross's (2003) three relational characteristics that predict learning in social settings,

25

(a) Knowing what another person knows,

(b) Valuing what the other person knows with respect to one's work, and

(c) The ability to gain timely access to the person's knowledge.

Using SNSs, it is possible to know what another person knows, respect their knowledge in the context of their work, and gain timely access to their knowledge irrespective of time or physical space.

While most of us tend to think of social networks as recent, online phenomena, social networks and informal learning predate the information age. As identified earlier, Bandura's social learning theory is more than thirty years old yet still holds powerful implications for the way that human behavior is transferred through observation and modeling (1977). From master-apprentice relationships to other informal groups, Lave and Wenger (1991) maintain, "the social world is where work gets done, where meaning is constructed, where learning takes place every day, where innovation originates, and where identities are formed." Extending this analogy into the field of education, we observe that although schools divide students into discrete classrooms, much of a student's learning takes place in informal social cliques that "arise, evolve, and disappear with a life of their own" (Lave & Wenger, 1991).

The framework of Engagement Theory further extends the model of learning in a technology-rich environment. Synthesizing elements of past theories of learning, Engagement Theory is founded on the notion that technology plays a strong role in human interaction in that it fosters communication and creativity (Kearsley & Shneiderman, 1998). If the most powerful learning is social and informal, and if technology fosters interpersonal communication, then social networking sites are positioned as powerful tools for collaboration and community-building by practitioners.

Use of Social Network Sites by Educators and School Leaders

Though much of the literature related to educators' use of SNSs for professional growth is geared toward classroom teachers, the outcomes of the studies may have implications for school leaders. Research on educators' use of social network sites to inform their professional practice is beginning to emerge (Greenhow, 2009). Much of the emergent literature, however, is limited to first-person testimonials from users of social networks. While certainly a strong argument in favor of the use of these tools, systematic research across multiple participants may help better understand how SNSs contribute to personal and professional learning.

Ferriter (2010) writes, "For educators who use this tool to build a network of people whose Twitter messages connect to their work, Twitter becomes a constant source of new ideas to explore." Later in the article, he states, "Even as my Twitter network has grown, [a fellow Twitter user's] posts continue to help me. Just today, she shared a link to a collection of resources on teaching second languages that I can't wait to explore."

Science educators Brunsell and Horejsi (2010) claim that social network sites like Twitter have helped them connect with other science teachers to "share resources, ideas, and support." Although they supply no data to substantiate their claim, later in the same article the authors assert that, "The amount of information available through social networks can be overwhelming, but it can also enrich your professional life."

With respect to educators' use of social network sites for professional development, Greenhow (2010) states, "Broadcasting the anecdotal evidence you are gathering from classroom teaching to a private or semi-private network can not only help teachers reflect on their practice to troubleshoot and improve it, but also can help teachers garner recognition for their good work." In this case, however, the author acknowledges the need for more systematic studies of

the impact of SNSs on teaching, learning, and student achievement. Another article outlines two principals' beliefs that SNSs are "a quick and efficient way for K12 administrators to gain professional development" going as far to dub the practice "Professional Development 2.0" (Pascopella, 2011). Given limited time and budgets for professional development for principals, this is a strong argument supporting the value of SNSs for professional growth.

Some more recent journal articles have approached the topic more empirically and methodically. These studies take a more systematic approach to collecting data about educators' and school leaders' use of social network sites. Each article was generally seeking to categorize and quantify the types of interactions in which teachers and leaders engage using SNSs as the medium.

Alderton, Brunsell, and Bariexca (2011) conducted a study of 10 classroom teachers to begin to develop a picture of the specific ways that they use Twitter and how this use impacts their professional practice. The study found that, when looking at a random sample of 50 Twitter accounts followed by study participants, nearly 85% of them were other educators, including content area experts. Further, 61.85% of the 2,000 tweets analyzed in the study were classified as "Dialogue" which suggests that educators are using Twitter for conversation as well as "simple unidirectional broadcast of information" (Alderton, Brunsell, & Bariexca, 2011).

Pitts and Spillane (2009) studied 75 teachers and school leaders in order to understand the kinds of interactions that were taking place between them using social network sites. Of 92 identified instances of "advice-seeking" uncovered during the interviews, the authors categorized 76 of them as leadership interactions, that is "interactions that were intended to influence knowledge, practice, and/or motivation related to instruction." This indicates that social network sites are supporting principals in having leadership interactions with their teachers. Through this

research, Pitts and Spillane (2009) also identified that interviewees were not limiting their advice seeking to those in formal leadership roles. In fact, advice seekers only connected with those in formal leadership roles in 24 of the 92 identified advice-seeking interactions. This suggests that not only are SNSs an avenue for titled school leaders to connect with each other for advice; they are also "particularly suited for tapping into informal leadership" (Pitts & Spillane, 2009).

A report by Interactive Educational Systems Design (2010) presents key quantitative data from a survey of K-12 educators on social networking and qualitative data from 12 school principals who have used social networking professionally. Among the key findings in the research is that principals themselves feel that social network sites have value as a means for educators to share tools and resources. Roughly half of the principals surveyed said they have used SNSs to exchange ideas and questions with other educators. Possibly most importantly, the majority of principals surveyed felt that the kinds of activities supported by SNSs have the potential to significantly alter the educational experiences of their students.

Summary

At the outset of this literature review, I noted Rutherford's (2010) four characteristics of effective professional development. Based on the research presented, it may be the case that each of these characteristics can be addressed through participation in communities of practice via online social network sites. First, by their very nature, SNSs are sustained and ongoing. They exist whether or not a participant is logged in at that moment. Second, they relate directly to practice. We have seen that principals and teachers access SNSs for answers when they have a specific question related to their practice. Third, they are collaborative and involve knowledge-sharing. Even the anecdotal evidence suggests that one of the primary benefits of SNSs for practitioners appears to be the ability to build a shared body of knowledge. Finally, the

participatory nature of SNSs means that, in theory, they should lend themselves well to being participant driven and constructivist.

Lave and Wenger's (1991) theory of communities of practice is supported by the work of Bandura (1977) whose social learning theory provides a strong foundation for the value that is inherent in the kinds of interactions that occur in these communities. Bose (2010) extends on Bandura's social learning theory and suggests that participants construct knowledge in a socio-cultural context as people work and learn together. In light of Barth's (1985) work with Harvard University, it seems that communities of practice — whether online or in-person — are ideal vehicles to support principals' direct involvement with their own professional development.

Boerema (2011) further suggests that personal networks and informal relationships play a key role not only in learning, but also in leadership development for principals. "While formal mentoring programs are important for supporting leadership development, it would seem that telephone calls and the informal conversations at conferences and workshops also play a significant and often serendipitous role in supporting and challenging new leaders" (Boerema, 2011).

As social network sites have continued to evolve, they have continued to impact an ever-widening cross-section of Americans in their everyday lives. It seems only natural, then, that they would provide an ideal structure for the personal and professional growth of school leaders. SNSs have the potential to support leadership development by allowing leaders to connect with one another and to create and sustain personal networks and informal relationships.

CHAPTER 3: METHOD

Online communities and social network sites are regular features in the lives of our youth (Ito et al., 2008). Indeed, the rapid growth of social network sites has attracted increasing numbers of adult users as well (Boyd & Ellison, 2008; Madden & Zickhur, 2011; Rutherford, 2008). Among these adults are educators and educational leaders who purport to reap the benefits of these tools to connect with colleagues, share resources, and even gain professional development opportunities that are at least as meaningful as those that they can access in person (Brunsell & Horejsi, 2010; Ferriter, 2010; Greenhow, 2010; Pascopella, 2011).

From master-apprentice relationships to other informal groups, Wenger (2010) maintains, "the social world is where work gets done, where meaning is constructed, where learning takes place every day, where innovation originates, and where identities are formed." Wenger (2010) has provided a framework for looking at learning as a social phenomenon. As SNSs empower educational leaders to connect with colleagues around the country and around the world to form online communities of practice, these leaders are able to leverage the power of social and informal learning (Bandura, 1977; Bose, 2010) to improve their professional practice.

As educational leaders become increasingly self-directed in their professional development, many turn to social network sites as a way to create and maintain the kinds of group mentoring relationships that have been shown to most effectively support leadership development for principals (Boerema, 2011; Smith, 2007). While many educational leaders claim that their participation in online social network sites increases their knowledge and effectiveness, little is understood about the ways that they interact in these online spaces.

This study considers the perspectives of five educational leaders working in different settings in order to better understand some of the ways that SNSs contributes to their personal

and professional learning. As I have personally benefitted from participation in online SNSs, I hope to use my findings to begin changing perceptions that time spent using them is wasted time. I will attempt to answer the following research questions in this study:

Research Question 1: How are educational leaders using SNSs to engage with colleagues in virtual communities of practice?

Research Question 2: How are educational leaders using SNSs to support their personal and professional learning?

Research Question 3: What is the evidence that supports the perception that educational leaders' participation in SNSs is helpful to their practice?

It is my hope that through a two-stage process of gathering descriptive statistics along with qualitative, narrative data I can contribute to a more thorough understanding of how educational leaders are using social network sites to connect with others and improve the practice. If this phenomenon can be better understood, educational leaders might be able to reap additional benefits from SNSs with respect to their continued professional growth.

Research Approach & Rationale

My undergraduate education and classroom experience have focused on mathematics, statistics, and physics. These experiences have predisposed me to a post-positivist epistemological stance. As such, I sought to create a research methodology that was systematic in nature and would support and would balance reflexivity with the lens of the participants in the study. As a career educator, however, I have also come to appreciate the constructivist epistemology in which knowledge is constructed and not discovered. In order to reconcile these two stances in my own research, I recognized early in my research the importance of employing analysis techniques that established credibility in both paradigms.

32

This study uses a qualitative design using a combination of narrative analysis and content analysis of interactions on Twitter, a popular micro-blogging and social network site. According to Riessman (2008), thematic analysis focuses exclusively on content and, as such, is the most widely used form of narrative analysis, especially in applied settings. Because of my interest in the stories of how participants use social networking and how it has changed their professional practice, I chose a narrative approach for my study. I considered a grounded theory approach to this research, however I will be using an existing coding scheme from a previous study by Alderton, Brunsell, and Bariexca (2011) rather than allow for coding to emerge from the data. I chose to base my study on this method as the researchers were attempting to address similar questions. The method was well documented and, with the addition of interviews, provided an ideal foundation from which to begin exploring my research questions.

Creswell (2007) proposes the use of collective case studies to gain a more thorough understanding of an issue through multiple perspectives. He states that through purposeful sampling and the use of holistic and thematic narrative analysis, the researcher is able to create a detailed description of a complex case (Creswell, 2007). The researcher then interprets the case and makes meaning of the findings.

Through a series of case studies, including interviews and reviews of online artifacts from several educational leaders, I was able to gain a more meaningful understanding of the ways in which educational leaders use online social network sites to connect and share. The depth of understanding possible through the use of this approach resulted in a more comprehensive understanding of the phenomenon than quantitative data alone could provide. Of narrative research, Creswell (2007) says, "As a method, it begins with the experiences as expressed in lived and told stories of individuals."

As a practicing middle school principal who believes that he has benefitted from the use of SNSs for personal and professional growth, my personal lens has contributed to my analysis of the data collected. Because of my extensive personal experience with this phenomenon, I was especially deliberate when it came to the procedures I selected for lending credibility and generalizability to the study findings.

Participants

Because qualitative research involves in-depth analysis of a small number of participants (Bowen, 2005), I used stratified purposeful sampling to select five educational leaders as subjects for my study. Creswell (2007) indicates that purposeful sampling is a common approach for narrative studies. "The individual may be convenient to study because he or she is available, a politically important figure who attracts attention or is marginalized, or a typical, ordinary person" (Creswell, 2007). I chose to stratify the sample by gender, leadership position, and years of service in order to facilitate meaningful comparisons between participants' stories.

Participants in this study were selected from a group of educational leaders who use Twitter regularly. In order to be eligible for inclusion in this study, participants were required to be practicing K-12 educational leaders in public schools or districts. Given that signing up for a Twitter account is free and simple, there are a high number of Twitter users who have signed up for accounts that they have never used, or rarely use. One recent estimate is that, as of March 2011, only 56 million of the 175 million Twitter accounts follow at least 8 other people. When the number of accounts followed is increased to 64 the number falls to 12 million, or roughly 6.9%, of all Twitter accounts (Carlson, 2011). In order to ensure that participants are active Twitter users as opposed to those who merely signed up for and subsequently abandoned their account, I opted to select participants for the study who had at least 64 Twitter followers, follow

at least 64 other Twitter users, and had posted a tweet within the last 7 days. This means that study participants will be educational leaders who are among the most active 6.9% of Twitter users.

I referred initially to the five participants in this study by the generic monikers of "Participant 1," through "Participant 5." Eventually, however, as I connected with each participant for member-checking purposes and to pose clarifying questions, I gave each participant the opportunity to choose a pseudonym. Throughout this research, I make every effort to preserve the anonymity of the participants. Given that much of the research references publicly available data from the participants' Twitter accounts, it is possible that they could be identified. Each of the participants was aware of this possibility and all agreed to continue their participation in this study. In compliance with the Colorado State University Research Integrity and Compliance Review Office (RICRO), the researcher will maintain the confidentiality and anonymity of the participants and research materials will be stored securely and destroyed after three years.

Participant 1 is a principal and superintendent in a small, rural school district in the midwestern United States. He started his career as a social studies teacher and has 14 years of experience as an educational leader. He has chosen the pseudonym "Steve Jenner" for the purposes of this study.

Participant 2 is principal of a 260-student, K-6 elementary school in southwestern Canada. He is in his third year as principal and spent the prior seven years of his career teaching physical education, math, and science at the high school level. I will refer to him as "Wayne."

Participant 3 is an elementary school principal in a rural school district in the northeastern United States. She is in her fourth year as principal after spending nine years as a classroom

teacher. Her school is a K-6 school of 475 students and has chosen the pseudonym, "Laura Harris."

Participant 4 currently works as a district-level administrator in a suburban school district in the western United States. She is in her 20th year as an educator having spent her first ten as a social studies and language arts teacher. After her time in the classroom, she served as an assistant principal and principal before moving to her current role three years ago. She presently serves as the Director of Curriculum and Instruction for a district of 15,000 students. She has selected the name "Susan" as her pseudonym.

Participant 5 is a superintendent in a suburban school district on the eastern seaboard of the United States. The most experienced of the participants, she began her career as a middle school and high school science teacher in 1975. Over her career she has served as a grants coordinator, a middle school principal, a district-level director of professional development, deputy superintendent, and was promoted to the superintendency six years ago. I will refer to this participant as "Katherine Shields" for the purposes of this study.

Design and Data Collection

Though not a true "mixed methods" approach, I chose to borrow from the research approach typically used in a sequential explanatory design. The sequential explanatory design consists of a quantitative phase followed by a distinct qualitative phase (Creswell, Plano Clark, et al., 2003). While I did collect numerical data, I did not conduct any true, quantitative analyses. Like a sequential explanatory design, however, the numerical data collected at the outset was used to inform the collection of narrative data in the second stage of the study.

The narrative data support a more thorough understanding of the numerical data obtained in the first phase. Analysis of the numerical data provided a general understanding of research

questions one and two. The qualitative data collected then helped to refine and explain the empirical results by exploring participants' experiences in more depth (Rossman & Wilson, 1985; Tashakkori & Teddlie, 1998; Creswell et al., 2003) and provided data used to answer research question three. By using the numerical data to refine the sample and select participants for more in-depth study, the emphasis will be on the qualitative phase of the study (Creswell & Plano Clark, 2010).

The method for gathering descriptive statistics for the study borrowed heavily from a peer-reviewed study by Alderton, Brunsell, and Bariexca (2011) in which the researchers analyzes teachers' use of Twitter for professional learning. A random sample of 100 consecutive posts ("tweets") was selected for each of the participants. Each of the tweets was analyzed for content and coded into one of five categories:

(a) Practice - any tweet that discussed educational philosophy or practice or linked to an article or discussion on philosophy or practice,

(b) Resource - any tweet that contained a link to an online resource or tool,

(c) Question - any tweet that posed a philosophical or practical question,

(d) Social - any tweet that did not any professionally relevant discussion or link, or

(e) Unknown - any tweet whose context or purpose could not be determined.

Once the tweets were coded, I was able to compile and total the results and begin to determine how study participants use Twitter.

As indicated earlier, the most powerful professional development for educational leaders involves one-on-one or group mentoring and the ability to network informally with colleagues (Boerema, 2011; Hansford & Ehrich, 2006; Smith, 2007). With this in mind I also analyzed each of the sampled tweets for evidence of dialogue. My goal was to determine the extent to which

study participants use Twitter to support informal, collegial conversation rather than simply broadcasting information. This technique was also used by Alderton, Brunsell, and Bariexca (2011) and provided additional data to support an understanding of how educational leaders use SNSs. In order to determine whether a particular tweet showed evidence of dialogue, I analyzed each tweet for the presence of the "@username" convention that is used on Twitter to directly communicate with other users. For example, if I wanted to direct a question or comment to a Twitter user with the user name "JohnSmith," I would begin my tweet with "@JohnSmith." Looking for this convention allowed me to determine how many of each participant's tweets were intended as part of a dialogue.

Using the quantitative data gathered from the analysis of participants'' tweets, I proceeded to the interview phase of the study. I interviewed each participant for approximately one hour and transcribed each interview for further analysis. Even though the interviews were primarily conversational, I used an interview guide to provide structure. As suggested by Bowen (2005), using an interview guide to provide structure simplified the task of analyzing the data collected during the interview process. Guided by Creswell's (2007) interview strategy, I focused on a single, overarching interview "grand tour" question with a small number of sub-questions.

Procedures

The research process began when I identified five possible participants representing diversity of genders, cultures, years of experience in education, and jobs held. In order to identify the participants, I used my personal knowledge and my network of educational leaders with whom I connect on Twitter. I contacted the prospective participants via the contact information in their public Twitter profile and sent them an electronic copy of the Informed Consent. I asked

them to electronically "sign" the consent and email it back to indicate their willingness to participate in the study.

If a candidate declined to participate, I will identified an additional candidate who was as close a match as possible in gender, years of service, cultural background, and position held.

Once a candidate had consented to the study, I assigned him or her a participant number, for example, "Participant 1." Any further data collected about the participant will reference this number.

Next, I used a tool called twDocs to import a random sample of 100 consecutive tweets from each participant's public Twitter stream. twDocs is a tool that allows a user to import tweets into a .csv file that I then opened as a spreadsheet when I was ready to code. The spreadsheet for each participant was saved using only the participant number, for example, "Tweets01.xls."

Once all 100 tweets were coded for a particular participant, I arranged an interview time. Interviews were conducted via Skype using video where possible and audio-only otherwise. The Mac applications WireTap Studio and Audio Hijack Pro were used to record the audio portions of the interview. The audio file was saved using the same participant number as referenced above, for example, "Interview01.aiff." The interview audio was transcribed into a text file and, again, saved only using the participant number. This file was named, "Transcript01.txt," or similar. Figure 1 presents a simple, visual representation of the data-collection process used in this study.
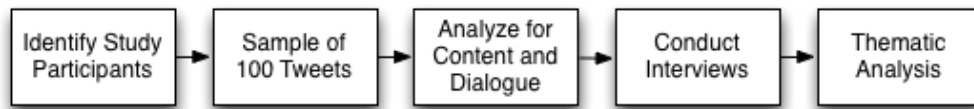
Figure 1. Study procedures. This figure reflects the data-collection and analysis process used in this study.

At the beginning of each interview, I read a verbal consent script and confirmed the participant's willingness to continue as a part of the study. I used an interview guide to provide structure to the interview. Interview questions were broad and focused on each participant's decision to begin using social network sites, their transition to using SNSs for professional purposes (if applicable), and how and why they currently use SNSs. I also asked each candidate to identify a particular aspect of their practice that they felt had changed as a result of their participation in SNS.

I further made us of the interview time to conduct member-checking in order to confirm my coding of the participant's tweets above. For instance, I might read the participant a sample tweet from his or her public timeline and ask how he or she would have coded it.

Analysis

Data collected through the analysis of participants' tweets for evidence of dialogue was analyzed in light of the participants' gender, role, and years of service. A table was created summarizing the percent of each individual participant's tweets that were and were not conversational in nature. This data was compared between cases as well as aggregated for global analysis. This data was then used to inform the sub-questions posed during the interview. The coded and categorized tweet data was also organized into a table for analysis between and within cases, as well as aggregated for global analysis. In addition to the data gathered on

40

conversational tweets, this data also informed interview sub-questions as to each participant's purpose and intent for using SNSs. Individual and group trends from the collected data were shared with the participants during the interview process to facilitate a deeper understanding and to support the member-checking process described below.

As mentioned earlier, data collected during the interview phase of the study were analyzed using thematic analysis. Riessman (2008) suggests that due to its inherent focus on content, thematic analysis is uniquely suited to applied settings. In addition, thematic analysis is also applicable to archival texts such as those collected in the analysis of participants' tweets. Using this strategy, I inductively identified major themes within and across cases.

In qualitative inquiry, Creswell (2000) indicates that rather than focus on the concept of validity — a term used primarily in quantitative studies — researchers should focus on "credibility." While multiple procedures and techniques can be used to establish the credibility of qualitative research, I chose to rely primarily on triangulation, member-checking, and disconfirming evidence (or negative case analysis).

Creswell (2000) explains that "triangulation is a validity procedure where researchers search for convergence among multiple and different sources of information to form themes or categories in a study." Through studying multiple participants and multiple sources of data from each participant (interviews, observations, and online archival data) I was able to identify corroborating evidence from multiple sources (Bowen, 2005; Creswell, 2000). With respect to the narrative portion of this study, Creswell (2000) maintains that, "The narrative account is valid because researchers go through this process and rely on multiple forms of evidence rather than a single incident or data point in the study." It requires reflexivity in sorting and analyzing data, and its systematic nature supports a post-positivist paradigm.

41

Continuing in the post-positivist vein, member-checking turns the lens from the researcher to the participants (Creswell, 2000). In my study, member-checking involved "taking data and interpretations back to the participants in the study so that they can confirm the credibility of the information and narrative account" (Creswell, 2000). During each interview, I shared the data I gleaned from the numerical portion of this study in order to check the accuracy of my observations. In addition, I shared the transcript and themes from each interview with each participant so that he or she could ensure that it was an accurate representation of our conversation.

Disconfirming evidence, or negative case analysis, is a constructivist approach that involves ensuring that emergent themes are applicable to all cases studied (Bowen, 2005; Creswell, 2000). After my initial analysis of all of the cases, I re-examined each case for disconfirming evidence or negative examples. Although "disconfirming evidence should not outweigh the confirming evidence" (Creswell, 2000), this additional step enhanced the rigor of my study (Bowen, 2005).

Finally, in terms of the generalizability or transferability of the findings of this study, Patton (as cited in Creswell, 2000) asserts that "reliability is a consequence of validity in a study." As a consequence, the selection of credible cases and the establishment of validity as outlined previously support limited generalizability of the study findings to the general population of educational leaders who use social networks.

Through the use of this multi-phase methodology, I have been able to bring together a reflexive account of my personal experience with online social network sites along with the stories of others' experiences. In the following chapters, I will present an analysis of the data gathered through participants' tweets and the interview process.

CHAPTER 4: FINDINGS

The findings in this study will be organized to accurately and completely communicate their significance and connections to the research questions. I will begin with a brief demography of the participants and follow with an overview of the data collected through the analysis of their individual and combined Twitter postings. Next, I will explore the four main themes that emerged through the narrative analysis of the participant interviews. Finally, I will connect participant responses and the empirical data to the research questions.

Participants

Recall from Chapter Three that I selected participants for this study based on selection criteria established to ensure that participants were, at the time of the study, practicing educational leaders who were active on Twitter. Steve Jenner is a principal and superintendent in a small, rural school district in the midwestern United States. Both Wayne and Laura are elementary school principals, the former in southwestern Canada and the latter in the northeastern United States. Finally, Susan and Katherine work as district-level administrators, Susan as a curriculum director in the western United States and Katherine as a superintendent on the eastern seaboard.

Tweet Analysis

Prior to beginning the interviews, a random sample of 100 consecutive tweets was analyzed and categorized based on the methodology established in the prior work of Alderton, Brunsell, and Bariexca (2011). Tweets were assigned to one of five categories:

(a) Practice - any tweet that discussed educational philosophy or practice or linked to an article or discussion on philosophy or practice. An example of a tweet coded in

this category is from Katherine who tweeted, "@[name redacted] video lecture is old news whether delivered via TV in the 20th c or Kahn YT in the 21st - tech may change but that's abt it."

(b) Resource - any tweet that contained a link to an online resource or tool. A tweet from Susan that was coded in this category was, "iOS Math Apps by Teachers http://t.co/7evBh14X."

(c) Question - any tweet that posed a philosophical or practical question. An example of this category is from Wayne who wrote, "@[name redacted] what does this say about the school system? How many others do not see relevance and become disengaged like you were?"

(d) Social - any tweet that did not any professionally relevant discussion or link. An example of a social tweet from Laura was, "@[name redacted] So great chatting with you today!!"

(e) Unknown - any tweet whose context or purpose could not be determined.

The coded tweets are included in Appendix B and the summarized data are presented in Table 1.

Table 1

Randomly Sampled Participant Tweets by Category

Participant	Steve	Wayne	Laura	Susan	Katherine	Total	Percent	Range
Practice	11	29	22	15	11	88	18%	18.0
Resource	15	28	13	57	60	173	35%	47.0
Question	4	7	3	2	0	16	3%	7.0
Social	70	36	61	26	29	222	44%	44.0
Unknown	0	0	1	0	0	1	0%	1.0

As depicted in Table 1, the most prevalent single category was social tweets with 222 out of the 500 tweets, or 44%. The next largest category, with 35%, was tweets referencing an online

resource. Finally, tweets relating to practice and those posing a question made up 18% and 3%, respectively. Only one tweet in the 500 was nonsensical and, as such, placed into the "Unknown" category.

Initially, I was surprised that the largest single category was "social" tweets. I expected the tweets to be more academic if I was to substantiate social networks in general and Twitter specifically as a credible source of community building and personal and professional growth. However when taken in the aggregate, the tweets in the professionally-focused categories of "Practice," "Resource," and "Question," make up a combined total of 56% of the tweets sampled. This suggests that more than half of the tweets sampled are practice-related.

The percentage of tweets categorized as "Resource" and "Social" present the greatest spread between the participant with the most and the participant with the least. Katherine shared the most resources (60%) and Laura shared the fewest (13%) creating a spread of 47%. Also nearly as divergent, participants' tweets in the "Social" category varied by 44% from the highest to the lowest. Steve Jenner had the highest percentage of social tweets with 70% while Susan had the lowest at 26%. The most consistent category across all five participants was "Question" with Wayne asking the most with 7% and Katherine Shields asking the least with 0%, a spread of only 7%.

Twitter allows users to post up to 140 characters at a time to a public timeline. On occasion, a user may want to direct a tweet at, or respond directly to a tweet posted by another user. In order to give the tweet context as part of a larger conversation, Twitter users developed a system of prepending the other user's name, preceded by the "@" symbol, to their tweet. Twitter then alerts the other user that he or she has received a "public reply." Where a public tweet could potentially go unnoticed, lost in the continuous public stream, a tweet directed to another user via

the "@" convention is more likely to rise to the user's attention. This system makes it easy for users to exchange thoughts and ideas and, essentially, to converse using Twitter as the medium.

In addition to the categorization, tweets were also designated with a simple "yes/no" flag depending on whether they showed evidence of dialogue. I accomplished this by looking for the aforementioned "@username" convention. This "yes/no" designation for dialogue is separate from the categorization discussed earlier. As such, a single tweet always had both a category from the list above and a "yes/no" category depending on evidence of dialogue. Consider this tweet from Wayne: "@[redacted] many want HW so they have confidence in what child is learning at school. Communication is key. Have had a few debates ;-)" In this case, the Participant is discussing his philosophy on homework that would place it in the "Practice" category. It is also a response to another Twitter use who may have posed a question or made his or her own philosophical statement. Since the tweet is directed at another user, as evidenced by the use of @[redacted], it is designated as having evidence of dialogue.

As indicated in Table 2, 45% of all tweets analyzed contained evidence of dialogue. This ranged from a high of 75% from Laura (who happened to have lowest percentage of tweets in resource-sharing and the second-highest percentage in social tweets) to a low of 14% from Susan (who also had the lowest percentage of social tweets). Essentially, and perhaps intuitively, participants who are more social appear to engage in more dialogue but tweet less about practice, while participants who tweet more about practice appear to be less social and engage in less dialogue.

Table 2

Randomly Sampled Participant Tweets Sorted for Evidence of Dialogue

Participant	Steve	Wayne	Laura	Susan	Katherine	Total	Percent
Dialogue	42	62	75	14	32	225	45%
No Dialogue	58	38	25	86	68	275	55%

The amount of time that leaders spend engaged in purely social exchanges makes sense in light of the research of Smith (2007) highlighting the positive impacts of mentoring groups on educational leaders. The research identifies the importance of groups of leaders that provide informal but collegial support for developing leaders. The social nature of the participants' use of Twitter suggests that they may find it to be a "safe place" that may provide what Hansford and Erhich (2006) identify as "collegiality and networking" and an "opportunity to reflect."

Thematic Analysis

As described in Chapter Three, I coded the narrative data and presented the codes using thematic analysis. Using the method outlined by Riessman (2008). As discussed, this particular approach lends itself well to applied settings as well as studies in which archival data are collected and analyzed. Using thematic analysis, I looked for themes within and between participants and identified four overarching themes which are presented in this section.

"PD before Twitter was like an event."

One theme that I identified across the interviews was the idea that participants believe that they have constant access to resources for their own learning. Further, those resources can be tailored to suit each participant's personal needs. Sometimes this meant seeking out advice on an issue that they were currently facing. Other times this meant the ability to be more self-directed

and interest-based in their own learning. Simply put, online social network sites seem to provide participants with the learning they need or want, at the time and in the situation they need or want it.

When we talked about how this online learning compared to district-provided professional learning opportunities, Steve indicated that in an entire school year he typically spends about six hours at an "administrator academy" hosted by his district. The content of this academy is pre-determined each year and all participants receive the same content. He contrasted this with the learning he perceives social networking provides. "When I use social media, I can direct my learning to what I'm interested in." Later in the interview, he drew a comparison to students' learning. "On-demand learning is what we try to provide for our kids but we don't model that very well for staff or students."

Wayne echoed this sentiment: "[Professional development] before Twitter was like an event. You'd go because you had to. You'd know nobody or a few people. You'd sit through it, take very little back to your school, and that was it." He contrasted the idea of "PD days" that are commonly offered in school districts with the construct of "professional learning" which is what he believes is happening for him when he connects with colleagues on Twitter. "With Twitter, it's ongoing. Take assessment, for example. The conversation is happening. I know 25 people who are passionate about assessment and I can bounce ideas off them anytime I want."

In our interview, Laura Harris was clear that a significant portion of the benefit she perceives from her participation in social networks is that it "allows you to connect real-time with people who are living it. The discussions are important. It's not sit and get. There is application." Ms. Harris, however, was careful to make an explicit caution against referring to Twitter or other social networking sites as "professional development": "I don't think that

48

Twitter is PD - it's a format through which you can get linked to people, ideas, and information -- what you choose to do with that information can become PD, but being on Twitter in and of itself isn't PD."

Susan also shared what she felt was an important contrast between the kind of professional development opportunities that social networking can provide and what is traditionally provided by schools and districts. As the person charged with providing these traditional professional development opportunities in her own district, she is in a unique position to make such a comparison. "I think long and hard about what PD should look like at the school and district level to enhance performance." Compared to district-provided professional development, she stated that the learning she gleans from SNSs is "more about activating my awareness and knowledge. I have a stream of information that's constantly feeding me new ideas. I care about policy, legislation, and laws. It keeps me aware and it keeps my fingers in what's going on right now."

As a superintendent, Ms. Shields had a slightly different take on the idea of in-house versus SNS-based professional development. She stated at one point that one of the benefits she perceives is "being part of a network that allows people to grab ideas, grab resources, and share them out." Extending the idea of grabbing and sharing resources, she shared a story about her early interactions on Twitter. As she began to engage more with others she noticed that one particular user — a grad student and educational blogger from the midwest — was corresponding regularly with people in her district. She remembered thinking at the time, "This guy has the ability to influence the educational work going on in my district and there's nothing I can do about it." As a result, she hired this person to come to her district and lead an in-house professional development for teachers and leaders. This story points to the potential for SNSs not

only as places to create connections for their own sake, but as platforms that can lead to face-to-face connections and the ability to impact even those educators who choose not to be involved in social networking.

"It has nothing to do with technology and everything to do with people."

A second common theme across the stories the participants shared was that of relationships. Given the findings of Boerema (2011) and Smith (2007) who both suggest that leaders need an informal, supportive network of relationships to be successful, this was an important finding. Participants unanimously agreed that the networks of people with whom they connect complement the availability of plentiful, timely resources as discussed in the previous section.

As she shared a story about connecting with other superintendents online, Katherine told me, "People believe that you cannot have a relationship with people you don't know or that you only communicate with in 140 characters at a time. But the relationships exist all over the place." When I pressed for why she thinks that is the case, she said, "There's still a skepticism from people who resist technology to believe that social networking can be more than Ashton Kutcher tweeting about Demi Moore."

Wayne also touched on the importance of relationships in a sidebar story he shared about earning his Master's in a cohort-based program. "When I did my Master's we had a cohort. Then it ended and I have nobody." I asked how this was the same or different from the relationships he has been able to forge using SNSs and he responded, "I always have a network at my fingertips. Having that network is good for [me] emotionally and for [my] learning."

Steve Jenner talked about extending his connections one step further and connecting his online colleagues with his staff. "The principal can be the expert in some things, but connecting

50

[teachers] to another principal or teacher who is saying the same thing has a much more significant impact." He said that by using this strategy he has been able to move teaching in his school from a "sage-on-the-stage event to a connected, project-based event." Through the connections he maintains via SNSs, groups of staff members have been able to network with other groups in the area to discuss Common Core Standards and project-based learning.

A tipping point for Susan's use of SNSs came when she attended a conference and met several Twitter users whom she followed or who were following her. "Meeting them face-to-face was really, really cool. I realized if it hadn't been for Twitter I would never have had the connection with these people. They would have just been sitting next to me at a conference." Similarly, her relationships with in-district colleagues also improved. She credited social networking with giving her the opportunity to meet 12-15 people in her own district whom she otherwise might never have gotten to know. "We work in the same place and I finally had the opportunity to meet people who worked in my district for the first time. Those are 12 people in the district who I would have never met. You know, I email tons of people every month, but I don't have a relationship with those people."

Laura finds that the relationships she has built through SNSs provide the benefit of connecting her with people who are practitioners as opposed to professional staff developers. Asked to elaborate on how the technology allows this to happen, she said, "It has nothing to do with technology and everything to do with people . This is a meaningful part of PD that is overlooked when districts bring in external people. We have people delivering PD that don't live it."

"If I can't control this, I need to be a part of it."

An interesting finding in my interviews was that four of the five participants reported that they had at some point been computer teachers or had been early-adopters of technology in their classrooms. Four of five also reported being engaged in early online communities like online community forums or virtual bulletin boards (called "BBS's" by users) in order to further a personal hobby or interest. Steve, for instance, reported being a member of a BBS that focused on keeping up with a favorite sports team while Laura stated that one of her earliest collaborative online experiences was participating in an online forum focused on her scrapbooking hobby. Universally, participants acknowledged "dabbling" in various types of social networks before seeing their potential as a tool for learning and all were able to point to a particular experience that contributed to this new understanding.

Laura recalled her tipping point very clearly. She was at a summer conference and the keynote speaker projected her personal blog on the big screen. This was not pre-arranged and the conference speaker had no knowledge that Laura would be in attendance at the event as they had never met before. She had started her blog anonymously shortly after becoming a principal with the goal of writing about her experience as a new administrator. Seeing her own blog on the screen in front of the attendees made her realize the extent of her audience. This event started her on the path of being more comfortable using social network sites to share her experiences and connect with other leaders.

Some of the participants were not so self-directed in their initial adoption of social networks. Katherine, for example, recalled two teachers in her district suggesting that she get involved with Twitter. They believed it would present a unique opportunity for her to extend her commitment to breaking down hierarchical relationships within the district and among

stakeholders. "They gave me names of people to follow, but I kept saying, 'Why Twitter?'" She did not fully embrace social networking until the summer of 2009 when several district teachers decided to blog, Tweet, and stream live video of a district conference. "I was freaked because all of a sudden I was in the middle of this massive infusion of social networking. I found myself in this crazy world and I'd never seen anything like it. I started slowly getting involved and connecting with others." Reflecting on the experience, she said, "For the first time I am aware that the boundaries of the school district are no longer protected. You usually invite consultants in, but I realized that people are open-sourcing to the world. If I can't control this, I need to be a part of it."

Steve also credits a colleague with immersing him in social networking. In 2007 his school librarian challenged him to begin reading some popular educational blogs. He recalled reading for a while before thinking, "I can do this," and starting his own blog to share his ideas and connect with stakeholders. A colleague at a conference showed him Twitter and, like Katherine, he did not immediately see the potential. Once his librarian showed him how to find other school leaders to follow, however, he was hooked. He said that he first realized the power of social networking for learning when he began seeing one of his teachers using blogs and Twitter in the classroom. Since then, has begun using social network sites to connect with parents and stakeholders, to publish live updates from sporting events, and to communicate and share resources with staff.

In contrast to those who found value in social networking after they were "pushed" by colleagues, Wayne found himself receiving quite a bit of attention after publishing a blog post about his decision to reduce the number of awards and award assemblies at this school. He saw his daily visitors increase from around 70 into the thousands when education author and lecturer

Alfie Kohn posted a reaction and link to his post. "It was a tough decision," he recalled, "I was criticized. It was controversial. From there, I was hooked." Shortly after the surprise publicity prompted by his post, Wayne was invited to post to "Connected Principals," a popular group blog where educational leaders share ideas and practice.

Susan recalled making a very conscious decision to get involved in social networking. In 2008, she attended an educator institute and found herself in a large auditorium listening to a keynote speaker. The speaker asked for a show of hands of attendees who use MySpace, Facebook, or using other social networking tools. "He said, 'If you are a leader in education and you are not participating in this world, then you are becoming dangerously irrelevant.'" After the conference, she created a pseudonym and signed up for Twitter and Facebook. Prior to this, "my experience with social networking was as a principal seeing kids get bullied. That was the extent of my involvement." Asked to clarify exactly what had resonated with her at the conference, Susan paused and added, "I don't want to be dangerously irrelevant."

"I never saw this coming."

Participants universally shared that they felt that it was their responsibility to take ownership for their own personal and professional growth, and that social networking provides them a means to do that. As mentioned earlier, participants all expressed that the constant stream of real-time conversation provides resources for their learning. In addition, however, participants all seemed to feel that, as leaders, they have a duty to tap into this stream and model continuous learning and improvement.

Steve spoke directly about this during our conversation. "If you believe that your job is to be the lead learner and to demonstrate that you have vitality when it comes to learning and staying informed, then social media is a place that makes that much more simple."

The motivation for Wayne is the ability to use social networking to learn and steal ideas from others. "It's inspiring. I am a learner. I love learning and hearing others' perspectives. I love being challenged." He also extends this learning to his school community. "I like putting my ideas out there and letting others respond. It makes me better. It makes the idea better. It makes the school better."

Laura also acknowledged a focus on her professional obligation to continue learning. "Principals are in need of constant learning. If we are the ones that are supposed to be driving the change, then we need to be in the loop and be continually developed in addition to always putting out fires." This conviction extends to her work with students as well. "It's not fair for leaders to ignore this. Kids are connecting and using the internet to learn about things they don't get to learn in school and it's our fault they are not learning it. We are doing kids a disservice if we aren't looking at these things."

Again, as the district director who oversees professional development, Susan finds herself in the unique position of seeing two sides of this phenomenon. She is in charge of building professional development for teachers, yet she admits to also wondering, "Where is the personal responsibility? No matter what you do, what are you doing to improve yourself? Maybe social networking isn't for you, but how are you tapping into what you need to be the very best you can be?" She continued by revisiting her earlier assertion: "If you're not doing social networking and you're a leader, you are becoming dangerously irrelevant in your leadership."

For Katherine, engaging with others using social networking is just an extension of what she believes about leadership. She summed up what she has learned in three decades of experience in education: "Sometimes as a leader you have to be able to walk up to a cliff and jump off hoping that it will all work out. People who have to know that something is totally safe

before they try it are not learning." Participating in social networks with other educators and leaders is, to her, the next logical evolution. "Take the risk. The return on investment is going to be significant in the long run. If you don't your school division and your school will be left behind. In five years you will look back and say, 'I never saw this coming.'"

Revisiting the Research Questions

After aggregating the empirical data and coding the interview transcripts for emergent themes within and between participants, I began looking at how the data connect and how they inform the research questions posed in the study. This section will focus on coalescing the data to logically address each question. The research questions this study attempted to address are outlined again below.

Research Question 1: How are educational leaders using SNSs to engage with colleagues in virtual communities of practice?

Research Question 2: How are educational leaders using SNSs to support their personal and professional learning?

Research Question 3: What is the evidence that supports the perception that educational leaders' participation in SNSs is helpful to their practice?

Research Question 1

Research Question 1 asks how educational leaders use SNSs to engage with colleagues in virtual communities of practice. In order to address this question, I will focus on the defining characteristics of communities of practice and connect those characteristics to the data.

The first key characteristic of a community of practice is that they have flexible boundaries that are defined by the act of doing. Wenger (1998) refers to this as the "domain."

Essentially, community members are connected by a commitment to the work they do. Laura cited the ability to connect with other administrators in order to support each other as being critical to the perceived benefit she receives from social networking. "It can be lonely when you're first starting out," she explained. Katherine recalled, "I love connecting with other superintendents." Susan stated, "You feel like you're part of a larger community. I follow 800 people and they're mostly educators." Membership in the community, therefore, is defined by a shared competence that distinguishes its members from others.

The second component of a community of practice, according to Wenger (1998), is that participants are bound together by shared learning and knowledge. The "practice" aspect of a community of practice differentiates it from a "team" as it is not focused on a single task. The focus of a community of practice is on knowledge and this is exemplified in comments from the participants about tapping into the expertise of colleagues. Laura shared earlier her belief that simply joining a social network does not mean that you are learning or growing. She was clear in her conviction that it is the ability to connect with others' ideas, knowledge, and information that benefit her most.

Finally, communities of practice are more than "networks." They are truly a community in the sense that they transcend existence as a set of relationships and instead produce shared practice that is grounded in the group's collective learning. Wenger (1998) defines this shared practice as a repertoire of tools and experiences that are developed over time as a result of sustained interactions. Wayne, for example, shared that "leaders need good research and understanding of sound pedagogy and good assessment techniques." He described his use of Twitter as participating in a learning community that is "ongoing. It evolves. The conversation

on assessment is happening and I can bounce ideas off of other people who are passionate about assessment." In this way, he is using Twitter to build relationships and learn from others.

Steve Jenner shared a similar experience. Based on conversations he has had on Twitter, he has begun to take a different approach to staff meetings. "I'm able to use that time differently. I've learned to use Google Forms and Google Docs to collect and share information so staff meetings have a different focus now."

As stated earlier, human beings construct knowledge and meaning based on cultural practices and participation in social communities (Lave & Wenger, 1991). The empirical data collected about participants' tweets seems to suggest that educational leaders are, in fact, forming online communities in these ways. Roughly 44% of the Tweets analyzed were purely social in nature — something that would be expected in a community — and the balance were questions, resources, or statements directly relating to practice. This also supports the claim by Seely Brown and Duguid (1991) that becoming a practitioner involves learning and understanding that must be developed in a communal context.

Considering the data collected, it appears that educational leaders are, in fact, able to create virtual communities that share the key components of communities of practice and establish a foundation for improving practice. The second research question focuses on how educational leaders leverage these connections for their own learning.

Research Question 2

In the case of the five study participants, the data collected appear to establish the existence of communities of practice and the conditions for social learning. The second research question focuses more closely on how educational leaders are using social network sites for personal and professional learning.

Borgatti and Cross (2003) identify three relational characteristics that predict learning in social settings:

(a) knowing what another person knows,

(b) valuing what the other person knows with respect to one's work, and

(c) the ability to gain timely access to the person's knowledge.

Based on my conversations with participants, it appears that social network sites allow for all three of these characteristics. As participants describe their experiences with SNSs, it was clear that they began to perceive increased value in them as their networks expanded. Susan, for instance, said that she struggled early on to see the value of Twitter. Eventually, she connected with a teacher in her district who she described as being "connected with other teachers around the world. I saw her sharing articles and other things. Eventually I started following the people she followed and now Twitter is my main social networking tool." Steve shared that at first he was unconvinced about the usefulness of Twitter, but tried it a second time and, according to him, "I was hooked when I found a lot of other administrators to follow. Now I'm on it about an hour a day."

As networks expand, participants describe forming relationships with other administrators. Through this process of creating and pruning their networks, participants seem to develop an understanding of what others know and make a determination as to whether that knowledge is valuable to them. In contrast to the kinds of relationships leaders develop with colleagues in their own districts, the nature of online social network sites is such that users can choose to follow only those who meet their own established criteria. That is, they can follow other users whom they believe to be knowledgeable about topics of interest to them, and whose knowledge they value. This sentiment is confirmed by Susan who told me, "The most important

benefit is being able to connect with other people and having access to their knowledge and skills."

The very nature of social network sites seems to address criteria (c). With respect to the ability of SNSs to provide timely access to others' knowledge, Susan said, "I have this continuous stream of information that's constantly feeding me new ideas." Wayne stated that he enjoys the ability to join the conversation at any time: "I know 25 people who are passionate about assessment and I can bounce ideas off them anytime I want."

In addition to learning in social settings, I also analyzed the data using in light of the work of Rutherford (2010) and the four characteristics of effective professional development:

(a) It is sustained, ongoing, and intensive,

(b) It is practical and directly related to classroom practice and student learning,

(c) It is collaborative and involves the sharing of knowledge, and

(d) It is participant-driven and constructivist in nature.

Based on the interviews, I believe that participation in social networks can address each of these characteristics.

I previously stated that the "always-on" nature of social networks provides the potential for (a), and this component also seems to mirror the Borgatti and Cross's (2003) concept of having timely access to the people who have the knowledge. In addition, one of the key themes identified across the narratives was that social networking with other educational leaders provides "on-demand" learning that is ongoing.

I further believe that there is substantial overlap between areas (b), (c), and (d) and the theory of communities of practice. Communities of practice, by definition, focus on practice and the sharing of knowledge. They are also participant-driven and focused on constructing a shared

repertoire of knowledge. The ability to connect with other practitioners and build meaningful relationships focused on the work is also one of the common themes across the narratives.

Based on the data collected through the interviews, it appears that SNSs support the personal and professional growth of study participants by providing online spaces that meet the conditions for social learning as well as the characteristics of effective professional development. In the next section, the focus turns to the evidence that this growth has benefited the practice of study participants.

Research Question 3

The final research question sought to identify evidence in the participants' narratives that their participation in social network sites has been helpful to their practice.

Steve shared several stories that he believed illustrated how social networking with other educational leaders has been helpful to his practice. One of the primary roles of the principal is to serve as an instructional leader. In order to do this, the principal needs to spend time in classrooms and be able to share timely feedback to classroom teachers. Steve has developed a way to do this through the use of Google Forms that are immediately shared with classroom teachers when he leaves the classroom. "I learned this from another principal on Twitter and it has allowed me to give more feedback in the last two years than ever before."

In addition to improving his ability to provide feedback to his teachers, Steve also cited increased collaboration among teachers who have followed his lead in embracing social networking. His English teachers have connected with teachers at another school in the region to discuss common core standards and project-based learning. Some of his teachers have also started sharing student writing on class blogs which, he believes, forces them to consider writing for a broader audience and changes the way they think about the task.

61

Wayne also believes that his practice has benefited as a result of participation in SNSs. As a former high school teacher, he shared that the most significant benefit for him has been the confidence he feels to engage in conversations at the elementary level. "I can engage in more conversations because I have the knowledge. I have more confidence to engage in conversations about what will benefit kids in my school and I'm also more confident about being challenged." Though a less tangible benefit, it illustrates the effect of developing shared knowledge in an virtual community of practice.

Like Steve, Laura cites improved communication and collaboration as the greatest benefit to her leadership. She shared a story about a post she read on a principal's blog about how he used a staff website to share news and other information items instead of spending time on those items at staff meetings. Because of this, she began using a similar process at her school, extending the concept to using Google Docs for sharing resources and data.

For Susan, participating in Twitter and other social networks has changed the way she gets her information and news. "CNN is my homepage, but I don't get my news from the news. 80% of the information I get comes from social networking. People are sharing blog posts, reports, research, and articles." Instead of waiting for monthly research journals and hoping to find an article on a topic of interest, she has created an online community of colleague with whom she can exchange and discuss news, policy, and research.

Katherine again refers to the benefits that her district accrues as a result of her connections with other thought leaders. A buzzword in the business world, the term *thought leader* describes a person who is recognized among his or her peers for innovative ideas and insights. In this context, connections through social network sites have enabled Katherine to physically bring her forward-thinking online acquaintances into her district to lead in-person

professional development for her teachers. "Bringing in people whom I know from online is an opportunity for me to do an external reflection on whether what I think I'm seeing is really happening in my district." She is deeply interested in the ways that educators and leaders are using social networks to plant seeds for innovation: "We need to start looking at better mappings of how people connect and build relationships that influence people to try things that they otherwise would not."

Beyond bringing in online acquaintances to lead in-district professional development, Katherine also shared a story that involved a high school teacher in her district who was able to make a Skype call with an Egyptian man during the Arab Spring in 2010 and 2011. This brought a highly charged topic directly into the classroom for students in a class called "Contemporary Issues of the World." In another story, she shared an account of a high school band teacher who was able to use a website called Ustream to post live video online of a rehearsal so parents who were overseas in the military could watch their students rehearse.

Looking at the participants' stories individually and collectively, it is clear that they believe in the power of social networking to bring them together and build communities with other educational leaders. They each shared unique experiences highlighting how these connections have been helpful in their day-to-day practice as well as how they believe they have benefited their schools and communities.

Summary

"The challenge in front of us is to take what we learn and see online and do what we can to change the learning environment for every kid every day." This sentiment, shared by Steve during his interview, aptly summarizes the collective stories of the five study participants. From connecting with their stakeholders to learning from other leaders, it is clear that the five

participants find substantial value in using social network sites in their personal and professional lives. In the final chapter, I will explore the ramifications of this study in light of my goal of providing a more complete understanding of the ways that educational leaders are using SNSs to connect, learn, and change their schools, their practice, and themselves. Indeed, based on the five cases studied, it appears that educational leaders may have at their disposal a tool with the possibility to support continuous learning and professional growth.

CHAPTER 5: DISCUSSION

The literature on social learning, leadership development for principals, and communities of practice presented in Chapter Two framed this study. The very nature of knowledge construction in social settings established the foundation for this examination of how five educational leaders interact using social network sites, and how these interactions support their personal and professional growth. This chapter presents an overview and summary of the study in light of how this research illuminates the findings presented in Chapter Four. I will present an overview of the problem, purpose, and methodology, as well as an examination of practical and theoretical implications and recommendations for further research.

Overview of the Problem

A Harvard study published more than two decades ago described the state of professional development for principals as a "wasteland" (Barth, 1985). Citing the impact of principal leadership on the quality of our schools, the same study urged district leaders to prioritize the "professional invigoration" of principals to ensure the long-term viability of public education.

Nearly 25 years later, Fullan (2009) emphasized that high-quality leadership development should be job-embedded. Still more recently, Boerema (2011) interviewed principals and found that the most effective professional development for educational leaders occurs via ongoing, informal interactions with a network of colleagues. These networks can manifest as mentoring groups that function as collegial support systems and as a "safe place" where members meet informally and discuss their day-to-day professional lives (Smith, 2007). In addition, Hansford and Ehrich (2006) conducted a meta-analysis in which they reported positive and beneficial outcomes for leadership development that included collegiality and networking as well as the opportunity to connect and reflect with other leaders.

Today, decreasing revenue streams threaten to further reduce the already meager professional development opportunities afforded to practicing educational leaders. At the same time, the number of adults accessing online social network sites has more than doubled (Madden & Zickhur, 2011). Naturally, educators and educational leaders are among the growing number of adult users of social network sites and a growing number of published papers and articles attest to the myriad benefits of these SNSs to enrich their professional lives and gain access to formal and informal professional development opportunities (Brunsell & Horesji, 2010; Ferriter, 2010; Greenhow, 2010; Pascopella, 2011).

These two factors, along with the body of research around social and informal learning may have powerful implications for the way that educational leaders learn and grow professionally. While dwindling funds threaten already lackluster professional development opportunities for educational leaders, a number of them have taken to online social network sites as a means to forge relationships, connect with and learn from colleagues, and build virtual communities of practice.

Purpose Statement and Research Questions

The primary goal of this research has been to contribute to a deeper understanding of how social network sites contribute to the personal and professional development of educational leaders. In order to explore this phenomenon, I conducted in-depth interviews with each of five study participants and gathered actual data from each of their Twitter timelines. The five educational leaders studied work in different settings and hold varied leadership positions and, as such, brought a unique perspective to this research. Despite their differences, they share the belief that participation in social network sites has been helpful to their professional practice and,

in most cases, has benefited their school or district. In order to gather evidence to support their claims, I attempted to answer the following research questions:

Research Question 1: How are educational leaders using social network sites (SNSs) to engage with colleagues in virtual communities of practice?

Research Question 2: How are educational leaders using SNSs to support their personal and professional learning?

Research Question 3: What is the evidence that supports the perception that educational leaders' participation in SNSs is helpful to their practice?

This study was qualitative in nature and included an analysis of interview transcripts as well as a content analysis based on the participants' posts and interactions in their public Twitter streams.

Review of Methodology

As a former math, statistics, and physics teacher, I am inclined toward a post-positivist epistemological stance. Given this position, the research methodology I created for this study needed to balance a systemic approach with the flexibility to balance reflexivity of my personal experiences with those of the participants. This approach was balanced by my desire to honor the constructivist epistemology that posits that knowledge is constructed and not merely discovered. As such, it was important that my analysis establish credibility in both research paradigms.

In order to ensure that a broad range of perspectives was considered in this study, I used stratified purposeful sampling and selected five educational leaders. The participants varied by gender, leadership position, and years of service and I was deliberate about ensuring that they were practicing educational leaders who were actively using online social network sites.

Because of my interest in the participants' stories, I used a qualitative design that primarily incorporated narrative analysis of interviews along with a content analysis of participants' Tweets. I chose Twitter as the primary focus for the empirical phase of the study as it is by far the largest and most rapidly growing social network site and its users tend to have larger networks than users of other SNSs (Hampton, Goulet, Rainie, & Purcell, 2011). I presented the narrative data using thematic analysis, an approach which Riessman (2008) states is the most widely used and one that is particularly well-suited to applied settings like the one I studied. For the content analysis, I chose a coding scheme used in a previous research study since it had already been established and peer-reviewed (Alderton, Brunsell, & Bariexca, 2011). The researchers in this earlier study were focused on similar research questions and the method was well documented. In conjunction with the in-depth interviews, this approach allowed me to more completely explore how what participants thought they were doing online compared to what they were actually doing.

The use of collective case studies, as suggested by Creswell (2007), helped me gain a more thorough understanding of the phenomenon by viewing it through multiple lenses. The descriptive statistical data collected at the outset of the study set the stage for my interviews and helped to illuminate the qualitative findings. The depth of understanding I was able to derive through my chosen approach supported a deeper understanding of the complexities of educational leaders' use of social network sites than a either a purely quantitative or qualitative approach could provide.

I validated the study data using multiple methods as suggested by Bowen (2005) and Creswell (2000). The methods included triangulation of two analyses of participants' tweets as well as the interviews. In addition, I engaged each participant in member-checking both during

68

and after their formal interviews. Finally, I reviewed each case in light of the emergent themes to check for disconfirming evidence.

This multi-phase methodology yielded several key findings as presented in Chapter Four. In the remaining sections of this chapter, I consider the practical and theoretical implications of these findings while bringing to bear my own experiences as a school administrator and active participant in online social networking.

Conceptual Framework

Several key concepts and theories formed the basis for this study. In order to establish that social networking sites provide educational leaders with opportunities for professional growth, I balanced social and informal learning theory, current theories on leadership development for educational leaders, and the sociological framework of communities of practice.

Becoming a better practitioner involves learning and understanding developed in a communal or social context (Seely, Brown, & Duguid, 1991). Communities of practice provide practitioners with opportunities for this social and informal learning that is grounded in the work community members do (Wenger, 1998). The most effective learning for educational leaders appears to be happen when leaders participate in informal networking groups with other leaders (Hansford & Ehrich, 2006; Smith, 2007). In short, the benefits of participation in a community of practice are precisely the elements that constitute the most effective professional development for educational leaders: contextualized learning embedded in daily activities.

With these concepts in mind, the goal of this study was to provide evidence that the ways in which study participants use online social network sites approximate the ways practitioners connect in communities of practice. In establishing the similarities, I attempted to extend the concept of a community of practice beyond face-to-face communities and into virtual spaces

where participation is based on shared practice, but is no longer limited by geography or time. Simply put, if educational leaders can approximate communities of practice using social network sites as the medium, then they stand to reap similar benefits in terms of the social and communal learning and knowledge construction that in-person communities of practice afford.

Implications

Communities of practice exist as self-organizing and self-sustaining units that are independent from formal organizations (Wenger, 1998). They defy the traditional notion of the department or business unit in that their boundaries are flexible and participants are bound together by their practice and by the goal of producing shared practices grounded in their work (Wenger, 1998). Communities of practice accelerate learning and innovation (Seely, Brown, & Duguid, 1991) and this holds true for educational leaders as well (Cox, 2004). Social network sites are a relatively new phenomenon and only recently have they become an embedded part of our daily lives (Rainie, Purcell, & Smith, 2011). Indeed, in the last three years, the average age of SNS users has increased from 33 to 38 (Hampton, Goulet, Rainie, & Purcell, 2011).

Participants' descriptions and the empirical data collected suggest that the kinds of interactions they describe having via social network sites closely approximates those experienced in communities of practice. They describe being connected to others in similar roles and enjoying the mutually beneficial nature of sharing their practice. Susan told me, "I connect with people who are passionate about what I'm passionate about. I went into education in the first place because I like to help other people and I think that Twitter for me is a way to help other people professionally. And it's reciprocal."

I set out to develop a more thorough understanding of the ways in which educational leaders are using social network sites and the benefits they believe they have realized. My goal

was to establish a foundation that would support the use of these tools for professional and personal growth. As a result of my synthesis of the interviews and empirical data, I believe there are several important implications for professional development, educational leaders, and communities of practice.

Keeping Professional Development Relevant

As an educational leader with with eight years of experience as a school administrator, I have experienced first-hand the dearth of high-quality, high-interest professional development opportunities provided for educational leaders. District-organized professional development is often presented in a traditional, one-to-many style lacking the nuances of context, relevance, and timeliness that users of SNS experience. This is not to imply that formal, organized professional development is entirely bad or unnecessary, rather that as Barth (2005) and Fullan (2009) have noted and the participants corroborate, "learning must be something principals do, not something that others do to or for them" (Barth, 2005).

The participants in this study as well as its author have turned to social networking sites as a means to extend the opportunities afforded them by their school districts. They rely on social networking sites to collaborate and connect with other educational leaders and to create and maintain networks for collegial support. These networks have become virtual communities of practice in which participants view each other as equals and, as Smith (2007) notes, simultaneously as both mentors and mentees to other community members.

It seems that the individuals whose stories have been profiled herein are passionate about their work and believe deeply that participation in social networking sites has provided them with real professional benefits. From small changes like Steve's use of Google Forms to provide timely feedback to teachers, to Katherine's band teacher who used Ustream to bring overseas

parents virtually into their high school children's band rehearsal, the practical uses of social

networking sites appear to be limited only by the creativity of the leader. Susan uses Twitter as

her source for policy updates and breaking news in education and beyond, and Laura uses a blog

to share her school's news with her staff and community. Wayne, who was not an elementary

person prior to assuming the principalship, has found that his online conversations give him the

knowledge and confidence to engage in face-to-face conversations with his teachers about how

best to support the students in his school.

Of traditional professional development, Laura shared, "I spend whole days with

principals from my county. The presenters ask us to shut our laptops down. They hand us binders

of paper resources." Asked how this compared to her experience with social network sites, she

explained her frustration at attended conferences or sessions during which the presenters ask

participants to turn off their cell phones and laptops. To Laura, this was akin to taking away her

chosen method for processing and making meaning of what she learns. She clarified the

difference this way: "[With my online community], it's constant connections versus getting

together four times per year. I want to share and connect [with my virtual network] and you're

asking me to power down?"

To the study participants, the professional benefits of participation in social networks are

as real as those from formal, organized workshops or presentations. So much so that professional

development planners should take notice and understand that tech-savvy educational leaders are

looking to social network sites as a way to stay current and take ownership of their own learning

and growth. They will come to scheduled and required professional development, however they

expect to be able to immediately connect with colleagues to share and process their learning.

Staff developers need to consider these types of learners among the ranks of educational leaders

in order to keep their message relevant and avoid becoming, in Susan's words, "dangerously irrelevant."

In light of the theories of social learning discussed earlier, timely access to others' knowledge is a critical ingredient for constructing knowledge and meaning from participation in communities (Bandura, 1977; Borgatti & Cross, 2003). Those planning professional development for educational leaders would do well to consider that, although perhaps only a small minority, the number of educational leaders desiring to use these tools before, during, and after traditional professional development experiences will likely continue to increase. Indeed, social network sites as defined by Boyd and Ellison (2008) remain in a state of rapid growth and expansion across all demographics (Beer, 2008; Hampton, Goulet, Rainie, & Purcell, 2011; Madden & Zickhur, 2011; Rainie, 2011) and educational leaders are certainly among the adopters. Traditional professional development, with its one-to-many, passive format is insufficient to meet the demands of leaders who are connected through social network sites. According to Wayne, "With social media, learning can happen any time, any place. It's not about an event or a place you go. It's more fluid."

Supporting Educational Leaders

The ability to stay in near-constant contact holds promise for new and experienced educational leaders alike. Research on leadership development for principals consistently points to social, informal, and supportive interpersonal relationships are necessary components (Barth, 1985; Boerema, 2011; Hansford & Ehrich, 2006; Smith, 2007). These relationships have existed in one-to-one, mentor-mentee pairings (Boerema, 2011) as well as informal mentoring groups in which members serve a dual role as both mentor and mentee to each other (Smith, 2007).

Based on the stories of the participants as well as my own experience, it seems that even the most well-intentioned district, state, or national organization cannot create professional development opportunities to sufficiently and completely address the increasing demands and diverse needs of educational leaders. Factor in continually decreasing funds in states like Colorado and this becomes even more challenging.

The difficulty of delivering the right professional development to the right leader at the right time is further complicated by the fact that job of the educational leader is demanding. A given day rarely plays out the way it is planned and the needs of students and the school or organization often take precedence over leaders' professional growth. For busy educational leaders, social network sites with their always-on nature may afford ongoing opportunities for "drop in" learning during rare moments of down-time during the day. Laura told me, "Social media allows us all to connect with other practitioners in a way that wasn't always possible before because we were always working." The very nature of social network sites lend themselves to what Dunlap and Lowenthal (2009) refer to as "informal, free-flowing, just-in-time banter and chit-chat" which help cultivate engagement and social presence and, in turn, support a participatory, collaborative learning space (Hemmi, Bayne, & Land, 2009).

Beyond the time constraints on educational leaders comes the issue of relevance. Rutherford's (2010) framework for effective professional development indicates that it should be practical and participant-driven. I echo the sentiment from study participants that, regardless of our unique professional interests and needs, there is a conversation going on that will engage and challenge us. Steve described this in our conversation, "When I use social media, I can direct my learning to what I'm interested in. It allows me to personalize my learning to what I want to look at."

The two primary tasks of the emergent educational leader are surviving and becoming an instructional leader (Boerema, 2011), both difficult to accomplish when skills are taught in the absence of context. Revisiting the 27-year-old Harvard study cited earlier, "the professional invigoration of the nation's principals deserves our attention" (Barth, 1985). Although the same study acknowledges that principals are overwhelmingly resistant to formal professional development, Fullan (2009) emphasizes that leadership development should be job-embedded. Much of the research highlighted in this study points to the need for educational leaders to develop collegial, informal networks through which they can share ideas, problem-solve, and reflect on their practice (Hansford & Ehrich, 2006). With this in mind, the emergence of social network sites and their rapid growth into the mainstream seems to provide a means to support the personal and professional growth of educational leaders in ways that are simpler and more powerful than what was possible as few as five years ago.

Extending Communities of Practice to Virtual Spaces

Recall that, based on the research of Wenger (1998), the people in a community of practice are informally connected and are "fully engaged in the process of creating, refining, communicating, and using knowledge." A key implication of my research is the concept that communities of practice can exist in virtual spaces. Wenger (1998) already indicates that communities of practice defy traditional organizational structure and exist within and across organizations. Evidence gathered from participants as well as my own experiences in this area suggest that social network sites provide the tools and means to extend communities of practice into online spaces. The implication is that these communities exist not only across departments or organizations, but across spaces that are limited only by the existence of an internet connection.

If we accept that the most effective learning for educational leaders occurs through relationships with other practitioners, the ability to extend these communities of practice into online environments is of high interest to, perhaps, a superintendent or principal in a rural area. Like Steve, rural educational leaders often assume multiple roles such as principal and superintendent and their nearest job-alike colleague may be hundreds of miles or several hours drive away. The ability to create connections across extended geographic boundaries place rural educational leaders in a position to create and maintain their own learning networks regardless of how far away their nearest colleague may work. In lieu of isolation, social network sites have the potential to provide rural or otherwise isolated leaders important opportunities to others' knowledge and skills.

Beyond connecting isolated leaders with their colleagues around the world, virtual communities of practice also imply that educational leaders now have the ability to collaborate on projects in real-time with others who have similar interests. Though this seems like something that was possible with email, Susan makes a distinction that seems to indicate that the ways people interact on social network sites support building authentic relationships. "I email tons of people every month, but I don't have a relationship with those people." As a curriculum leader in her district, Susan is very focused on implementing the Common Core Standards that are being adopted in her state. "Let's take the Common Core. Yeah, it's happening here, but everyone is thinking about that. [Twitter gives me] a wider venue to inform my decision-making. As a leader, I need to have the vision of what's going on out there. It is vital."

Implications for Future Research

This study has generated for me as many questions as it has answers. I hope that I and other researchers will continue to explore the topics covered herein. The ability to connect with

76

other educators through the use of social networking sites has been critical to my practice over the last five years, including inspiring me to begin the doctoral process culminating in the study that you are now reading. The possibilities of social networking to provide meaningful and sustainable professional growth for educational leaders are plentiful and I have several suggestions for ongoing research.

First, how can planners of professional development best integrate the "early adopters" of social networking into existing professional development practices. Whether traditional delivery models will endure indefinitely is a topic in and of itself, but for as long as it persists, it is worth developing an accepted set of best practices that allow networked leaders to interact in the ways that they demand.

Conversely, what are the entry points into social networking for leaders who have not embraced it as a tool for professional learning? As evidenced in the cases of Steve and Katherine, it is not simply enough to show leaders the tools and hope that they will enthusiastically embrace them. Each of the participants in this study described a turning point. How can we accelerate or identify that turning point in others?

Third, how are educational leaders who participate in social network sites navigating the mixing of their personal and professional lives? In our conversation, Susan stated, "Some people might say that I've put myself out there. Sometimes I've let it be known that I'm at a bar or maybe away from home. Maybe some of the articles I share lean toward a particular viewpoint." Despite this, Susan does not believe that this co-mingling of personal and professional is a drawback. "I think it's empowering. There are always things that you need to be thoughtful about. The power is that we are all still human and we connect with people because of our humanness. I'm not afraid to share my persona life in my professional social network."

Fourth, how do educational leaders reconcile their online and in-person personalities? In our conversation, Steve made a side comment that stuck with me. He said, "I like to think that whether I'm on Twitter, in my office, or on the golf course, I'm the same guy." As I coded the narratives I started to wonder about those for whom this is perhaps not the case. Social networks can provide participants with a certain level of anonymity and the simple fact is that the medium lends itself to making connections with people whom you have not met in person. It would be intriguing to study the similarities and differences between educational leaders' in-person and online personas.

Fifth, how can the supportive, mentor-mentee relationships that develop through participation in online social network sites be used for teacher or administrator preparation, induction, and retention? In many states, new teachers and administrators are required to undergo a formal induction process as a condition of their license. Leveraging free and available social network tools could make this training more convenient, especially for those in rural settings where the network of in-person colleagues may be limited.

Sixth, what are the implications of social network sites for students? This thought first began to materialize for me during my conversation with Katherine when she asked rhetorically, "How do we take a look at the work we want kids to do and look at how technology is making that work possible?" If online social networks hold value for professional learning for adults, there is potential for student learning as well.

Finally, how can social networks be used to exert influence? In the contemporary language of the internet, I could rephrase this question as in terms of the conditions that need to exist for an idea to "go viral." This could be as simple as keeping school or district staff and

community informed of changes or as complex as planting seeds for change and innovation within schools.

Conclusion

To the participants in this study, as well as to the study author, the professional and personal benefits of participating in online social networks sites are very real. Participants cited tangible examples such as Steve's improved system for providing instructional feedback to teachers. They also describe intangible examples like the confidence Wayne describes as a result of the discourse he has with other leaders through his blog and other social network sites.

Revisiting the research questions one final time, it appears that educational leaders are able to leverage social network sites to create virtual learning communities which balance relationship-building through social interaction and professional growth through discussions about practice. Second, educational leaders use social network sites to support more traditional professional development offered or required by their districts. By accessing colleagues' knowledge in a sustained, ongoing way, the study participants use SNSs to interact in ways that support effective professional growth (Borgatti & Cross, 2003; Rutherford, 2010). Finally, participants offered multiple data points to support their claims that participation in SNSs does indeed support their practice.

The key thematic findings from the participants' stories are also critical to understanding the ways in which they believe SNSs support their practice. Participants universally felt that the opportunities for learning afforded by social network sites elevated their professional growth from what Wayne called "an event" to what Laura called "real-time [learning] with people who are living it." For Wayne, this meant moving beyond the idea of district-sponsored "professional development days" to "ongoing professional learning." Study participants seem to have shifted

their thinking from professional development as an event to professional development as a process of which SNSs are an invaluable component.

Another commonality among the participants' stories was the importance they place on relationships, both in-person and virtual. Katherine was adamant in her assertion that people can use social networks to build real and meaningful relationships, even bringing an online connection into her district to lead face-to-face professional development. Susan spoke about how Twitter helped her connect and improve relationships with colleagues in her own district she had never met.

Each of the participants described a critical moment where, for them, social networks went from being an interesting fad to a meaningful part of their professional learning. For Katherine and Steve, this came in the form of a push from colleagues to spend time investigating these tools. Wayne and Laura recounted experiences where their professional blogs received attention from notable educational authors and speakers. Susan clearly recalled her experience at a conference and her desire not to become "dangerously irrelevant."

Finally, participants talked about the power social network sites provide them to take ownership of their own learning. Katherine described this as the return on the investment of time required to get started in social networking. Susan asked rhetorically, "No matter what you do, what are you doing to improve yourself?" Laura spoke of educational leaders' need for constant learning and continuous development. All participants clearly believe passionately in their work and hold themselves to high standards for maintaining their own high level professional learning.

My own experience as a school administrator and social network participant is similar to what the participants describe. When I was a newly appointed principal, a significant part of my learning curve found me turning not only to in-district colleagues, but also to the virtual network

of colleagues I had built over several years as a result of my blogging and Tweeting. Several important decisions I have made in my practice have been refined and reflected upon within my virtual community of practice.

New and experienced educational leaders alike have only begun to explore the potential of online social network sites for personal and professional growth. Through the narratives of the participants and subsequent analysis, it is clear that their individual experiences in these online environments have filled a need for them that is not being completely met through the formal learning opportunities provided as part of their work. In addition, they have built and maintained their own learning communities in which they experience social and professional interactions that directly and indirectly support their practice and their schools. The educational leaders profiled herein appear to believe that the connections they have built through social network sites keep them informed and allow them to reflect upon and improve their practice, therefore keeping them from becoming, in the words that resonated so strongly with Susan, "dangerously irrelevant."

Researcher Reflections

"The challenge in front of us is to take what we learn and see online and do what we can to change the learning environment for every kid every day." Steve's words resonate with me as I reflect on the work that has brought me to the conclusion of this study.

As I mentioned at the outset, this study has been about the confluence of my professional and personal interests. I work diligently in my role as a middle school principal. I feel the weight of relentless pressure to improve student achievement with financial resources that continue to dwindle. Yet, I love what I do and, in no small way, I owe a part of whatever success I have achieved to the network of connected colleagues with whom I have become associated through

blogging and participating in Twitter. While I have built strong bonds with several colleagues within my district, participating in an online community of practice with other leaders has broadened my perspective and challenged my thinking.

In the Researcher's Perspective in Chapter One, I indicated that I believe I have benefitted from the connections I have made using online social network sites. It should be noted, however, that this model for personal and professional learning is not without its flaws. In my interview with Steve, for example, he shared a potential drawback of this model of online, social learning. "There's too much out there. It's too hard to keep up." Indeed one of the challenges is to consider the volume of information available as online social network sites continue to expand and users continue to share increasing amounts of information.

This experience has been extremely rewarding, both in terms of the conversations I have had with other leaders and the way I have seen the common threads of those conversations intertwine with each other and my own experiences to develop a more complete understanding of how educational leaders use social networks. The communities that have emerged and continue to evolve on social network sites mirror traditional communities. In these final thoughts I am reminded again of my conversation with Katherine, the most senior and highest level leader of the five participants and, in many ways, the most progressive in her thinking. "These communities. They are like watering holes. They are intersections where people get together and talk and share. We need to start looking at better mappings of how people connect and build these relationships because they influence people to try things that they otherwise would not."

Originally the domain of the likes of Ashton Kutcher, Lady Gaga, and their minions of followers, online social network sites are connecting practitioners from across town and around the world in meaningful ways that were previously impossible or, at the very least, inconvenient.

Educational leaders use these virtual spaces to hang out, collaborate, reflect on their practice, and construct meaning together. To the uninitiated it may appear that they are simply wasting their time "playing around" with the latest technology trend, but to the leaders profiled in this study social network sites are powerful tools that empower them to be deliberate, purposeful, and self-directed in their learning. They describe experiencing personal and professional growth through online interactions that, to them, is every bit as legitimate and real as what they glean from traditional professional development. To those leaders committed to their own growth and development, online social networks provide unparalleled opportunities to maintain their vitality as learners and to remain continuously relevant.

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84

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APPENDIX A: Institutional Review Board Exemption Letter

DATE: January 17, 2012

TO: Rodrick Lucero, Education
             Scott Elias, Education

Janell Barker

FROM: Janell Barker, IRB Administrator
             Research Integrity & Compliance Review Office

TITLE: Implications of Online Social Networking Sites on the Personal and Professional
             Learning of Educational Leaders

IRB ID: 004-13H   **Review Date:**   January 17, 2012

The Institutional Review Board (IRB) Administrator has reviewed this project and has declared the study exempt from the requirements of the human subject protections regulations as described in 45 CFR 46.101(b)(2): Research involving the use of educational tests,….survey procedures, interview procedures or observation of public behavior, unless: a) information obtained is recorded in such a manner that human subjects can be identified, directly or through identifiers linked to the subjects.

The IRB determination of exemption means that:

- **You do not need to submit an application for annual continuing review.**

- **You must carry out the research as proposed in the Exempt application**, including obtaining and documenting (signed) informed consent if stated in your application or if required by the IRB.

- **Any modification of this research should be submitted to the IRB through an email to the IRB Administrator, prior to implementing any changes**, to determine if the project still meets the Federal criteria for exemption. If it is determined that exemption is no longer warranted, then an IRB proposal will need to be submitted and approved before proceeding with data collection.

- **Please notify the IRB if any problems or complaints of the research occur.**

Please note that you must submit all research involving human participants for review by the IRB. **Only the IRB may make the determination of exemption**, even if you conduct a similar study in the future.

APPENDIX B: Coded Participant Tweets

Cat = Category (p = practice, r = resource, q = question, s = social, u = unknown)
Dia = Evidence of dialogue (1 = yes)
Text = the content of the tweet

Participant 1 - Steve

Cat	Dia	Text
r		Blog about using Pinterest in the classroom (Art) http://t.co/SPuzobTZ by @[redacted]
p		Using Pinterest in the classroom at #PCHS---a shoutout to @[redacted]for leading the way!
p		#PCHS's Consumer Science teacher showed me some really cool ways she is using Pinterest in her classroom! #itmaybeusefulyet!
p		Bills have to add value! RT @[redacted]: Why do all Congressmen get same pay? Why not merit pay for those who sponsor & pass most bills?
s	1	@[redacted]so...kinda like a hipster lumberjack dude? #iknowright?
s	1	@[redacted]were you looking in the mirror....#hipsterlumberjackguysliveinwisconsinlikepaulbunyonright?
s		If we just go ahead and name it Pearson High School will they send us stuff? #sickofhearingfromthesefolks!
s		31/366 4th Quarter http://t.co/cGDv6mQf
s	1	@[redacted]sigh
r		Leopard here. Might change answer later. RT @[redacted]: Self-Acceptance: Are You An "Alchemist" Or A "Leopard"? http://t.co/2bAefdRG #edchat
p		We have a pretty good idea about the democrat's platform on ed for 2012. Where will the GOP platform on Ed. be? #doesitmatter?
r		RT @JonathanEMartin: 8 Steps of Leading Learning Forward: A Case Study of @[redacted]'s Ed. Leadership: 21k12blog&gt; http://t.co/e4rQDue6
s	1	@[redacted] I am not there, but it aint pretty. We are down 9-34 midway through the 3rd.
s		RT @[redacted]RT @[redacted]: @[redacted]singing "Signs". It's inspired by my hometown. http://t.co/ItQPFurL
s		Nice looking school! RT @[redacted]: School at night. http://t.co/SgbdoXP7
s	1	@[redacted] That was a good one.....It was worth a good laugh....and we needed one that day!
s	1	@[redacted] thanks. The treadmill is ok for me. A little easier on the old ligaments but would rather run outside!
r		I am willing to bet you have no takers Ira... The Bet http://t.co/rt7vCYoa #cpchat #edchat #lawmakersputuporshutupchat
r		Yeah along with I have never made it yet.... RT @[redacted]: My Problem(s) With Educon	Connected Principals http://t.co/UHbVlpJv
s	1	@[redacted]I wish I could chase cars...thanks for the motivation!
s	1	@[redacted]Too much custard ya know.....
s	1	Sadly, no. That is my weight. RT @[redacted]: @[redacted]Is that MPH?
s		30/366 The Mill http://t.co/GzubBiEu
r		RT @[redacted]: Dallas Takeaways - http://t.co/faz5eoZP So hard to look at situations through the lens of a role we have not practiced.
s		RT @[redacted]: @[redacted]Congratulations! Ditto!
s		Ran 3 miles in 23 mins and felt great. 91/1000 YEAH! #temt http://t.co/pE5t9MvW
s		I'm at Tom's Fitness (E Wood St., Main St., Paris) http://t.co/dPQ1idCo
s	1	@[redacted]@ [redacted]actually just keeping track on CBS.com while doing some other things
s	1	@[redacted]@ [redacted]52 - 35 AFC
s		Original True Grit &gt; True Grit 2011 No one can do Rooster Cogburn like John Wayne!
s		29/366 Pillow? I don't need no stinking pillow! http://t.co/BvjlFbJs
s		Ran 7 miles in 1 hour and 2 mins and 37 secs. #88//1000 #temt http://t.co/mFsI6faX
s	1	@[redacted]Just got here. About an hour I hope....
s		I'm at Tom's Fitness (E Wood St., Main St., Paris) http://t.co/5tAgBwDj
s		That's it! I am driving south until the air temperature is about 50 degrees and looking for the 1st golf course....who is in?
p		I hope folks consider the "real" reasons students drop out before we mandate NO DROPOUTS http://t.co/yedzLpXz
s	1	@[redacted]@ [redacted]nice job today guys!
r		RT @[redacted]: Build your Twitterdex, make a think-tank that is an unfair advantage for you and your students! http://t.co/hRHq6rdb
p		RT @[redacted]: Too much "I did this" rather than "students did this." Speaks to agency. #educon

p		Having my children in my building is a huge change in the lens that I look through daily! #cpchat
s	1	@[redacted] Shouting back at ya! Sadly, from a distance!
q		What was the google doc address? #cpchat
s		RT @[redacted]: Doug's t-shirt says: They say I have A.D.D. but they just don't understand. Oh Look! A chicken!
r		PCHSdirectorBLOG asks for reflection in 3 Years Later...some questions??? http://t.co/CGnpAtde #cpchat #edchat
r		New post: …Three Years Later…some questions??? http://t.co/CGnpAtde #edchat #cpchat #PCHS
s		28/366 Chicken Noodle Soup http://t.co/t2jX1viR
s		Ran 3 miles in 27 mins. 81/1000 #temt http://t.co/vY4m5hdP
s		I'm at Tom's Fitness (E Wood St., Main St., Paris) http://t.co/i6Ch7xv6
s		There is an app for that.....RT @[redacted]: Not even halfway there. http://t.co/RmBKQbU1 #trenchchat
s	1	@[redacted]Most of those runs are on a treadmill....set the speed and just keep up...
p	1	@[redacted]can you share your results when you are finished? #cpchat #educon
s		27/366 SMARTSnake http://t.co/ruA0GHvk
p		We performed a SMARTBoard snake extraction today! #beatthatIdareyou
q	1	@[redacted]Do you have a program for switching out laptop batteries?
s	1	@[redacted]I think kids should bring custard to class everyday.....maybe with cookies in it?....
r		Kids Are Not Cookies (thank goodness!) http://t.co/lOnFlRIt by @stumpteacher
r		And I don't even like Big Macs http://t.co/WaOAqXMN This relative conservative concurs with this completely.
s		Ran 3 miles in 26 mins and felt alright. 78/1000. #temt http://t.co/6Ar1NAty
s		I'm at Tom's Fitness (E Wood St., Main St., Paris) http://t.co/896Unudg
s	1	@[redacted]I have had that. It is good.
s	1	@[redacted]I will have to give that a try
q	1	@[redacted]attended for real at ISTE11 What should I buy to attend virtually? #Educon
s	1	@[redacted]No. Have you?
s	1	@[redacted]Now you are talking!
s	1	@[redacted]YES!
s		26/366 New Office Anti-Snooze Dispenser http://t.co/xXHaBJun
s	1	@[redacted] Touché, madam.
q		Easy...NO! RT @[redacted]: Is it reasonable to have identical learning standards for all students in all states? Same assessments? #edchat
s	1	@[redacted] ok....as long as we have school......ice away
s		NOOOOOOO! RT @[redacted]: Tons of ice
s		I'm at Paris High School (309 S Main St, Paris) http://t.co/YW3VAfkP
s		25/366 Old School http://t.co/31Yrc1Cl
s	1	@[redacted]and we are supposed to feel sorry for you somehow? Thirties and no sun for days here in Paris............
s		Wow...eeerie resemblence I must say! RT @[redacted]: RT @[redacted]: The best photo of Newt Gingrich you will ever see: http://t.co/9I6DVrpC
r		Defending the Retake http://t.co/UL4uhm0t by @[redacted]
r		RT @[redacted]: computational thinking for all ... an ISTE original vid - we should be talking abt this as a nation http://t.co/SshUFHtB
p		Yes! and that is what is important! RT @[redacted]: But isn't a portfolio a student creation comprised of their learning? #edchat
s		Ran 3 miles in 25 mins. #75/1000 during #SOTU #temt http://t.co/d2nkNdjm
s		I'm at Tom's Fitness (E Wood St., Main St., Paris) http://t.co/E3s05BLs
p		The textbook should be the creation of the students and be comprised of their learning #edchat
s		24/366 It's A Tough Life! http://t.co/Sp9oxp7s
r		Teachers take to Twitter to improve craft and commiserate http://t.co/HLUBNEt1 #pchs
s	1	@[redacted] @[redacted] @[redacted] @[redacted]It all sounds good. Now about the golf.....
s	1	@[redacted] @[redacted] @[redacted] I will be in WY in early July myself more than likely.
s	1	@[redacted] @[redacted] @[redacted] sounding better all the time!
s	1	@[redacted] @[redacted] @[redacted] good fishing in CO if you can find a place that is less frequented
s	1	@[redacted] @[redacted] sounds good to me!
s	1	@[redacted] @[redacted] I have been flyfishing on the Snake in WY but not where it really gets rolling #keeptalking
s	1	@[redacted] @[redacted] you are on. The one thing I miss about living in the west #goodflyfishing!
s	1	@[redacted] the sand is right there....you just need to reach for it.....
s	1	@[redacted] I used to own this 45 in the old days http://t.co/V9wCKldn Indiana Wants Me
r		"Teaching matters everyday" RT @MrWejr: Connected Principals: "the silver bullet..." http://t.co/42xONFl6 by @[redacted] #cpchat

s	1	@[redacted] such descriptive writing today! Even better than the Last Crusade!
s	1	@[redacted] @[redacted] Thanks for the mention today!
s	1	@[redacted] lol... thanks!
s	1	@[redacted] @[redacted] @[redacted] @[redacted] @[redacted] Thanks for the RT
s	1	@[redacted] @[redacted] @[redacted] @[redacted] thanks for the RT
s	1	@[redacted] on my way. Then flyfishing on Snake River?
s		#23/36623/366 Groundhog? Squirrel no shadow! http://t.co/91bRocnw
s		Ran 3 miles in 25 mins. #72/1000 intervals #temt http://t.co/NYDV6jbf

Participant 2 – Wayne

Cat	Dia	Text
r	1	Hey @[redacted] do you have a link to your prezi on Twitter and educ? @[redacted] @[redacted]
p	1	@[redacted] I think time away from the school should be spent on community activities and family time - not more school (elem)
p	1	@[redacted] work ethic can be taught in many ways and I do not believe that we need HW to do this. Kids r at school for 6 hrs already.
r		The BC Education Daily #bced is out! http://t.co/itHjNRdw ▸ Top stories today via @[redacted] @[redacted] @[redacted] @[redacted] @[redacted]
s	1	@[redacted] love the "honouring the individual" - so important in areas even beyond twins and parenting
s		Great article. RT @[redacted]: The Challenges & Joys of Raising Twins @[redacted] http://t.co/oTeIDp4j…
p		Had a great skype call w @[redacted] - inspiring stuff going on at #UVIC for #edtech. Looking fwd to working w #edci336 stu's next week.
s		That time of year... http://t.co/JWpcFZKJ
p		A Must Read! RT @[redacted]: 14 staff members showed up for our 6:30AM "coffee and book chat" on Mindset. Way to go, @[redacted]!
s		We have a safety concern - just had 2 students run into each other because they were reading their books walking down the hallway. :-)
r		Thinking about equity » What's In YOUR Invisible Knapsack? http://t.co/es2mlM8M #bcedplan #bced
r		Born to Learn ~ Adolescents Crave Purpose http://t.co/yfjuSeXa #bcedplan
q		Meetings–are they effective? how much do u remember once you leave? http://t.co/Lm6pC6Oo great thoughts by @[redacted] #cpchat #bced
p	1	@[redacted] @[redacted] @[redacted] @[redacted] hey all, just seeing if we can strike up the restorative circle visit conv again
p	1	@[redacted] for a social studies assignment - you should have seen the results. Very powerful in the gr. 4 class.
p	1	@[redacted] I like the idea of HW that is meaningful and encourages family time - a teacher asked his kids to interview an elder...
p	1	@[redacted] many want HW so they have confidence in what child is learning at school. Communication is key. Have had a few debates ;-)
p	1	@[redacted] I used to give HW because that was what everybody else did... Was almost an expectation.
s	1	@[redacted] haha... No worries.
p		Commented RT @[redacted]: RT @Joe_Mazza Parental Involvement is a major factor in student success via @[redacted] http://t.co/WzNTjrxK
r		RT @[redacted]: RT @[redacted] Wow! Some truly amazing statistics... The 10 Most Educated Countries in the World http://t.co/FDiBnxhV via...
s	1	@[redacted] send it to Druet for the big party going on on the back of his head
s	1	@[redacted] he's like a head and shoulders commercial. :-)
s	1	@[redacted] @[redacted] @[redacted] although I really enjoy death by PowerPoint via webinar
s	1	@[redacted] haha!!! Good eye... Grade 12 at HSS baby!
s	1	@[redacted] @[redacted] @[redacted] I won't tell ;-)
r	1	@[redacted] @[redacted] @[redacted] it is a personalized, experienced search tool
p	1	@[redacted] can u connect with @[redacted] - pre-serv teacher asking about chats for gr 7 math humanities
r		MT @[redacted]: RT @[redacted]: "eFACE it, Parents are using technology" http://t.co/KAjOtp7l gr8 lists of ideas on engaging thru tech
q	1	@[redacted] @[redacted] did u learn more from the webinar or twitter?
s	1	@[redacted] my wife would be very happy if I did that :-)
q	1	@[redacted] hey Zoe, was working w some pre-service tchrs yesterday... Is there a hashtag you use? #ntchat ?
r		RT @[redacted]: Lots of #teachers would use Twitter if they understood its power. My attempt 2explain. http://t.co/GWHT1Jct #edchat #ufvtep
r		Homework Why's and Homework Wise http://t.co/lHNBF28m #edchat
p		Great meeting with @[redacted] today on how we can work with our families/communities to support early literacy. #bced #sd78
p	1	@[redacted] @[redacted] seems like common sense to some - however many feel the need to try to give it out :-(
q		RT @[redacted]: Any kindy teachers in BC do the EDI with their students? Thoughts, opinions, advice?? #bced
p		Loving the student #39voice that happened today with @[redacted] #bced
r	1	@[redacted] @[redacted] yes @[redacted] is the man for resources. Here is his list here http://t.co/rDIrBkot
r		The BC Education Daily #bced is out! http://t.co/itHjNRdw ▸ Top stories today via @[redacted] @[redacted]

			@[redacted] @[redacted] @[redacted]
s	1		@[redacted] and at play :-)
s	1		@[redacted] love your avatar! :-)
q	1		@[redacted] what does this say about the school system? How many others do not see relevance and become disengaged like you were?
q			RT @[redacted] : Our job is to guide stdnts towards self-regulation & construction of the self. What do they construct when we punish them?
p	1		@[redacted] yes, restitution is something we are trying to move toward. Have u read Diane Gossen's stuff?
s	1		@[redacted] hey Heather! Loved being part of #ufvtep for a day! :-)
r			Educon 2.4 was a Stretch http://t.co/KqoEuSw7 @[redacted] describes how a conference should be. #cpchat
r			BOOM! How Did Our Students Feel About Their Homework-Free Vacation http://t.co/4L0VlaEV #cpchat @[redacted]
r			My Problem(s) With Educon	Connected Principals http://t.co/Z6Mf236t by @[redacted]#cpchat
r			Check out what a grp of tchrs at our school r doing 4 literacy: For the Love of Books Ready for Kickoff http://t.co/prbVEgZc #bced
r			What's your Richter scale? http://t.co/bNYI9yzf @[redacted] reminds us it is not about the "who" in twitter
s	1		@[redacted] I figured you were collaborating :-)
p	1		@[redacted] @[redacted] I liked math and biology because I had great teachers... my English teacher @[redacted] was great too
s	1		@[redacted] ahahahha.... well played, my friend.
s	1		@[redacted] I was going to say you used to blog.... ;-)
q	1		@[redacted] many issues at play - why did you not want to do well? did you want to do well in some areas?
s	1		@[redacted] one of my all time faves!!! :-)
r	1		@[redacted] wrote this post based on the work of Greene and others "They need teaching... not punishment" http://t.co/Hf6OhoPA
r			They Need Teaching… Not Punishment http://t.co/QMnH1ZnE
s			Pumped to see another #sd78 #bced educator on Twitter. Pls follow @[redacted]
s	1		@[redacted] was a HS teacher in Langley for 7 years, then VP at my current school for 1.5 yrs, then principal.. and loving it! :-)
p	1		@[redacted] one of my all-time fave books... it has worked so well in our school. Takes a while but it works :-)
s	1		@[redacted] bahahahaha... you and me both.
s			Please flw some pre-service #BCEd teachers @[redacted] @[redacted] @[redacted] @[redacted] @[redacted] @[redacted] #ntchat
p	1		@[redacted] the most important thing we can do is put quality educators in front of kids - how do we (and who gets to) define this?
s	1		:-) RT @[redacted]: Anyone caught wind of Google changing their Privacy Policy? If they do I sure hope they tell us 28 times each.
r	1		@[redacted] @[redacted] @[redacted] @[redacted] @[redacted] http://t.co/gl9QRW7D
s	1		I heard Schim isn't working so he can babysit. @[redacted] @[redacted] @[redacted] @[redacted] @[redacted]
s	1		@[redacted] @[redacted] @[redacted] @[redacted] @[redacted] did we just become best friends?
p	1		@[redacted] wow! Now that is jumping right in! Well done :-) Enjoy #kinderchat
s	1		@[redacted] great to see you on Twitter. Be sure to connect w @[redacted] @[redacted] @[redacted] for #kinderchat #ufvtep
p	1		@[redacted] @[redacted] probably. often retention is done as the only "strategy"...
p	1		@[redacted] @[redacted] also, the question is would the retained students been more successful w promotion and effective intervention
p	1		@[redacted] @[redacted] I guess the ques is who and why they were retained.
p	1		@[redacted] @[redacted] many school dist in BC stopped retaining students. Retention is not an intervention strategy. Must be more.
p	1		@[redacted] @[redacted] that is rare - have you seen Hattie's research on retention? One of the few things that we can do to kids w neg effect
r			Slides from today: Learning Thru Social Media: Any time, Any Place http://t.co/7MldJbgm #ufvtep #bced #edchat
s	1		@[redacted] all of the above! :-)
p	1		@[redacted] @[redacted] one of our teachers did... Very hard to find one that remained in school.
p	1		@[redacted] @[redacted] ask away - we have a FB Page for 3 years. A great way to communicate with parent and community.
s	1		@[redacted] hahaha... Thanks buddy.
s	1		@[redacted] haha... Could have used that one!!!! Thanks for "stopping by"
s	1		@[redacted] mentioned of a few times today :-)

s	1	@[redacted] my pleasure. I look forward to connecting with you thru twitter :-) #ufvtep
s	1	@[redacted] thanks for being so engaged. Truly inspiring to work with the group! I look forward to learning from you. #ufvtep
s	1	@[redacted] great to finally meet you! Thanks for the help today and good luck in your practicum! #ufvtep
r		Here is a Google Doc to show the Power of Social Media - UFV - https://t.co/QmfMYk37 #ufvtep
r		The BC Education Daily #bced is out! http://t.co/itHjNRdw ‣ Top stories today via @[redacted] @[redacted] @[redacted] @[redacted]
s		#cpchat #edchat #bced Please help my session and say hi (& location) to a group of preservice tchrs from UFV. Use #ufvtep. Thanks!
r		Twitter Guide Book – How To, Tips and Instructions by Mashable http://t.co/s1rBHoB0 #ufvtep
s		Doing a session w pre-serv tchrs at Uni of Fraser Valley today on using social med 4 pro learning. Pls say hi at #ufvtep and RT.
r		BOOM! Communicating Learning NOT numbers http://t.co/VJw3FlYg some great q's and thoughts by @[redacted] #bced #cpchat
r		The ISTE BYOD Debate http://t.co/X6sRu8op I always appreciate @[redacted]'s thoughts on this... Keeps me thinking. #cpchat #bced #bcedplan
r		How high stakes corrupt performance on tests, other indicators http://t.co/h39LBgFr
r		RT @[redacted]: #edcampvi press release is out thanks to @[redacted]http://t.co/v4LfuFR6 #bced Join us March 3 in Courtenay!
r		Check out this cell phone policy via @[redacted] https://t.co/px4t1BYP #bced #cpchat
p	1	@[redacted] yes... and build a culture of trust rather than fear (love the doc by the way... will share)
p	1	@[redacted] gotta love a culture of fear - great for building community.
p	1	@[redacted] unreal... but have you heard what kids can do with those phones these days? ugh.
s	1	@[redacted] lots to chat about - just prepping for a pres - will try to respond Tuesday.

Participant 3 – Laura

Cat	Dia	Text
s	1	@[redacted] There is definitely enough light to read in there... let me check on the details :)
s	1	@[redacted] It has glow in the dark stars and lights inside too! Created by @[redacted]
s	1	@[redacted] Nice! Did it work well?
s		I wonder if the kids would notice if I did some reading in here. http://t.co/SIffIoo6
r		Counting large numbers; A Kindergarten counting inquiry http://t.co/W1MyqHhe #elemchat #educon #edchat
r		Self-Acceptance: Are You An "Alchemist" Or A "Leopard"? http://t.co/iGh0kmok #edchat
s	1	@[redacted] Sounds like a #win to me.
s	1	@[redacted] Ridiculous!
s	1	@[redacted] When I heard that this weekend at Educon, I thought, "What the what?"
r		My Problem(s) With Educon http://t.co/0lVXW4Qj from @bhsprincipal #edchat #cpchat #educon
s	1	@[redacted] Thank @[redacted] @[redacted] and @[redacted]...
r		Don't bring your device (or cinnamon) to school. And don't try to hide it in a boot. http://t.co/eTu1c4Hh http://t.co/QvOMNqKH #PApride
r		From #educon -&gt; Examining the Impact of Social Media-Fueled PD on Classroom Practice and Student Learning http://t.co/LknYbPRq
p	1	@[redacted] Meh, I'll take it. Grades mean nothing. Your constructive feedback would be more productive.
s	1	@[redacted] A+ A+
s	1	@[redacted] I doubt it. But, I enjoyed the break from reading one billion trillion report card comments.
s	1	@[redacted] I think I like the second one best. But I don't know your kitchen.
s	1	@[redacted] And to think, I just got started! :)
s	1	@[redacted] Okay, happy to help! cc: @[redacted] :)
s	1	@[redacted] Of course you can. Whatcha need?
s	1	@[redacted] Ohhh... it's THAT Eric Sheninger! :)
s	1	@[redacted] Yes, I'm here. But I'm not helping. bwahaha
s	1	@[redacted] Sheesh, I didn't even recognize you. :)
s		School at night. http://t.co/ASk7Jwxo
s	1	@[redacted] You too :)
s	1	@[redacted] I have never been able to do that. Text is a struggle for me in that program.
s	1	@[redacted] Borrow away...
s	1	@[redacted] You know, I was thinking about doing just that.... :)
q		Questions posed by participants in this weekend's elementary-focused #educon session http://t.co/LteaBHzo #elemchat #educon Your thoughts?
r		Enjoying a ride through Learningtown cc: @[redacted] #ha http://t.co/krlxEXcy
s	1	@[redacted] I am sorry we didn't get to talk this weekend! Heard your session inspired many!
s	1	@[redacted] Definitely... just let me know. Hope you enjoyed your weekend!
p	1	@[redacted] I am sharing them out to teachers later today... thanks so much!
r	1	@[redacted] Did you see the latest cover of Time? http://t.co/gP4E1Tra
s	1	@[redacted] Me too, on both counts. Also, it was beyond fantastic meeting and chatting with you! Happy Monday :)
p	1	@[redacted] I'm glad you found meaning in that. Enjoyed our conversations this weekend!
s	1	@[redacted] Solo. Maybe they can take it up a notch tomorrow ...
p		Student announcement team just kicked off our Monday morning by humming the Star Wars theme. Priceless. #iloveelementary
s	1	@[redacted] So nice to meet you, I really appreciate your willingness to share in the session!
s	1	@[redacted] So glad to see you again! Keep sharing the great work you're doing :) Have a safe drive!!
s	1	@[redacted] No worries, enjoyed the conversations in your session. Safe travels!
s	1	@[redacted] Thanks so much for attending! Appreciate the feedback.
u	1	@[redacted] Agreed.
s	1	@[redacted] Yup. Pack your bags.
s		I think... http://t.co/eaauhX9H
p	1	@[redacted] @[redacted] beyond just reading the stream.
p	1	@[redacted] @[redacted] Right. I think I learn a lot based on the information that is shared through Twitter. But it takes effort on my part
s	1	@[redacted] You'll love it. :)
r	1	@[redacted] Ntcamp... I don't know if it's happening this year. There will be an Edcamp Boston, though! http://t.co/RlXso63E Apr 28!

s	1	@[redacted] @[redacted] Meow.
r		The Rise of the New Groupthink being shared by @[redacted] http://t.co/0RaTvJiF #edchat #educon
s		"I just ruined SLA." @[redacted] #educon
s		If you liked Learn http://t.co/it2iNKjx you'll enjoy Move http://t.co/4RMYMTNF and Eat http://t.co/SstvSKlG too :) #educon
s	1	@[redacted] @[redacted] @[redacted] @[redacted] I agree! Steve is phenomenal, so happy to have met him this weekend!
p	1	@[redacted] You are another amazing resource I shall add to the doc! Hope all is well.
p	1	@[redacted] Twitter in itself is not PD, imo. More like a method of acquiring info that could lead to deeper learning. #educon
s	1	@[redacted] You are not a pain :) Can I email you/
q		Our questions.... what do we wonder? How can we move elem. education forward? http://t.co/5wqGbOZJ #elemchat #edchat #educon
s	1	@[redacted] Are you still here? Will try to say hi before leaving!
s	1	@[redacted] Were you in the elem. session? I want to meet you!
p	1	@[redacted] Small groups with whole-group sharing after the different brainstorming segments. Worked well.
s	1	@[redacted] @[redacted] Was a pleasure meeting you both! Talk to you tomorrow :)
r		So thankful for the genius participants who attended my session. Read their ideas here and add yours! http://t.co/8PFlMx9b #educon #elemchat
s	1	@[redacted] Thanks for that horrible, horrible photo.
s	1	@[redacted] You come anytime!
r		Elementary innovation - add your thoughts here http://t.co/8PFlMx9b #edchat #educon #elemchat
s		Love, love, love this photo :) http://t.co/XwQszyfx #educon @[redacted] @[redacted]
s		Thank you thank you SLA kids for putting the room back together for our next session! #educon
p		We're going to talk about elementary learning and innovation and stuff in Room 208. Come on in and join us. #educon
s	1	@[redacted] Shout out to you!! :)
p	1	@[redacted] Thanks for sharing The Blue School yesterday. Have been looking for intriguing elementary learning spaces.
s	1	@[redacted] We just finished breakfast, headed to SLA in a bit.
s	1	@[redacted] Yikes. A scary thought, indeed :) Looking forward to saying hi today.
s	1	@[redacted] @[redacted] @[redacted] @[redacted] You were just your awesome self.
s	1	@[redacted] Everyone?! Even meee?!! :)
s	1	@[redacted] @[redacted] At Elephant & Castle I believe!
s	1	@[redacted] is super pumped about karaoke :) #eduenthusiasm
r		Hey everyone follow @[redacted] to stay informed about some awesome things in the future!!
s	1	@[redacted] Wish you were here, Joan!!
s		I'm at BHSPrincipal's Shadow (Thorofare) [pic]: http://t.co/8DkhDQJf cc: @[redacted] @[redacted] @[redacted]
s	1	@[redacted] Are you at Educon?
s	1	@[redacted] So great chatting with you today!!
r		The YouTube show with @[redacted] #educon http://t.co/TYDIsi8O
s	1	@[redacted] We are catching dinner here, then not sure. Will let you know!
p	1	@[redacted] @[redacted] @[redacted] How else do they get the info? Make it the "place to go" for updates and news.
p	1	@[redacted] @[redacted]Your staff blog is awesome!! It will take some adjusting, but they will come to appreciate it :)
p	1	@[redacted] @[redacted] them opportunities to do so, it will be more difficult for them to model that with students.
p	1	@[redacted] @[redacted] They will need to learn how to filter the information being shared. It's an acquired skill. If we do not give
p		The ensuing conversations around inquiry are more powerful than any typical assessment- informs both the teacher & learner. #educon
q	1	@[redacted] @[redacted] @[redacted] How was that classroom experience relevant for students? (A lesson follow-up question).
s	1	@[redacted] @[redacted] Are you saying you're a lost soul? :)
p	1	@[redacted] Oh, I also think expecting teachers to teach the same lesson on the same day across a district is sheer lunacy.
p	1	@[redacted] I want to learn how to help create a culture of professional inquiry among teachers. Thinking about questions we can ask.
p	1	@[redacted] telling us the situation makes the motivation - choice, challenge, collaboration, control (Paris & Turner) #educon
s	1	@[redacted] is dancing for us #educon

s	1	@[redacted] @[redacted] @[redacted] Glad you're enjoying your day!!
s	1	@[redacted] I can't believe I haven't seen you since breakfast! Haha
p	1	@[redacted] Save the meetings for learning/PD/sharing when necessary. Just my opinion :)
p	1	@[redacted] Better yet, have them engage in discussion and answer questions raised in a shared space #nowwedonthavetomeet
p		@[redacted] "My PLN has ruined my life." His PLN has destroyed his perception of what he THOUGHT good teaching should be. #educon

Participant 4 – Susan

Cat	Dia	Text
s	1	@[redacted] :) !!!!
r		Ideas Id Like My Future Principal to Consider: The Schedule http://t.co/bMUD5Rud #tsdr2j
r		Video Tutorial: How to chat on your iOS using Skype http://t.co/1vO16wYs
s		Whoo hooo! Great game! @[redacted]: I'm at Super Swarm Sunday w/ @[redacted] @[redacted] @[redacted] http://t.co/fVD3gcKL
s		I just unlocked the "Super Swarm Sunday" badge on @[redacted]! Go team! http://t.co/YOjJq67f
r		International Initiatives Fuel Growth of Open Ed. Content http://t.co/uIwcu151 @val6dan
r		CMA donates $1.4M to help students learn music http://t.co/XN5OKL3Z @[redacted]
r		States Mulling Creativity Indexes for Schools http://t.co/bqNX2VDd via @[redacted] #tsdr2j @[redacted] @[redacted] @[redacted] @[redacted]
r		"@[redacted]: nice! 'Failure week' to build resilience http://t.co/fOxQhos5 #tsdr2j @[redacted]
r		"@[redacted] robert cool. I wish colorado would! http://t.co/JDottlsB http://t.co/msvSXlIc" cc @[redacted] @[redacted]"
r		Want to Get Into College? Learn to Fail http://t.co/xxoVaXSw #tsdr2j @[redacted] @[redacted] @[redacted] @[redacted] @[redacted] @[redacted]
r		Psychologists, Educators See Facebook as Aid in Suicide Prevention http://t.co/CmlMByL0 via @[redacted]
r		Tools Id Like My Future Principal To Consider: Twitter http://t.co/G7uVKgpQ
r		Personal Learning Networks for Educators: 10 Tips http://t.co/wAGzseEf #tsdr2j
r		Video Of Amazing New EBook Interface http://t.co/1TdspLhj #wow #tsdr2j
r		When Teachers Are Free Agents http://t.co/uxTzxXCs #edchat
s		I just ousted @[redacted] as the mayor of Walgreens on @[redacted]! http://t.co/kENIOt5c
s		I just became the mayor of Generations Wine & Martini Bar on @foursquare! http://t.co/sEf6zmUo
r		Obama wants schools to speed digital transition – http://t.co/Wvak75Jr http://t.co/PpOIHIrN via @[redacted]
p		Thompson will have a #snowday today!!! #tsdr2j
s		I just unlocked the "PA Groundhog Day 2012" badge on @[redacted]! http://t.co/MUVuhKYp
s	1	@[redacted] @[redacted] @[redacted] @[redacted] wish I could :(no $
r		Retaining 3rd-graders and hot policy debates in Colorado http://t.co/ePlb7HK1 #tsdr2j @[redacted] @[redacted] @[redacted] @[redacted]
r		Can one professor teach 500,000 students at once? http://t.co/Ao0CBgAQ
p		For Dr. King, Freedom and Education Were Intertwined #tsdr2j
r		After Homelessness, Honors From a National Science Fair http://t.co/CSSRbXUa
r		The Learning Network Blog: Reader Ideas	Teaching the Civil Rights Movement http://t.co/8XiIutjX
r		Young Writers Become Primary Sources http://t.co/SVABjeAd
r		Reasons an innovative educator likes the Google Chromebook and some things I'd like improved http://t.co/Xz6Gn8Tw
r		RT @[redacted]: Chart illustrating differences between personalization, differentiation and individualization http://t.co/YBYDIK0V #tsdr2j
r		Use Appointment Slots on Google Calendar to set teacher conferences http://t.co/vl6eSd9D #tsdr2j @[redacted] @[redacted] @[redacted]
r	1	@[redacted] Here is the FAQ: http://t.co/VUC23Sxo and here is a demo: http://t.co/sFKp2tKa via @[redacted]
p		Argument and Persuasion are different #LDCTSD
p	1	@[redacted] Shift of focus away from examining assignments toward examining task #LDCTSD via @[redacted]
p		Tweeting LDC Training in Thompson @[redacted] The product of an LDC task is not a summative assessment. It's an assignment. Nice! #LDCTSD
p	1	@[redacted] It is a nearly, full computer Add disk and you are set for $25 Add CS teacher and eager students = CS goodness" via @[redacted]
r	1	@monk51295 check it out - project interesting for teaching children programming at a low cost. http://t.co/kPLHbGEN via @[redacted]
r		Literacy Design Collaborative training - Day 2 #tsdr2j #commoncore @[redacted] http://t.co/VFFFpHFR
q		Sadly - this is way OVER my head - what do you do with it? @[redacted]: @[redacted] http://t.co/kPLHbGEN"
r		RT @[redacted]: Got great stuff going on in your classroom? We want to know! Read "From the Classroom Week" http://t.co/OAoT7YGR #tsdr2j
r		Learning about the Green Ribbon Schools program - very cool! http://t.co/maWMHhfK #tsdr2j Only one school from Colorado involved!
r		RT @[redacted]: How to create engaging lessons using mobile technology http://t.co/5rBMyDbg #tsdech #tsdr2j
r		RT @[redacted]: Music tech students working with GarageBand today. #edtech http://t.co/Kqu6Huij @[redacted]
r		"@[redacted]: Question to the crowd: What do you think it means to "lead the world" in educating

100

		people? #EdSOTU
p		"@[redacted]: School leaders tweeting the state of the union: use #EdSOTU"
r		Bromwell Elem reported $229,871 in PTA donations, topping all other Denver schools, funding 2 teachers and 5 classroom http://t.co/1XROF3po
r		Computational Thinking: A Digital Age Skill for Everyone: http://t.co/sa8M46iI via @[redacted] @[redacted] #tsdr2j
s	1	@[redacted] thanks for the shout out :)
r		RT @[redacted]: Study shows students score better on standardized test using HMH's algebra iPad app. http://t.co/G298u7cf
r		350,000 textbooks downloaded from Apple in 3 days http://t.co/yNbeqHXU via @[redacted] #tsdr2j
p		RT @[redacted]: Whoa... MVHS has a percussion ensemble just for SPED kids. That is way cool! #tsdr2j
p		Congrats to Loveland High AP/AD Glenda Bates, inducted into Colorado ASA Hall of Fame, Umpire Category! http://t.co/yvNhclIJ #Loveland #noco
s	1	@[redacted] :) Will do ---- thanks!
p	1	@[redacted] --- so --- if you blog or post about this challenge - let Melissa know she wants to post on TSD Facebook.
p	1	@[redacted] awesome! - sitting with Melissa Adams talking twitter and trying to use the #tsdr2j tweeters to feed her great marketing info
p	1	@[redacted] Tell me more about the T-Bird Tune up - inquiring minds want to know - market #tsdr2j
p	1	@[redacted] @[redacted] @[redacted] AWESOME! Let's find some time to connect, want to put aside $ now. Got time on Groundhog day?
r		I like! @[redacted]: Everyone Round the Camp Fire – Learning Comes First in New School Design http://t.co/UZmGiolK
r		Let's talk summer publishing camp!!!! @[redacted] iBooks Author. http://t.co/BxIKlukd #tsdr2j
r		RT @[redacted]: 12 Reasons You Will Be a Better Leader this Year http://t.co/dKPefhz3
r		RT @[redacted]: SETH GODIN: If You're an Average Worker, You're Going Straight to The Bottom http://t.co/Y5GvOxgU
s		I just ousted @[redacted]as the mayor of Sports Station on @[redacted]! http://t.co/qdZqHuQA
s		Hanging with the coaches! (@ PourHouse Bar and Grill) http://t.co/maSofJad
p		Working with 11th grade English teachers - curriculum mapping. #tsdr2j http://t.co/McoQYOVg
s		I just ousted Amelia C. as the mayor of Goodtimes Burgers on @[redacted]! http://t.co/juZjCwxL
s		I just unlocked the "Super Mayor" badge on @[redacted]! http://t.co/cFeWAPwt
s		I just unlocked the "Flame Broiled" badge on @[redacted]! Cheeseburgers all around! http://t.co/txDq7rko
r		DAISYOffersaLiteracy Revolution http://t.co/L0MdZs3d @[redacted] @[redacted]
r		RT @[redacted]: Five Resolutions for Aspiring Leaders http://t.co/9LHwxJsv
r		RT @[redacted]: I don't like computer grading of writing. But I do like students writing more. Tricky issue. http://t.co/HOEhSitx #tsdr2j
r		RT @[redacted]: Doing Internet Research at the Elementary Level	Edutopia http://t.co/0sC6ljiC #tsdr2j
r		Thanks - a good resoUrce! RT @[redacted]: "@[redacted]: The Intention and Vision Behind Math Common Core via @[redacted] http://t.co/YqM77Uo8
r		RT @[redacted] RT Why Differentiation is a Dirty Word http://t.co/dW49YBE7 #artsed #edchat #spedchat #musedchat #musiced #tsdr2j
s	1	@[redacted] I totally AGREE!!!!!!
s		Going to Chicago http://t.co/NhoiWxjn
r		10 Important Points to Keep in Mind When Addressing a Global Audience http://t.co/XnDeRG6c awesome!
q	1	@[redacted] - what time is #musedchat?
s		I just ousted Jeannine G. as the mayor of Walgreens on @[redacted]! http://t.co/kENIOt5c
r		iOS Math Apps by Teachers http://t.co/7evBh14X
s		I just unlocked the "Ziggy's Wagon" badge on @[redacted]! http://t.co/rfNvkVAp
s		I just unlocked the "Fried Check-in" badge on @[redacted]! Bring on the grease! http://t.co/gBQYlUx6
s		I just ousted Ashley F. as the mayor of Chipotle Mexican Grill on @[redacted]! http://t.co/CIBgmeIi
p		Looking forward to a great day visiting classrooms! (@ Ferguson High School) http://t.co/uZCbTI2A
r		Thirty ideas from people under 30: The Social Media Stars http://t.co/YEgkkcjn
r		New Details Surface About Common Core Assessments http://t.co/502nmDvJ #tsdr2j #edchat
s		I'm at Garfield Elementary (Loveland) http://t.co/AJWnxA97
r		SchoolBook: What Makes a Good Teacher? Ask a Student http://t.co/ZOFzeTb8 via @[redacted]
s		RT @[redacted]: BRONCOS MOTIVADOS!!!
s		I just unlocked the "On Location" badge on @[redacted]! http://t.co/K4wU6Hr5
s		Camle board meeting! (@ Otho Stuart Middle School) http://t.co/PEAddgwc
s		I just unlocked the "Century Club" badge on @[redacted]! http://t.co/ZF4gsLyP

r		Great Post! Things I Want My Future Principal to Read: Old School or Bold School? http://t.co/q6NjE05K via @[redacted]#tsdr2j
r		U.S. Army Reserve center coming to Loveland -$13 M http://t.co/OIKev4bA
s		@[redacted] is that a [redacted] from the alternate universe?
r		Students of Virtual Schools Are Lagging in Proficiency http://t.co/eWC9ER7e via @[redacted]
r		A New Year's Goal: Stop Giving So Much Homework http://t.co/Bcs6YmZA
r		Five Steps to Widening the College Pipeline for African American and Latino Students http://t.co/vgB6e0tb #tsdr2j @[redacted]
r		RT @[redacted]: Big Study Links Good Teachers to Lasting Gain: http://t.co/yUF33csz #tsdr2j
r		RT @[redacted]: For-Profit Companies Getting Big Slice of Public Ed Pie, With Mixed Results: http://t.co/tcQaEENY
r		Curriculum Matters: As Senator, Santorum Waded Into Debate on Teaching Evolution http://t.co/JjkKr8Iv via @[redacted]

Participant 5 – Katherine

Cat	Dia	Text
r		RT @[redacted]: What a group of Texas supts want for young people there ..a vision for today http://t.co/U8bqQ5Ow
r		Super refraction- "new" scientific explanation 4 sinking of the Titanic & delay in rescue assistance http://t.co/yOvjaUUb via Smithsonian
r		What a group of Texas supts want for young people there ..a vision for today http://t.co/U8bqQ5Ow
r		A nice pass at the NBA Celebrity game game .. Checking out @[redacted] http://t.co/qNwiilMc
r		The US House scraps NCLB as it has been ...now onto the Senate? From @[redacted] news http://t.co/Cbb4Yo4o
r		Chicago to open "6-year" high schl / associate's degree programs http://t.co/NdWFvlPw
r		Using Kinect as a learning tool http://t.co/aan7FtC2
r		Toddler tooth decay up 1st time in 40 years - constant snacking, juice, bottled water at root cause http://t.co/Awv26fCb via the NYT
r		The periodic table table by Theodore Gray out of Wolfram - great vid too http://t.co/tKpr39WN from http://t.co/EcpnGvpo #sciedchat
r	1	@[redacted] @[redacted] thanks for sharing Tx pushback on testing - here's a fav "take no prisoners" supt fr Mi @[redacted] http://t.co/dgNTZ0l5
r		Reading RT @[redacted] still thinking abt #educon http://t.co/mwMlXvP6 thanks again @[redacted] @[redacted] for giving me lots to think abt
r	1	@[redacted] John Hunter @[redacted], amazing man who accomplishes extraordinary play w/children in his work -his "gesture" is a gift
p	1	@[redacted] @[redacted] @[redacted] @[redacted] John Hunter is a wonderful educator who does extraordinary work W children -a gift to watch
r	1	@[redacted] here you go http://t.co/WN5JKFPU
s		A bit of winter on the distant Blue Ridge http://t.co/3M95bLu8
r	1	@[redacted] "evaluating teachers & quarterbacks" on NY tcher formula from physics educator and colleague @[redacted] http://t.co/9bxygtVt
s	1	@tperran absolutely no pun :) just the facts
r		The periodic table table by Theodore Gray out of Wolfram - great vid too http://t.co/tKpr39WN from http://t.co/EcpnGvpo #sciedchat
r		Toddler tooth decay up 1st time in 40 years - constant snacking, juice, bottled water at root cause http://t.co/Awv26fCb via the NYT
s	1	@[redacted] @[redacted] interesting idea . Or food colored mash potatoes - ?
r		@[redacted] and lots of Tx supts starting 2 push back - here's another great public letter http://t.co/5CTdMMVS
p		@[redacted] as the state Ed commissioner for Tx recently said to supts down there "what's happened w testing is a perversion"
p		RT @[redacted] do people prefer different colors of food? #howwouldyoutestit #ACPSScience
r		Worth watching! The power of skype 4 homebound : a fab doc vid by elem kids RT @[redacted] http://t.co/CYSd607d
s	1	@[redacted] it is a lovely walk ... Thank you for being of such fab support to @[redacted] - she's just wonderful!
s	1	@[redacted] yep- weather a mess - no .. we had 70s a week ago- flowering trees blooming and daffodils ... etc
s	1	@[redacted] love your bridge avatar... read the Great Bridge last summer after walking across the BB with my son and friends
s	1	@[redacted] it's a beautiful light snow here but roads are covered and slick so we are out today- after a warm February!
p	1	@[redacted] snow in Va today- 1st school closure this year! Hope all is well in Utah.
s		Quite a little snow storm here in the hollow on March 5 http://t.co/7drNNWZi
s	1	@[redacted] yep- and wampus cat ... :) a creature of the swamps in the low country - mythical
r		a failure of math formula RT @[redacted] Why Value-Added is a Statistical Failure http://t.co/cWTrMCbd… #stopbashingteachers #edchat
r		dictionary of Regional English for the US -glad 2 see a page devoted to 1 of my childhood words "wampus" http://t.co/dEbYPFOx at Smithsonian
s	1	@[redacted] thnx for RTs Eric - snow today?
s		Love the colored pencil fence at http://t.co/EcpnGvpo http://t.co/dEbYPFOx
r		Where the Books Are ... http://t.co/Hew36zAZ from the Learning Blog of the NYT
r		WSJ reports signs of economic turn around strengthening - auto industry a key indicator http://t.co/0Ub4R1xb
r		International economists plot role of US govt fiscal austerity in economic recoveries of 2001 and 2009 - http://t.co/Ug1R1zcl via the NYT

r			reading RT @[redacted]: I am becoming a Special Ed poet. http://t.co/4CjCxZzh
r			@[redacted] @[redacted] @[redacted] @[redacted] @[redacted] @[redacted] @[redacted] value of tching kids 2 code http://t.co/M5eFuKuT
r			. @[redacted] challenge your thinking , challenge your media, challenge your teaching http://t.co/UrjyVLmM
p			We are a gesture of great teachers- b/c of them we've ppl who explore space, write novels, fix plumbing & keep us well - #stopteacherbashing
r			to know more abt Breaking Traditions international virtual conf we're co-sponsoring here's info http://t.co/MwuEbGsH or ask @[redacted]
r			The egregious decimation of arts, music, physical ed, library staff continues in districts across U.S. for 2012-13 http://t.co/e0NNKwHC
r			keep going back 2 this post .." Why the (_ noun _) won't save/revolutionize education" by @[redacted] at Gen Yes blog http://t.co/ewvA9QzL
r			On Love and Infrastructure - a post that should go viral by @[redacted] http://t.co/6aXEu8KW
s		1	@[redacted] I like this one especially "great leaders love blank sheets of paper" RT @[redacted]: I like this! http://t.co/bb7gEKu1
r			Gen STEM: Girl Scouts research considers what girls think abt science, tech, engineering, & math http://t.co/LkdEhqTn via Gen Yes blog
p		1	@[redacted] America needs a DI curriculum ... :) #acps #vanmeter
p			Destination Imagination: Creativity is a force to be reckoned with .. Kids w such passionate intensity are sure to invent our future
r			The Diane Rehm show on teacher evaluation ... an interesting panel - and link to full transcript http://t.co/bm3bnEmy
s		1	@[redacted] @[redacted] such a beautiful light chill, sun, unfurling of the next season is in the air ...
s			love the unfurling of the daffs RT @[redacted]: Gorgeous! Here too :) http://t.co/Q7V44BvR
s			Spring unfolds http://t.co/nTj6g7pt
p		1	@[redacted] video lecture is old news whether delivered via TV in the 20th c or Kahn YT in the 21st - tech may change but that's abt it
r			Rising stars at DI - non- competitive, creative designers at work @[redacted] schl http://t.co/tA3KajPy
r			All girls team has great vehicle front-end loader DI solution http://t.co/Fch2ocvb
r			Assembly required .. A DI challenge for an all girl middle/high schl team http://t.co/LPpzFXPp
r			What if school was more like Destination Imagination? Enjoying the passion- driven teams at work on a Saturday http://t.co/IUdiWARf
p		1	@[redacted] learning is not a 1-day 4 choice 1-right answer, high stakes test- learning is multi-dimensional, cumulative process
p		1	@[redacted] @[redacted] delighted to be w/CAAR! I'm off to Destination Imagination competition at WAHS - thank you for your support!
r			Review of Gamestorming ... the book - Design Thinking @ Haas http://t.co/P5dcYxbu
r			what March brings to the night sky .... the ultimate space for learning & feeling a "pre- Copernican" POV via the NYT http://t.co/3Gsu0kQq
p			@[redacted] fab -#ccglobal likes weather :) @[redacted] @[redacted] @[redacted] @[redacted] @[redacted] @[redacted] @[redacted]
r			.@ [redacted] on engagement spaces -not listening places RT @[redacted]: #DML2012- Museums as Exper Places #academics http://t.co/2EbRWAwK
r			MT @[redacted]: Hi everyone at international #teachmeet! lking 4 classes interested in collab on int'l proj https://t.co/GZdjfzk1 #ccglobal
r			Tim Brown on "granting permission to innovate" http://t.co/72HaaBIr in the HBR
s		1	@[redacted] fab news !! that;s great to hear abt teacher of the year ...
s		1	@[redacted] You're invited! Breaking Traditions: free intl. virtual conf: Albemarle Schls, Glasser Inst. http://t.co/MwuEbGsH a proposal?
s		1	@[redacted] Tom - come join us ... and break tradition #edchat
r			RT @[redacted]: Sad story of real life damage in NY w/ publication of "teacher ratings" http://t.co/jjTTfADI " #Edchat #cpchat #suptchat
s		1	@[redacted] thanks for that Joe- I learn from our colleagues in here all the time ...
r			Bach, the foot piano, performance art, and movement design - a metaphor for what makes learning joyful! http://t.co/FHCzhgVH
r			RT @[redacted]: Learning spaces #edchat @[redacted] @[redacted] http://t.co/5BvxdVZN
s		1	@[redacted] oh my .. But a mild season right? You need to come savor a Va spring ..
s			Perfectly periwinkle http://t.co/pTPRHXyD
r			Seuss wiki resources constructed by @[redacted] for #seussday http://t.co/rzy0LgVV
r			A few #seussday resources http://t.co/BZpXlawp
r			Murray Hi- a Glasser Quality Schl will collab a virtual international conf 4/13/14- looking for presenter proposals

		http://t.co/tagkFDzT
r		Breaking Traditions: free international virtual conf: Albemarle Schls, Murray Hi, Glasser Insti collab http://t.co/MwuEbGsH 4/13/14 #nwp
r		Virginia: 7th wealthiest state in the nation, 35th in per pupil funding Va Pilot op ed http://t.co/qzDPlTiv thnx to @[redacted]
r		making things - frm 2-D objects to 3-D story art by Ruggero Asnago http://t.co/v2qOCvDi design blog @[redacted] @[redacted] #dml2012 #nwp
s	1	@[redacted] how is the new school?
s	1	@[redacted] good morning - John- hope all is well in Iowa - what's new in #vanmeter?
r		succinct and on target RT @[redacted]: Right of Refusal: http://t.co/oLZ2xRW1 About teachers refusing to use tech #edchat #edtech
r		Bullying doesn't just affect a child, it affects the whole schls' culture & performance http://t.co/1naAxpa1 thnx 2 research from @[redacted]
r		Lady GaGa shares abt her new anti-bullying foundation Born This Way http://t.co/or1pZ3Rc via The NYT
s	1	@[redacted] fox in socks is a good one to twist up the words ....
r		be on the lookout for today's #innochat transcript - great discussion abt infusing ed w/ disruptive DNA http://t.co/45PuOsck
s	1	@[redacted] lucky lady... tell him about our design work -
r		How teaching up can address "wounds of underestimation.. (@[redacted] " quoted in Teach Up 4 Excellence http://t.co/fr7cyYIM #edleadership
r		If you are not following #DML2012, it's worth your time- great thinking and resources http://t.co/BNe0boNe
s	1	@[redacted] where did you find that amazing signage?
r		looking over the ISTE computational thinking toolkit http://t.co/TjmYu2DY
s	1	@[redacted] that's beautiful and love the little creature perched so delicately on the daffodil ...
r		Remember blocks? Duke engineering's ideas 4 elem cross-grade graphing and engineering projects http://t.co/47T6NNrS @[redacted]
s	1	@[redacted] @[redacted] @[redacted] red fish blue fish ...
s		Sunshine from the hollow .. The art of photosynthesis http://t.co/ToOJ4gzY
r		Breaking Tradition - a virtual conf sponsored by Albemarle's Murray High - pls consider our call for proposals http://t.co/tagkFDzT
r		thnx for sharing RT @[redacted]: Seth Godin Blog: Ashamed to not know http://t.co/KTCVFXvk via @[redacted]