

UNIVERSITY OF OKLAHOMA

GRADUATE COLLEGE

SOCIAL NETWORKING FOR ADDRESSING TEACHER ISOLATION: A  
PHENOMENOGRAPHIC INQUIRY

A DISSERTATION

SUBMITTED TO THE GRADUATE FACULTY

in partial fulfillment of the requirements for the

Degree of

DOCTOR OF PHILOSOPHY

By

NICOLE SUZANNE WATKINS

Norman, Oklahoma

2013

SOCIAL NETWORKING FOR ADDRESSING TEACHER ISOLATION: A  
PHENOMENOGRAPHIC INQUIRY

A DISSERTATION APPROVED FOR THE  
DEPARTMENT OF EDUCATIONAL LEADERSHIP AND POLICY STUDIES

BY

---

Dr. Gregg Garn, Chair

---

Dr. Leslie Williams, Co-Chair

---

Dr. Courtney Vaughn

---

Dr. Jeffrey Maiden

---

Dr. Sara Beach



## Dedication

This dissertation is dedicated to my family, who has whole-heartedly supported me throughout my life. Words of support, babysitting, guidance, and lots of phone calls throughout this process have been appreciated more than you know.

I am dedicating this dissertation to my father, Virgil Tipton, and my mother, Penny Tipton, who instilled in me the value of education from a young age. I would not be where I am today without your support and love. You are both an inspiration professionally and personally.

I am also dedicating this dissertation to my son, Zane, who is my reason for this degree. I will always be your support as you have always been my motivation. You bring happiness to my life every day and I am so thankful to get to share this special time with you. I will now start to make up for the time I've spent writing! May all your dreams come true! You are my dream come true!

## **Acknowledgements**

It is important to acknowledge that a dissertation requires the support of so many; I wish to pay tribute to a few of those supportive colleagues, friends, and committee members. I wish to thank Dr. Gregg Garn, my chair and Dr. Leslie Williams, my co-chair for their assistance and guidance. I am also truly appreciative of Dr. Courtney Vaughn who spent countless hours providing critical support. My committee members Dr. Jeffrey Maiden and Dr. Sally Beach also gave me guidance and assistance in this journey. In addition, Dr. Linda Atkinson played a special role as a mentor and colleague.

I have also formed a network of support. My “PhD Girls,” Brook Meiller and Shelly Ellis were the ultimate cheerleaders and support system throughout my doctoral program. I appreciate them talking through the process, proofreading, and meeting for support. I am blessed to have you in my lives both personally and professionally. In addition, I would like to acknowledge and thank Scott Watkins for his hours of work on the social network development.

I would also like to acknowledge my friends, family, and colleagues. The K20 Center Staff past and present is a family of incredible educators who have provided support in various ways throughout my process as a doctoral student. I would like to thank my friends and family for their encouragement and personal support throughout my years in the doctoral program. My family has provided meaningful support in many forms throughout the process and I am truly grateful.

## Table of Contents

Acknowledgements .....	iv
List of Tables .....	ix
List of Figures.....	x
CHAPTER 1 .....	1
Introduction .....	1
Background of Problem.....	2
Problem.....	5
Context for the Study.....	7
Purpose .....	8
Significance .....	9
Intended Implications .....	10
Definition of Terms .....	11
CHAPTER 2 .....	14
Theoretical Framework and Literature Review.....	14
Variation Theory .....	14
Review of Literature.....	16
Structures that Reduce Isolation.....	17
Community of practice .....	18
Professional learning communities.....	20
Networked learning communities.....	21
Affinity spaces.....	23
Common Characteristics of Learning Structures .....	26

Barriers to Change Systems.....	29
Shift in Learning Context .....	30
Opportunistic Movement.....	32
Definition of the Phenomenon – Informal Social Media Network .....	35
Recent Empirical Studies Focused on Social Networking .....	35
Informal Learning as Discourse .....	36
Purposeful Collaboration.....	37
Sense of Community .....	39
Accessibility .....	41
Summary.....	42
CHAPTER 3.....	44
Methodology.....	44
Overview of Methodology .....	45
Phenomenology .....	47
Ethnography .....	48
Online Ethnography.....	49
Phenomenography .....	50
Cultural Context .....	54
Participants and Context.....	55
Data Collection .....	56
Field notes on participant observation.....	57
Interviews .....	60
Researcher Positionality .....	63

Data Interpretation.....	64
Field notes interpretations .....	65
Interview interpretations.....	66
Integration.....	72
Quality.....	73
Summary.....	77
CHAPTER 4 .....	78
Description of Culture .....	78
Individual Textural Descriptions as Vignettes .....	83
The Power Contributors .....	83
The Casual Consumers. ....	85
Lurkers.....	88
Summary.....	90
CHAPTER 5 .....	91
Findings .....	91
Category 1: Affinity .....	92
Category 2: Informal Professional Growth .....	96
Category 3: Outside Expertise.....	100
Category 4: Discourse .....	105
Category 5: Collaboration .....	110
Relationships Among the Categories of Description .....	116
Affinity and Professional Growth .....	118
Professional Growth and Outside Expertise.....	119

Outside Expertise and Discourse.....	119
Discourse and Collaboration. ....	120
Summary.....	121
CHAPTER 6.....	123
Final Analysis and Recommendations .....	123
Outcome Space .....	124
Addressing the Research Question .....	125
Interpretations of Findings in Relation to Literature .....	131
Shared vision .....	131
Informal professional growth .....	132
Outside Expertise.....	132
Discourse .....	133
Collaboration .....	135
Implications of Study .....	136
Implications for Methodology .....	137
Implications for Social Network as Meta-PLC Development.....	138
Implications for Practitioners .....	139
Implications for School Leaders.....	140
Recommendations for Future Research.....	141
Summary.....	144
References .....	146
Appendix A: Institutional Review Board .....	1

## **List of Tables**

Table 1: A Comparison of Phenomenology, Ethnography, and Phenomenography.....	52
Table 2: Collection Strategies for Data Collection.....	62
Table 3: Lived Experiences of an Online Social Network Expressed as Categories of Description .....	92

## List of Figures

Figure 1: Map made with Leximacer software to illustrate the relationship of the data. ....	72
Figure 2: Standard user participation (Nielson, 2006). ....	82
Figure 3: Standard content contributions (Nielson, 2006) .....	82
Figure 4: Hierarchical categories of description with relationships .....	116
Figure 5: The collective lived reality of the participants.....	125

# **CHAPTER 1**

## **Introduction**

Researchers are increasingly interested in systemic change models for schools. Currently, developing communities of learners is a popular reform effort used to move teachers toward a desired change. Research indicates a synergistic relationship between professional learning community (PLC) development and technology integration, (Dexter, Seashore, & Anderson, 2002; Williams, Atkinson, Cate & O'Hair, 2008) and these components have been found to be mutually influential in the support of whole school change and student success. However, some studies suggest that these reform efforts do not always meet individual needs of teachers (Talbert, 2010). Teachers are still isolated due to lack of communication and collaboration with colleagues as a result of a traditional organizational system that promotes individualism. Recent research points to affinity spaces as possible companions to networked professional learning communities where individual growth is sparked by participation in an environment where the goal is to serve the greater good; however, little research focuses on the contextual shift of informal learning online. The investment of billions of dollars in educational technology has yielded mixed results in terms of impact on teacher isolation. Given the recalcitrant effects of isolation and individualism and the barriers to organizational change, the purpose of this study is to put theory into practice by creating a social network for connecting in-service teachers, pre-service teachers and university faculty on one informal platform.

Online social networks are quickly becoming a mainstream form of communication and collaboration. Within the context of professional learning, little

research has focused on social networking as the source of delivery and development for overcoming isolation. Within this study, interviews with members of the online community provide insight into the success in delivery and development of an online professional space using a social network. The data collected provides a deeper look at how the culture of an online professional space can be impacted by format, participants and purpose. This study contributes to the relationship of professional learning communities with online professional networks. It provides insight into the contextual impact of social media on teacher isolation.

### **Background of Problem**

Teachers have long faced the perils of isolation. According to Elmore (2000), “teaching is isolated work” (p. 6) and “collective work is the exception” (p. 35). While hallways are bustling with students, teachers sit alone in their classrooms with minimal influence from others or on their colleagues. Bakkenes, Brabander and Imants (1999) describe this minimal influence as individual isolation. While several miles away, on other campuses scattered across the district, school leaders sit alone in their offices with minimal influence from others or on their colleagues. This organizational isolation (Bakkenes et al., 1999) is yet another type of exposure to isolation teachers and districts face.

These two levels of isolation, organizational and individual teacher (Bakkenes et al., 1999), are a result of the industrial model of schooling where social structure and capacity dominate. Leonard and Leonard (2003) recognize that “historically schools have been metaphorically conceptualized as knowledge-producing factories with teachers being the producers and students being the product” (p. 384). Lortie (1975)

emphasizes in a historical study of school organization that schools were designed to isolate and insulate teachers. Isolation is promoted by organizational structures of grades and content departments as well as layout of the school (Gamoran, Gunter, & Williams 2005; Hargreaves, Earl, Moore, & Manning, 2001; McLaughlin & Talbert, 2001). Schools are still organized by content specific or grade level groups and results are given to individual children for individual work. Glickman (2003) reiterates these claims in his reference to classrooms as “one room school houses” (p. 106). Fullan’s (2001) insight reveals the school’s physical organization of a collection of disconnected, self-contained classrooms reduces the opportunity for teachers to interact and work together and is restrictive because it limits learning to the experiences and knowledge base of each individual teacher.

Individual isolation is inherent within the profession. The pervasiveness of isolation in teachers permeates current educational literature (Bakkenes et al., 1999; Elmore, 2000; Powell, Hochstrasser Fickel, Chesbro, & Box, 2010). Nias, Southworth, and Yedmans (1989) recognize the isolation felt by individual teachers when housed in individual classrooms as situational constraints of the building. In a study on school communication, Bakkenes et al. (1999) reveal that teacher isolation partially results from behaviors of the individual teacher and the hierarchical communication network developed within the school. Teachers are isolated due to lack of communication and collaboration with colleagues as a result of a traditional organizational system that promotes individualism at pre-service, in-service and faculty levels; and they are restricted to their own classrooms with their own students and contact with peers is minimal unless purposefully pursued. According to Elmore (2000), this structure is

meant to buffer outside scrutiny, interference, or disruption as teachers “work in isolated classrooms, under highly uncertain conditions to manage the technical core” (p. 6). Elmore (2000) also suggests that “loose-coupling” explains why “manifestly successful instructional practices that grow out of research or exemplary practice never take root in more than a small proportion of classrooms and schools” (Cuban, 1984; Cuban, 1990; Tyack & Cuban 1995; Elmore, 1996) (as cited by Elmore, 2000, p. 6). The “recalcitrant effects of isolationism” (Powell et al., 2010, p.163) result in high teacher turnover, university faculty disconnect (ivory tower) and unsuccessful penetration of new teachers into the culture of the profession.

Conversely, Pugach and Johnson (1995) concluded that collaborative schools are more likely to become communities of learners. Collaboration is recognized as the most significant factor in the progression towards a professional learning community to reduce teacher isolation (Dufour & Eaker, 1998). Structures for organizing change to promote collaboration provide the platform for both scholars and practitioners to shift from a focus on teaching to a focus on learning (Dufour, Eaker, & Dufour, 2005). Senge (1995) recommended that organizations capitalize on the interconnectedness of people in order to promote change. However, barriers such as time, (Dufour & Eaker, 1998; Glickman, 2003; Hargreaves et al., 2001; Hord, 1997, 2009) proximity, (Fullan, 2001; Gamoran et al., 2005; Glickman, 2003; Hargreaves et al., 2001; Lortie, 1975; McLaughlin & Talbert, 2001) individual goals (Lortie, 1975; Powell et al., 2010; Williams et al., 2001) and isolation (Dufour & Eaker, 1998; Glickman, 2003; Hargreaves et al., 2001; McLaughlin & Talbert, 2001) often still hinder collaboration and communication of pre-service teachers, in-service teachers and faculty. Sirkin,

Keenan, and Jackson (2005) advise that change initiatives often fail due to lack of communication and interconnectivity.

Collaboration, in its early stages, can center on technology in a professional learning community (Dufour, 2004). Research has shown that technology integration promotes collaboration (Atkinson, 2005). van Zyl (2009) acknowledges that the Internet and social media can enhance social interaction, overcome boundaries, and increase efficiency. Emphasizing this, technology is said to enhance organizational change (Martinsons & Chong, 1999). Jue, Marr, and Kassotakis (2010) indicate that the Internet and more specifically, social media is aimed at enabling relationships and collaboration. Technology is a catalyst for professional learning communities (Neilson, 2008; Williams, 2006) but technology can also serve as the platform for support of a change system.

## **Problem**

Clearly, a tradition of teacher isolation and individualism often serve as barriers to collaboration (Dufour & Eaker, 1998; Glickman, 2003; Hargreaves et al., 2001; McLaughlin & Talbert, 2001). Although communities of practice and professional learning communities are said to promote collaboration, Talbert (2010) indicates the current change systems do not always motivate and support gradual change in teacher beliefs and practices in various schools as they do not address different individual needs of teachers who are at various stages of development. The problem, then, is educators as a group have their specific and individual needs go unaddressed through traditional methods of change systems.

A source of frustration for the education community is recognizing that teacher collaboration is the most significant factor in the progression towards a systemic change initiative to reduce teacher isolation (Dufour & Eaker, 1998) yet there is evidence of a struggle to overcome barriers such as time, proximity, individual goals, and isolation with traditional forms of learning communities. Talbert (2010), in a longitudinal study, found that learning communities often backfire when key conditions are not present. Among these key components, Talbert (2010) recognizes the need for teacher participation in professional networks. Such networks can be in the form of Facebook, Classroom 2.0, Edmodo, and Boomrrang.

Because online communities defy the barriers of time and space, some newer studies are pointing to online networks in various formats for addressing needs and promoting collaboration of the next generation of employees. King (2011) explains “the potential of blending social media technologies, with informal and situated learning, opens new dimensions of professional learning possibilities for many fields” (p. 386). According to Meister and Willyerd (2010), by 2014 “Millenials (born between 1977-1997) will make up 47% of the workforce” (p. 36) and this generation relies upon the network they have collected on Facebook to get their work finished. McPherson, Smith-Lovin and Cook in a 2001 study of social networking concluded that most social networks are homophilious and mirror the sociological concept of “birds of a feather” (p. 417). Within a different context of professional norms and motivation, this type of network has shown to promote strategic connections outside their usual contacts (DiMicco, Millen, Geyer, Dugan, Brownholtz, & Muller, 2008). An online professional social community extends beyond the local school or district and provides

the opportunity for sharing best practices, asking questions, modeling strategies, and collaborating on the development of authentic learning experiences “to form webs of personal relationships” (Rheingold, 1993, p. 3).

Within the context of developing a network of professional educators, little research focuses upon the relationship of newer web 2.0 resources, specifically, social media, on professional learning to address various stages of development and provide additional support for overcoming isolation. Therefore, there is a need for further research in social networking as a platform for overcoming teacher isolation that involves variation theory, where differences are used to highlight a range of ways of viewing a phenomenon (Marton & Booth, 1997). This phenomenographical study is designed to examine the lived experiences of teachers in an effort to determine the ways that the perils of isolation are minimized in the context of an online social network.

### **Context for the Study**

The Web 2.0 revolution, promoting interactions and collaboration, has not yet found a platform for knowledge dissemination that can fulfill the needs of professional educators to stay abreast of the newest research and best practices individually while continuing to develop as a professional networked learning community. Relatively little has been known about how to develop such online intentional communities to supplement change initiatives (Wenger, McDermott, & Snyder, 2002). However, online social networks are quickly becoming a mainstream form of communication and collaboration. Selwyn, in a 2009 study recognized that “over the past five years social networking sites (SNSs) have become one of the most prominent genres of social software, popularized by the *MySpace* and *Facebook* applications that now each boast

hundreds of millions of users.” Social network sites allow participants to “enter new networks of collaborative learning” often situated around common interests (Selwyn, 2009, p. 4). Barab et al., boast interactions at both an individual (subject) and social (community) levels as significant in their 2004 study. Barab, Kling, and Gray in 2004 found that “with respect to fostering learning, many current educators are interested in creating new intentional online communities that support learning,” and the “intentionality is often linked to a professional development effort” (p. 4). The platform used in this study provides opportunity for informal discourse providing outside expertise and dissemination of knowledge for in-service, pre-service and faculty. The context for this study is a closed professional social network custom designed for individual interaction within grade level or content specific pre-formed groups. Features include profiles, threaded conversations, searchable content, and various media uploads/downloads and were designed to alleviate the negative impact of isolation.

## **Purpose**

The purpose of this study is to explore a custom social network for connecting in-service teachers, pre-service teachers and university faculty on one informal platform. This perspective seeking study will capture the perceived experiences of teachers within a social network despite barriers such as time, isolation, and proximity. This exploratory study will seek to learn more about perspectives of these online networked communities to better understand their possibilities for overcoming isolation. This study will collect valuable information for those interested in providing teachers a new level of support in collaboration and growth on a professional level through a

phenomenographical investigation using both participant observation and interviewing techniques. It will identify ways to develop, strengthen, and extend professional learning communities beyond the constraints of time and place. The potential for these factors to minimize isolation stands to reason why the question was selected. Thus, this study asks and intends to answer the following question:

*What are the lived experiences of teachers participating in an online meta-professional learning community culture designed to mitigate isolation?*

### **Significance**

This study is significant on multiple levels. First, using this unconventional method for an online study provides a premise for acknowledging contextual impact on the data while adhering to paradigms set forth for specific research methodologies. Second, this research will contribute to the understanding of social networks as used in a professional setting for individual informal learning. In addition, it also provides significant considerations for practitioners, undergraduate programs and policymakers.

Using phenomenography as a methodology to approach a study with an online context offers significance in that recent publications on online communities use more traditional methods such as case study, ethnography, or phenomenology. Opportunities are afforded to address both shared experiences and the impact of the context itself by using phenomenography as the chosen method. Other methods provide limited access due to being bound to particular paradigms that don't always include the relationship between the research method and the situation. Using an interpretive paradigm and phenomenography for online studies provides insight into a parallel design which facilitates deeper probing into the subtleties of context as well as the lived experiences

of the participants. Therefore, this alternative to traditional methods provides a progressive research approach for understanding online communities.

In addition, this phenomenographical inquiry contributes to an understanding of teacher perceptions on the use of social networking to enhance systemic change efforts. A number of researches call for greater research linking formal organizational structures with online opportunities (Moore, 2008; Smith, 2009; Talbert, 2010; van Zyl, 2008; Zhang, 2010). The study contributes to the literature by addressing the gaps for supplementing a change effort through opportunities afforded through technology. A detailed portrait of a professional social network and its unique culture will be another contribution to online ethnographical methodology. This portrait could aid in the understanding of adult perceptions to inform emerging online learning platforms.

This study also provides significant considerations for practitioners, undergraduate programs and policymakers. Teachers and leaders should utilize the findings of this study to guide decisions regarding social networks as learning tools for addressing barriers of isolation and possibilities for professional development opportunities. Undergraduate programs should reflect on the findings of this study when preparing educators, particularly for providing alternative mentorships to new teachers. It should guide policy makers in acknowledging new untapped resources for informal teacher learning, mentorships, and accessibility.

### **Intended Implications**

I will follow the professional support within an online culture through the phenomenographical design of this study where culture of the online community is established and from this setting, the perspectives that emerge through the interactions

that continually evolve within the online community will be determined through the interview process. Talbert (2010) recognizes the core challenge in systemic change initiatives that aim to develop professional learning communities among others includes “access to a wide range of learning resources for individuals and the group” (p. 557). A deeper understanding of social networking as a catalyst for networked professional learning communities and the impact of various backgrounds of participants on the development of the community could result in updated theories on the potential of social networking. This project provides insight into the perspectives of participants in the online social network culture and the impact and influence of the network as a supplemental tool.

### **Definition of Terms**

1. Access: the user’s ability to obtain, manipulate, and share data via a social media tool (DiMicco et al., 2008)
2. Affinity Space: an online space with social affiliation for a common endeavor, where participants can contribute in multiple ways to collective learning. There are eleven components of an affinity space as defined by Gee (2000)
3. Change: the process of transformation (Senge, 1990)
4. Communities of Practice: groups who share common interests and concerns, and who address these concerns through collaborative efforts and professional learning (Wenger, McDermott, & Snyder, 2002)
5. Faculty: an educator who teaches courses at the University level

6. Individualism: “constrained individualism arising from administrative or other situational constraints; strategic individualism as a calculated concentration of effort in response to the daily contingencies of the work environment; and elective individualism as a preferred way of working, a principled choice to work alone, all or some of the time (Hargreaves, 1994, p. 172)
7. Informal Learning: the wide variety of spontaneous, unofficial, impromptu ways people learn to actually do their jobs (Cross, 2007)
8. In-service: Educators currently working in schools
9. Isolation: the communication behavior of individual teachers and the links of interdependence among teachers (Forsyth & Hoy 1978; Miskel, McDonald, & Bloom, 1983; Zielinshi & Hoy, 1983 as cited by Bakkenes, Cornelis, & Imants, 1999)
10. Networked Learning Community: school-to-school learning communities and network to network learning communities
11. Outside Expertise: access to knowledge and ideas outside the community to prevent the community from becoming stagnant
12. Pre-service: undergraduate students participating in education courses
13. Professional Learning Community: A group of professionals linked by a common interest that fosters mutual cooperation, emotional support and personal or professional growth (Dufour and Eaker 1998)
14. Social media: a platform that allows users to collaborate in a common space, connect with one another (Kaplan & Haenlein, 2010) and distribute, access and create content within a specific network of participants (Jue et al., 2010).

15. Web 2.0: “New user-centric information infrastructure that emphasizes participation (e.g., creating, re-mixing) over presentation, that encourages focused conversation and short briefs (often written in a less technical, public vernacular) rather than traditional publication, and that facilitates innovative explorations, experimentations, and purposeful tinkering that often form the basis of a situated understanding emerging from action not passivity” (Brown, 2008).

## **CHAPTER 2**

### **Theoretical Framework and Literature Review**

As noted earlier, variation theory (Marton & Booth, 1997) serves as the theoretical framework to help guide this study. Due to the nature of this study and questions to be asked, I have chosen variation theory; however, another possible theory that may help explain the findings is social networking theory. Variation theory holds that I would expect the varying experiences of the phenomenon to discern a dense perception of the context of an online social network and variation in the perceptions of the network's contribution to overcoming isolation. As I collected and explored the data, the appropriate theory was used to guide the analysis process. Variation theory was the framework but it was informed by social media theory.

### **Variation Theory**

The Theory of Variation, (Marton & Booth, 1997) where critical features are identified in a new learning experience through a comparison with existing frameworks of knowledge and understanding, accounts for diversity in understanding or experiencing a phenomenon. Crotty (1998) suggests the theory should inform methodology by providing a context for the process and guide the logic and criteria (p. 3). Variation Theory guided in the development of the interview protocols and participant selection, therefore guiding the logic and criteria of the study. Phenomenography is excellently suited to variation theory because the two doctrines of phenomenography are the experience of variation and relevance to the participant (Marton & Booth, 1997). Pang (2003) describes phenomenographers [as those who] study both the variation among different ways of experiencing something as seen by the

researcher, and the variation among the critical aspects of the phenomenon itself as experienced by the learner” (p. 149). Pang goes on to describe the “shift in primary emphasis from questions concerning how different ways of experiencing something can be captured methodologically to theoretical questions about the nature of the differences” (p. 147).

There is no single way to experience or understand a phenomenon (Marton & Booth, 1997). There is considerable variation in people’s discernment. According to Marton and Booth (1997), phenomenography is founded on variation theory where differences are used to highlight a range of ways of viewing a phenomenon. This nondualist (Akerlind, 2005; Saljo, 1997) ontological perspective, where the researcher and participant are not independent and separate of each other, is reflected in the theory of variation. Variation theory could be interpreted as a form of post-structuralism in that it intends to present an alternative way of knowing. Salja (1997), interpreting Marton, deciphers phenomenography as “finding and delimiting variation in the ways of experiencing reality” (p. 175). Using the internal and external horizons for interpreting the variation while referencing the structure of awareness will aid in contextualizing the data within the margin, thematic field, and theme (Cope, 2004).

The main tenant of variation theory is creating an understanding of the varying ways of experiencing a phenomenon. Variation is a primary aspect in a learning environment. However, in order to understand which variations to use to approach the phenomenon, it is necessary to understand that varying ways of experiencing a phenomenon (Edwards, 2006). Therefore, seeking out the variation in experiencing a phenomenon is the first step in discovering ways to apply that information to a learning

environment. In this case, variation theory is used to uncover ways of experiencing social networking so that these understandings could be applicable to further developing a meta-professional learning community online. In using variation theory, one can discern critical aspects of the object of learning. By being conscious of the variation of certain aspects of the phenomenon while keeping other aspects invariant, a focal awareness is created which makes it possible to experience the object of learning (Marton & Pong, 2005, p. 164). Therefore, by identifying variation within the lived experiences of a social network, a broader context of participants provide the exploratory data needed to identify ways to encourage teachers to discern other aspects of the social networking experience. The social network can be structured to ensure teachers experience the variations of the social networking environment. Variation theory is about processes and will aid in guiding the understanding of the social network “becoming.”

## **Review of Literature**

This review of the literature outlines the development of the systemic change movement with a specific focus on communities of learners. The first section outlines structures that reduce isolation through the promotion of collaboration. Change models such as communities of practice, professional learning communities, networked communities, and affinity spaces are described and compared. The second part focuses on challenges of these movements. Without adequate support and structures, some systemic change initiatives have struggled to sustain. Although these movements are facilitated from a group level, individuals may not always be getting the formal support needed to make the changes and advances necessary to make the learning community

successful. The final piece emphasizes a shift towards informal learning and provides some perspective of the digital movement's impact on this shift. The opportunistic movement of Web 2.0 provides a shift to informal learning for growth and development in an online social network. Recent empirical research on social networking is reviewed for a greater understanding of its current use as a platform for learning. In addition, the conceptual network developed for the study was guided by the major factors identified in the literature. These works greatly influenced the research question in that it identifies a need for the integration of support and online opportunities.

### **Structures that Reduce Isolation**

In learning organizations, people are exposed to opportunities for individual growth and development within the accepted setting of a community. "In a democratic school it is important not only for the students to continue to learn and grow, but also for teachers and other members of the school community to learn and grow" (O'Hair, McLaughlin, & Reitzug, 2000, p. 117). In 2005, Rusch claims "people find personal commitment and a sense of community (Kofman & Senge, 1993) focused around a "felt need" (Leithwood et al., 1998, p. 248), have a high degree of efficacy about people and about the potential for changing the environment (Beer & Eisenstat, 1996), and assume a 'collective responsibility for school operations and improvement' (Byrk et al., 1999, p. 762)" (p. 85). According to Cook and Yanow (1993), organizational learning occurs through individual learners to achieve collective learning and shared meanings. The context influences the learning and can ultimately influence the organization (Cook & Yanow, 1993).

Schools and school districts are unique organizations with challenges in knowledge and growth. School reform efforts that “focus on teachers as individual practitioners has had little appreciable positive impact” (Powell, Hochstrasser, Fickel, Chesbro, & Box, 2010, p. 166). Over the past decade, there has been a shift away from a focus on individuals towards a social and cultural understanding of situated learning (Powell et al., 2010). The unruly effects of isolation and individualism have created a wave of interest in peer-to-peer community support for professional growth. This shift consists of moving from focusing on individualized segments of the organization to include the system as a whole in a network of collaborative connections (Daly, Moolenaar, Bolivar & Burke, 2010-2011). A number of school reform efforts are now structured in the community of practice concept (Little, Wenger) or professional learning communities concept (Dufour & Eaker, Hord, Huffman & Hipp, McLaughlin & Talbert, Stoll & Seashore Louis) for overcoming isolation and individualism for teachers and administrators. These system-wide approaches were found to promote cultures conducive to change which are seldom found within formal school systems (Rusch, 2005). Works of researchers suggest an approach to organizational change that connects networks of individuals (Fullan, 2005; Hargreaves & Fink, 2006; McLaughlin & Talbert, 2003).

**Community of practice.** A community of practice is one trend for systemic change. According to Wenger, McDermott, and Snyder (2002), communities of practice are “groups of people who share a concern, a set of problems, or a passion about a topic, and who deepen their knowledge and expertise in this area by interacting on an ongoing basis” (p. 4). Wenger (2000) believes that the success of an

organization is dependent upon the development of social learning systems and participation in broader learning systems. Gee (2007) agrees that communities of practice are an “important force in learning in the modern world” (p. 77) due to the shift promoted in organizational structures. The development of a community of practice reveals an evolution from traditional organizational structures. Buyesse, Sparkman, and Wesley (2003) view a community of practice as a way of transitioning from one of traditional linear relationship. In addition, the communities of practice model suggests a shift in view of researchers as “knowledge generators” and practitioners as “knowledge translators”(Pugach, 1999, p. 270).

A community of practice engages individuals, as members of a specialized group, to participate in community. Wenger et al., (2002) claims “the school is not the privileged locus of learning. It is not a self-contained, closed world in which students acquire knowledge to be applied outside, but a part of a broader learning system” (p. 167). Little (1993) reiterates this as she claims that teachers are not only leaders of classrooms but also members of a broader learning community. Wenger (2000) later suggests the practice of a community is active and involves everyone. Lewis, Koston, Quartley, and Adsit (2010-2011) suggest that within a community of practice, tacit knowledge is developed through informal and formal learning, mutual engagement, and collaboration as the community undergoes continual development. Unlike traditionally organized work groups within a community of practice, reciprocal relationships are present where learning is distributed among its members. Knowledge dissemination and best practices are shared through these communities of practice (Barry, 2007).

Communities of practice vary from traditional organizational structures in that membership is informal, where the emphasis is on relationship building, learning, and practice that revolve around formal and informal activities (Moore, 2008). Mitchell and Sackney (2001) suggest that there are “three vital capacities (that) must be developed to build learning communities: the personal, the interpersonal and the organizational.” These three levels that are addressed within a community of practice mirror the trends of isolation and individualism identified as barriers to collaboration.

**Professional learning communities.** Interconnecting communities of practice for the purpose of professional learning tighten the focus of a community. Under the umbrella of systemic change models is another strand of learning organization that focuses on professional practices and growth: professional learning communities. A professional learning community is an infrastructure that results in continuous school improvement (Hord, 1997). A professional learning community is an evolving strategy where teachers and administrators work collaboratively to share knowledge that will enhance their effectiveness as professionals for students’ benefit (Hord, 1997). The PLC concept is relatively new, growing out of the research of the 1990s on the restructuring of schools through an organizational approach.

Characteristics included as vital pieces of a professional learning community are shared values and vision, (Bolam, McMahon, Stoll, Thomas, & Wallace, 2005; Dufour, 2004; Ferger & Arruda, 2008; Hord, 1997) collaboration, (Bolam et al., 2005; Dufour & Eaker, 1998; Ferger & Arruda, 2008; Reichstetter, 2006; Stoll, Bolam, McMahon, Wallace, Thomas, 2006) inquiry, (Dufour, 2004; Ferger & Arruda, 2008; White & McIntosh, 2007) discourse, (Fullan, 2001; Leithwood, Lawrence, & Sharrett, 1998;

Newmann & Wehlege, 1995; O'Hair et al., 2000; O'Hair, Reitzug, Cate, Averso, Atkinson, Gentry, Garn, & Jean-Marie, 2005; Rusch, 2005) shared leadership, (Ferber & Arruda, 2008; Hord, 1997, Hargreaves & Fink, 2006; Mitchell & Sackney, 2006; Oliver & Hipp, 2006). A culture of collaboration with a shared purpose is formed with a firm foundation of professional discourse contributing to the development of a professional learning community (DuFour, 2004). Professional learning communities move from a focus on individuals to a focus on systemic approaches for addressing systemic change. The structures of a professional learning community are recognized as a possible solution for overcoming teacher isolation (Darling-Hammond, 1997; Dufour & Eaker, 1998; Dufour, 2004; Fullan, 2001; Hord, 1997, 2009; McLaughlin & Talbert, 2001; Newmann & Wehlege, 1997; O'Hair et al., 2005; Stoll & Seashore Louis, 2007; Williams, Atkinson, Cate, & O'Hair, 2008; Wood, 2007).

While restructuring an organization, building and sustaining a professional learning community can be difficult (Moller, 2006). This restructuring does not always improve instruction and student achievement (Supovitz, 2002). Structures for collaboration (DuFour, 2004; Talbert, 2010; White & McIntosh, 2007) and supportive leadership (DuFour, 2003; White & McIntosh, 2007) are addressed most often in the literature as necessary for professional learning community change initiatives. Talbert's 2010 article suggests creating learning resources through participation in professional networks as an additional key strategy.

**Networked learning communities.** Lieberman (2000) suggests networked learning communities bring teachers together to learn from one another and promote efficacy. Therefore, "extended knowledge systems" (Wenger et al., 2002) or

“networked learning communities” (Little, 2005 ) also provide opportunities to expand communities beyond normal boundaries of space while staying true to the foundations of a purposeful community. Little in 2005 contributes that networks may help professional educators accomplish together what they cannot accomplish on their own. Networks broaden the resources on which individual schools can draw, engage participants in shared problem-solving, and promote accomplishments through recognition and inspiration (Little, 2005). Byham in 2010 stated “most managers need to have their business networks extend outside of their work group, and even outside of their organization. The broader the reach of a network, the more knowledge and information one will be able to access when it is needed” (p. 67).

Byham in 2010 claimed “building a strong business network requires that a person avoid relying just on lunch partners. Associates need to think about who can help them be better in their jobs, who is ‘in the know’ and well connected to other knowledgeable contacts, and who can help them navigate roadblocks” (p. 67). According to McPherson, Smith-Lovin, and Cook (2001), people’s personal networks are identical with their own sociodemographic, behavioral, and intrapersonal characteristics. McPherson et al., (2001) go on to suggest that “homophily limits people’s social worlds in a way that has powerful implications for the information they receive, the attitudes they form, and the interactions they experience. Homophily in race and ethnicity creates the strongest divides in our personal environments, with age, religion, education, occupation, and gender following in roughly that order” (p. 451). Wenger (2000) explains that the “success of organizations depends on their ability to design themselves as social learning systems and also to participate in broader learning

systems” (p. 225). Access to external expertise is one of the 10 Practices of High Achieving Schools (O’Hair et al., 2000) and a networked learning community provides opportunities to enrich teacher knowledge with experts outside the confinements of a school community.

McGregor, Fielding, Robinson and Spender (2006) indicated that pedagogical knowledge and knowledge of learners were more highly networked than others in their 2006 empirical study of networked learning communities. The McGregor study suggests that network participants are motivated to have professional discourse with external expertise that promotes individual teacher growth. According to McGregor et al., (2006), these focuses may lead to changes in teacher activity in the classroom. McGregor, et al., (2006) recognize that networks provide a platform for moving best practices and innovation quickly, accelerating knowledge creation, and innovation. As technology has developed, new opportunities are available to meet the needs of networked professional learning communities where educators have access to the latest research and best practices and where collective efficacy is developed through self-directed growth.

**Affinity spaces.** Learning communities are fluid; they continue to evolve and restructure themselves (Senge, 1995; Sergiovanni, 1994; Wenger et al., 2002). This evolution of communities is prevalent in today’s high-tech world. Modern technology provides spaces for people to interact from a distance; an “interactional organization” with a common endeavor where newcomers and masters share a common space called an “affinity space” (Gee, 2007). Gee (2007) in reviewing the evolution of a learning community focuses upon “the idea of a space in which people interact” (p. 77) which is

the premise of the Web 2.0 revolution. McGregor et al. (2006) reiterates Gee in the statement emphasizing the need to “identify spaces, adult and student learning spaces, for joint work and engagement in dialogue, is increasingly acknowledged by education researchers” (p. 3).

Gee (2007) recognizes that schools do not have the features of affinity spaces such as distributed knowledge, networking, and collaboration although so many people living in today’s high-tech world have experiences with such spaces. An affinity space includes a broader social context. Gee in 2007 identifies 11 elements of an affinity space; some are unique to the online setting and purpose, others are shared features of community models. It has a common endeavor with little inclination of other participants’ race, class, gender, or disability (Gee, 2000). This element provides an insight into the context only possible in an online setting. Another element is that a common space is shared by newcomers and masters alike (Gee, 2000). Talbert (2010) recognizes this concept in professional learning communities where she states “schools and teacher groups within them inevitably begin at different stages of ‘PLCness,’ and system strategies must address these differences in order to effectively support system-wide change” (p. 569). Powell (2010) recognizes that capacity must be developed in experienced teachers as well as pre-service teachers for interacting with others at various stages within a professional learning environment. Gee (2000) clarifies that “affinity spaces may have portals where people with more expertise are segregated from people with less but they also have ones where such segregation does not occur” (p. 21). McGregor et al., (2006) recognize a need for spaces for joint work and discourse opportunities for both students and adults. More importantly, affinity spaces permit

distributed knowledge through interaction with the actual space and over the space. Gee (2000) refers to the space as a knowledge generator. Little (1993) agrees that teachers should be involved in the construction, not just consumption, of subject matter within a community. The context and content are transformed by the interactions that take place within the space (Gee, 2000). Barab, Kling, and Gray (2004) note that participants take on the responsibility for the evolution of a community.

An affinity space, according to Gee (2000) provides the opportunity to showcase various types of knowledge: individual, intensive, extensive, distributed, dispersed, and tacit knowledge. According to Marzano, Waters, and McNulty (2005), the difference in a professional learning community and a purposeful community is collective efficacy, the perception of teachers and administrators and the competency of their peers. Collective efficacy recognizes various types of knowledge. According to Gee (2000), an affinity space encourages specialized knowledge (intensive) as well as broader, more general knowledge (extensive). An affinity space promotes individual knowledge as well as distributed knowledge. It encourages dispersed knowledge, or knowledge from outside sources. Tacit knowledge is recognized and the opportunity to share this knowledge is present.

Gee (2000) suggests that there are different forms of participation and one person can be as active or inactive in each form as he or she chooses. There are also multiple ways to gain status within the site based upon various types of knowledge. Leadership within the space is fluid. It changes based on participation and generation of content. The features of an affinity space share common aspects with communities of practice, professional learning communities and networked learning communities,

but Gee (2000) declares without the “baggage a community carries” (p. 7). However, its unique context of an online space provides the opportunity for asynchronous interaction.

### **Common Characteristics of Learning Structures**

Organizational learning structures share many characteristics but have distinguishing features. Through this review of the literature, three strands, discourse, collaboration, and shared vision, have been chosen as guiding features for recognition of shared traits. These features are also encompassed in this research study and therefore provide a foundation for the development of a culture similar to that of an organized learning group. Each of the three strands is further detailed for a greater emphasis on each of the traits’ impact as a piece of a developing structure.

Organizational learning structures develop shared meanings and collective learning as a natural part of community development. Wenger (2000) refers to this as a “shared repertoire of communal resources.” This “shared repertoire” is developed in part through professional discourse. Professional discourse refers to discussions that revolve around professional learning. Rusch, (2005) identifies “organized talk” as the most common feature of research of learning organizations. This “organized talk” is referred to in the literature as contributions (Gee, 2000) intense communication (Fullan, 1999), persistent inquiry (Newmann & Wehlege, 1995), reflective thinking (Leithwood et al., 1998; Rusch, 2005) and professional discourse (McGregor et al., 2006; O’Hair et al., 2000; O’Hair et al., 2005). Dewey believed that for intellectual growth and common interests to be served there must be widespread discussions of various types of

ideas (as cited by O'Hair et al., 2000). Professional discourse is identified as one of the 10 Practices of High Achieving Schools (O'Hair et al., 2000).

The effectiveness of peer support and teacher collaboration to achieve technology goals is an important element identified by Ebersole and Vorndam (2002). Gee (2000) recognizes collaboration in affinity spaces as interactional organization of content and contributions within an online setting. Collaboration among teachers is a strategy promoted by organizational change efforts. Pugach and Johnson (1995) concluded that collaborative schools are more likely to become communities of learners. Collaboration is recognized as the most significant factor in the progress towards a professional learning community to reduce teacher isolation (Dufour & Eaker, 1998). Collaboration is imperative among teachers according to Gajda and Koliba (2007). Rigano and Ritchie (2003) conclude that teachers who collaborate mobilize resources from individual and collective resources more effectively. Increased teacher collaboration and communication focuses teachers' collective efforts toward school improvement (Dufour, Eaker & Dufour, 2005; Hord, 1997; Huffman & Hipp, 2003; Newmann et al., 1995; O'Hair, et al., 2000; Schmoker, 2005).

Shared vision is also recognized by each of the types of organized learning groups. Gee (2000) refers to a common endeavor or common interest as a foundation for building relationships within an online space that negates the boundaries of race, class, gender, or disability. Wenger recognizes an identity defined by a shared domain of interest for a community of practice (2000). Shared values and vision are recognized as essential to a professional learning community (Dufour & Eaker, 1998; Glickman, 2003; Hargreaves et al, 2001; Lieberman, 2000; McLaughlin & Talbert, 2001;

Newmann, 1993; Sergiovanni, 1994). Jackson & Burns (2005) refer to a belief that is “situated and contextually relevant” as the core of a learning community (p. 6).

Leithwood, Lawrence, and Sharrett (1998) indicate that intentional communication focused upon “shared norms, values, and beliefs about professional responsibilities, the nature of teaching, and the value of colleagues’ expertise, that influences the level of individual and collective motivation to learn” (p. 270).

The conceptual differences in each of the organizational change structures are contextual. Although this study focuses on education, communities of practice are found outside the reform efforts of the education field. Professional learning communities provide the opportunity for professional educators to grow and learn as individuals with the aid of collected knowledge and efficacy. Networked learning communities are inhibited by context as they are networks of communities that all come from different settings and barriers such as time and proximity make it difficult to meet. Affinity spaces are online spaces with the goal of continuous development and contributions from individuals who serve a common interest. The context of this research study is an online social network which is similar to an affinity space in that it promotes purposeful, online contributions of individuals. It is similar to a networked learning community in that a majority of the individuals in the study are a part of a systemic change effort at their school or district. This online space of professional educators shares similar goals, elements and philosophy of a professional learning community. By definition, this context of an online social network is a community of practice, but with purpose and context similar to the other models.

## **Barriers to Change Systems**

As stated by Bouckennooghe, Devos, and Van den Broeck (2009) the “ability of organizations to be receptive and open to change has become paramount.” These systems require intentional efforts (Powell, 2010) or norms of collaboration (Talbert, 2010) to engender change. Gajda and Koliba (2007) suggest collaboration is imperative among teachers. A source of frustration for the education community is recognizing that teacher collaboration is the most significant factor in the progression towards a systemic change initiative to reduce teacher isolation (Dufour & Eaker, 1998) yet there is evidence of a struggle to overcome barriers such as time, proximity, individual goals, and isolation with traditional forms of learning communities.

Although highly successful systemic change strategies, COP and PLC research shows that some initiatives are struggling. “Researchers, theorists, and policymakers are calling for schools to be transformed into ‘community-like organizations characterized by shared norms and values, a focus on student learning, reflective dialogue, deprivatization of practice, and collaboration” (Scribner et al., 1999, p. 130). However, “schools and universities seldom are able to break the walls of privacy to create PLCs that facilitate the learning of all individuals” (Powell, 2010, p. 166). Burnes (1996) believes that the planned change approach is not appropriate for crisis situations. According to Mullen, Bledsoe, and Bellamy (2008), the top-down administrative approach of many community organizations discourages the adoption of evidence-based practices. Talbert (2010) warns “many teacher groups formed through mandates simply comply with the letter of the law and fail to realize improved student achievement. This is because school administrators and leaders of change either fail to

understand the deep principles that anchor PLC work or try to create them in ways that alienate teachers” (p. 555).

### **Shift in Learning Context**

In a series of case studies where teachers, administrators, teacher-librarians, and education technology experts from 12 Canadian schools were interviewed concerning their experiences in the use of technology, participants indicated a preference for learning the use of instructional technology in more informal ways. They cited learning from collaboration with peers and students, on-the-job discussions and conversations with family and friends as being more useful than structured workshop training sessions (Granger, Morbey, Lotherington, Owston, & Wideman 2002). Cross (2007) suggests a different kind of learning which is more informal where application of job requirements are employed as a new trend shaping learning today. Cross (2007) refers to informal learning as the impromptu ways people learn to actually do their jobs. Merriam, Caffarella, and Baumgartner (2007) describe informal learning as follows: “The very nature of informal learning is what makes it so difficult for adults to recognize. Embedded as it is in our everyday activities, whether we are at work, at home, or in the community, and lacking institutional sponsorship, adults rarely label these activities as learning” (p. 35). Caruso (2009) emphasizes this claim as she affirms that informal learning is by far the most prevalent form of adult learning.

Informal learning already has a place in formal development programs. Interacting with others makes learning take hold. Most interactions around formal development topics are informal. (Cross, 2007). According to O’Hair et al. (2006), technology should be used in schools in the same ways it is used in society, as a tool to

increase productivity and efficiency, and as a way to gain knowledge. In today's society information is at your fingertips and can be accessed from a pocket at any time, and therefore learning takes place more informally. Cross (2007) highlights the benefits of linking informal learning with the "anytime, anywhere sensibilities of next-generation learning" of social media to create new self-motivating experiences that promote personal growth.

Online collaboration opportunities provide vicarious experiences for all participants. Vicarious experiences have a large impact because teachers actually see what it looks like when taught differently and therefore have a reference (Ertmer, 2005). Schunk (1991) focuses on learning vicariously through modeling activities and how this promotes informational transfer as well as being motivating. Ertmer (2005) agrees that professional development that focuses on providing new experiences to help change practices, which will in turn help change beliefs, is accomplished by encouraging teachers to start small, explore, and have vicarious experiences. Therefore, modeling, sharing, and reflecting opportunities in an online setting should prove effective. Additional investigations should augment theory to practice in terms of the importance of a vehicle for communication and collaboration that school leaders can make readily available at minimal cost.

Web 2.0 refers to a shift in design by developers to start using the Internet in new ways. This movement required basic functionalities to be present, such as server-side and/or client-side scripting, while the project was developed, often with new developer languages. "These platforms were specifically designed to aid online collaboration and user-generated content sharing" (van Zyl, 2009, p. 908). Kaplan and

Haenlein (2010) describe this phenomenon “as a platform whereby content and applications are no longer created and published by individuals, but instead are continuously modified by all users in a participatory and collaborative fashion” (p. 61). Web 2.0 tools create a space where “passion-based learning” encourages participation, focused conversations, and purposeful brainstorming that form a foundation for “situated understanding emerging from action not passivity” (Brown & Adler, 2008, p. 26). Brown and Adler (2008) suggest that Web 2.0 is suited for continuous, lifelong learning that extends beyond formal schooling. This context may encourage students to readily informally gain new knowledge and skills as the world shifts beneath them (Brown & Adler, 2008). Brown and Adler, (2008) state “in this open environment, both the content and the process by which it is created are equally visible, thereby enabling a new kind of critical reading—almost a new form of literacy—that invites the reader to join in the consideration of what information is reliable and/or important” (p. 5).

**Opportunistic Movement.** It is the interaction between and among individuals that comprises the culture and structure of an organization (Daly et al., 2010-2011). Hubbard et al., (2006) suggest that change is constructed socially and Mohrman, Tenkasi, and Morhman (2003) propose lasting change occurs through the actions and interactions of contributors. Research by Tenkasi and Chesmore (2003) suggests that adequate analysis of social networks of people in an organization may broaden the understanding of the factors that impact (either support or constrain) organization-wide reform. However, despite the continuing research around teacher work in professional communities, a significant gap still exists in our understanding of the quality of

collaborations and how these social interactions may impact the depth of systemic reform (Coburn & Russell, 2008; Little, 2003).

New technologies afford the opportunity to create spaces for supplementation for teacher development. Brown (2008) describes the Web 2.0 revolution for informal collaboration as “learning (that) occurs in part through a form of reflective practicum, but the reflection comes from being embedded in a community of practice that may be supported by both a physical and a virtual presence and by collaboration between newcomers and professional practitioners/scholars” (p. 30). Wellman (2001) claims “the proliferation of computer networks has facilitated a de-emphasis on group solidarities at work and in the community and afforded a turn to networked societies that are loosely bounded and sparsely knit” (p. 2031).

Social networks are renowned for providing opportunities for informal, unstructured learning (Greenhow & Burton, 2011; Greenhow & Robelia, 2009; Meyer & McNeal, 2011; Selwyn, 2009). Informal learning is “frequently the best route” for people who have already developed an area of expertise and want to learn “what they need to know to fill a hole in their mental tapestry” (Cross, 2007, p. 2). Dobbs (2000) suggests that two barriers of informal learning are time and proximity. In a social network, learning is often informal and situated where newcomers, practitioners, and scholars can coexist and collaborate anytime from anywhere. Brown (2008) in explaining the concept of social networking states,

Social learning is based on the premise that our *understanding* of content is socially constructed through conversations about that content and through

grounded interactions, especially with others, around problems or actions. The focus is not so much on *what* we are learning but on *how* we are learning.

“Viewing learning as the process of joining a community of practice reverses this pattern and allows new students to engage in ‘learning to be’ even as they are mastering the content of a field” (Brown, 2008, p. 6). The platform offered by a social network provides the opportunity to seek specific knowledge to fill a need.

Within the context of professional learning, little research has focused on social networking as the source of delivery and development. Abrahamson (2000) advocates “change as it is usually orchestrated, creates initiative overload and organizational chaos, both of which provoke strong resistance from the people most affected” (p. 129). Talbert (2010) highlights the “key to building teacher learning communities is the integration of resources to provide support for school change and high quality learning opportunities across the system” (p. 569). Fortino and Nayak (2010) define professional networking as a “mode of business communication between workers with similar areas of interest, background and profession who are linked to share and contribute vital personal professional information for career advancement and human resource management.” Selwyn (2009) recognizes that social networks allow learners to join networks based on interests and affinities that are not always addressed in their immediate educational environment. Wellman in 2001 suggested that new tools be developed to help navigate people and knowledge in “complex, fragmented, networked societies” (p. 2031). Little (2005) states “despite the growth of networking in education, and repeated appeals for more “professional community” (p. 3) as an avenue to school improvement, we know little about the interaction between a network-based

professional community and the localized professional communities rooted in the daily lives of schools.”

**Definition of the Phenomenon – Informal Social Media Network.** Although these conceptual frameworks attempt to capture the stages of professional growth, few have sought to include current technological advances as modes of delivering the content necessary to move forward as part of personal growth as a professional. The Web 2.0 revolution, promoting interactions and collaboration, has not yet settled on a platform for knowledge dissemination that can fulfill the needs of professional educators to stay abreast of the newest research and best practices individually while continuing to develop as a professional networked learning community. This research-based model provides just a platform. This is a platform for informal discourse providing outside expertise and dissemination of knowledge for in-service, pre-service and faculty.

### **Recent Empirical Studies Focused on Social Networking**

Social networking is becoming more and more ubiquitous. As such, more empirical studies include various forms of social networking as a supportive tool for educational purposes. Although there are various social networking sites, *Facebook* serves as the sampling pool for most empirical researchers because the culture and user protocols are established. Several themes emerge of the current studies on social networking including informal learning, discourse, collaboration, sense of community, and overcoming barriers of time and proximity. The empirical studies emphasize that motivators for use of social media emulate the elements that exist in developing organizational change efforts.

The selected studies address vital issues surrounding the development of online social networks to support systemic change through exploring social networking theory in application to teacher collaboration, reasons for teachers using online communities, online social networks as a platform for informal and formal collaboration, the impact of position within an online social network, shy individuals as lurkers and the role of an internal social network on collaboration and change efforts within a business setting. This research body contributes to the development of my own study providing both a theoretical base for the purpose of the study as well as a literature base for decisions in developing the network to be studied. King in a 2011 study concludes that “the potential of transformative learning experiences through self-direction could address vital needs for continuing professional refreshment, renewal and persistence” (p. 386). These articles provide the foundation necessary for framing a model network to provide such experiences.

### **Informal Learning as Discourse**

Three studies include an effect of an online social network on discourse focused on learning (Madge, Meek, Wellens, & Hooley, 2009; Greenhow & Robelia, 2009; Selwyn, 2009). The studies suggest that although not always purposeful, students and employees participate in informal learning in social networks. Madge et al. (2009) in an online survey of 213 undergraduates found students used *Facebook* to contact group members, ask for assistance on work and revisions, and create new study or project groups. In this study, 46% of the respondents “stated they used Facebook to informally discuss academic work with other students on a daily or weekly basis” (Madge et al, 2009, p. 149). Selwyn (2009) used the wall postings of 909 undergraduate students to

discover that social networking is used for “the exchange of practical information” (p. 163) related to the “job of being an undergraduate” (p. 165). This on-the-job training is similar to the discourse that takes place within a business as employees learn procedures from each other as well as tricks of the trade. Greenhow and Robelia in 2009 followed 11 case study participants and found that high school students use social networks to get help on assignments, organize study groups, check progress, clarify instructions, or to support formal content learning.

### **Purposeful Collaboration**

Nine empirical studies report on purposeful collaboration within a social network (Cho, Gay, Davidson & Ingraffea, 2005; Connell, 2009; DiMicco et al. 2008; Dwyer, Hiltz & Passerini, 2007; Mack & Head, 2007; Mazman & Usluel, 2010; Schroeder & Greenbowe, 2009; Selwyn, 2008; Stewart, 2008). A theme of purposeful collaboration among medical professionals, business professionals, undergraduate students, professors, and students and librarians and students emerged from these empirical studies. These studies indicate purposeful collaboration as a motivator to social network use. Connell, in a 2009 study of students’ perceptions of librarians using social networking as an outreach tool, report that most students would be accepting of library contact through these various sites. In addition, Mack & Head in a 2007 study provide details from undergraduate students on their use of *Facebook* to seek asynchronous information on research assistance. Stewart, in a 2008 study, indicates the Literature Circle on Facebook can help develop literacy skills through purposeful collaboration. DiMicco et al. (2008) suggest that the Beehive social network, used by IBM, is a platform to share new ideas and gather support for company projects from

those outside their standard collaborative circles. This purposeful collaboration with external sources shows a willingness to seek outside expertise, one of the 10 Practices of High Achieving Schools (O'Hair et al., 2000) through a social format.

Mazman & Usluel (2010) surveyed 606 *Facebook* users where results reflected usefulness is the most important factor for the adoption of a social network. Therefore, purposeful interactions within a network for use in a course or workplace could aid in adoption of a social network. This study also indicated that use of *Facebook* for educational purposes have a positive relationship with its use for communication, collaboration, and sharing of resources. Schroeder & Greenbowe (2009) explored *Facebook* as an effective communication collaborative tool. Of the 128 organic chemistry participants, posts, and discussions were monitored. The results emphasize *Facebook* communication patterns were more complex than that on WebCT and the posts and topics produced deeper comments and replies. Cho, Gay, Davidson, & Ingraffea, (2005) in a study of 31 participants in an aerospace project found that communication style and pre-existing friendship networks impact both network position and learning outcomes. This information is important for linking collaboration with pre-existing social norms, which according to this study, could help or hinder progress. Selwyn (2009) reiterates this evidence of social networking as a purposeful collaborative tool as his study reveals that among the 909 participants, students would “assist each other’s educational endeavors” through the “exchange of academic information” (p. 166). Students used Facebook to recommend journal articles or books, provide reflections, and course requirements, one groups of students even used Facebook to recruit sample participants for their dissertation research. A study by

Thompson, Dawson, Ferdig, Black, Boyer, Coutts, and Black (2008) in the field of medicine suggests that professionals are already using social networking to reach out to colleagues but using the social networks readily available, such as Facebook, are drawing ethical concerns. These studies suggest that a professional network whose purpose is useful and steers away from the friend-based system could promote collaboration.

### **Sense of Community**

In an attempt to help build community and create an individual's presence within a community, several studies report on self-disclosure while others look toward personality factors to help create an understanding of group dynamics within a social network. Powell, in 2010, established "schools and universities seldom are able to break the walls of privacy to create PLCs that facilitate the learning of all individuals" (p. 166). Dwyer, Hiltz, and Passerini (2007) recorded perceptions of students' trust and privacy concerns in using a social network. This study surveyed 117 individuals and the results uncovered that within interactions that take place online, trust is not as necessary in building new relationships as it is with face-to-face encounters.

Kolek and Saunders, in a 2008 empirical study of 471 undergraduates, examined students' online self-disclosures. The results indicate that students post pertinent private information such as location or address and demographic information. In a 2009 study, Debatin, Lovejoy Horn, and Hughes surveyed 119 undergraduate students and found that students understood privacy concerns but continued to upload personal information as participating in the social network "outweighed the risk of disclosing personal information" (p. 100). This ties to Mazer, Murphy and Simonds (2007) mixed

methods study of 133 undergraduate students where teacher self-disclosure led to higher students anticipated motivation and affective learning and on overall positive classroom environment.

Perhaps these contributions could be observed with Dawson's 2008 study where he found that "high-performing students were more inclined to form social ties with other high academic performers. Similarly, low-performing students developed social ties with other low performers" (p. 750). In addition, Cho et al.'s (2005) study where social positions within a social network were monitored and linked to learning outcomes provide additional data. Orr, Sisic, Ross, Simmering, Arseneault, and Orr (2009) studied the impact of shyness and its positive correlation with time spent of *Facebook* as well as negative correlation with number of friends. This research includes a look at personality traits of 103 undergraduates to contribute to the growing field of cyberpsychology. In addition, Orr, Sisic, Arseneault, Simmering, & Orr (2009) examined the data of 97 students and the personality traits of the Five Factor Model as it related to *Facebook*. Results revealed that five factors of personality were not as influential as literature suggests. Motivation and communication were as influential for *Facebook* use.

Madge et al., in a 2009 study, explore how students use *Facebook* for social integration into university life and Selwyn's (2009) study explore the "identity politics" associated with *Facebook* for students. Debatin et al. (2009) suggests that "developing a persona and maintaining communication through technology (Twitter, texting, instant messaging, posting to social networking account, Second Life, etc.) is so embedded in the typical college students' ecology that to not engage in this form of communication

would be social death” (p. 101). These studies contribute to the understanding of creating presence within a social network and how the importance of presence can impact group dynamics. Participants provide information, despite privacy concerns, to try to form bonds with people who have similar interests and shared goals. The empirical data points to shared vision as one important aspect not yet directly explored with social networks but an important aspect of developing professional learning communities.

### **Accessibility**

Dobbs (2000) suggests that two barriers of informal learning are time and proximity. Several empirical findings suggest time and proximity are motivators for using a social network. Several studies contributed findings that suggest social networking was used to save time when contacting others (Greenhow & Robelia, 2009; Madge et al., 2009; Selwyn, 2009). Additional studies suggested social networking aided in overcoming proximity barriers (Cho, Gay, Davidson & Ingraffea, 2005; Debatin et al. 2009; DiMicco et al. 2008; Schroeder & Greenbowe, 2009; Selwyn, 2009). Li and Pitts, in a 2009 study of 89 undergraduates, explored professor use of virtual office hours to communicate with students using *Facebook's* chat system. The results indicated this type of communication was positively correlated with communication between students and faculty outside the course. In the 2007 Mack and Head study, asynchronous reference and research assistance inquiries through *Facebook* were the most prevalent of all inquiries of the study of how librarians could use Facebook to communicate.

## Summary

The relevant literature reviewed relates to social networking to supplement organizational change. Technology can be a catalyst of a change initiative (Nielson, 2008; Williams, 2006). The organizational setting is being transformed through the use of social media (DiMicco et al., 2008; Jue, Marr, & Kassotakis, 2010). Social networking promotes collaboration, discourse, and access within organizations (DiMicco et al., 2008; Jue et al., 2010; Meister & Willyerd, 2010; Stolley, 2009; van Zyl, 2009). Themes emerging from the literature suggest that a reciprocal relationship could exist between social media and the development of professional platforms for learning. What we can learn from professional network studies can be applied to social media initiatives and the empirical research shows that social media could have an impact on the renewability and sustainability for professional learning. Social networks are already being used to host informal and formal learning experiences. Closed social networks are warranted as they have been shown to aid in overcoming barriers such as time and space. Friend-based systems do not promote cross-collaboration but open social networks could supplement extended learning community models. Motivation for social network use for learning is more prevalent among Millennials who will be 47% of the workforce by 2014 (Meister & Willyerd, 2010).

The current literature reveals scholars or individuals representation of organizational change models and online communities separately. In contrast, this research is able to explore a range of education systemic change models and the role of online social networking as extensions to these models. The sense that is made from experiencing the online extension is absent in most studies. By filling this gap, more

will be understood about the impact of online support to organizational change, how the current literature contributes and where it falls short on guidance. My research purpose requires a method that would allow for various perspectives of the social networking experiences to be described and classified. The understanding of social networks as a supplement to change initiatives would be enhanced with the inclusion of diverse perspectives.

This research would be better served by a qualitative approach. My belief is that there are various experiences that create perceptions of realities. The purpose of the research is to build a variation of understanding of organizational change rather than a hypothesis to be tested. Teachers in this study will be asked to share personal experiences of an online social network for systemic change support. What will be captured is not their intangible understanding of online social networking but concrete experiences utilizing social networking for change. Phenomenography was selected as a method to map teacher perspectives while also addressing the need for empirical and generalizable research. In choosing phenomenography as the appropriate method, systematically presenting the range of perspectives will allow for appropriate description and comparison with the existing literature. The intended uses of the outcomes of this study are to provide new ways that social networks can be used for professional support. Therefore, because this research is intended to impact change in education through examining practitioner experiences, developmental phenomenography is a match for the methodology.

## **CHAPTER 3**

### **Methodology**

This study focused upon the perceptions of teachers in an online informal network. The goal was to build a deeper and broader understanding of interpretations of teachers learning informally through social media. This chapter provided an overview of the methodology adopted as situated within qualitative research, then specific information regarding the procedures of the selected study. Variation theory, where differences are used to highlight a range of ways of viewing a phenomenon, (Marton & Booth, 1997) served as the foundation through which the online experiences were analyzed. The theory also guided the methodology.

The purpose of this study was to put theory into practice by creating a model social network for connecting in-service teachers on one informal platform. This perspective-seeking study captured the perceived experiences of teachers within a social network despite barriers such as time, isolation, and proximity. The results of a phenomenographic approach demonstrated how differently teachers may view the social network thereby possibly explaining insight into use and why teachers participate in different ways. Furthermore, with the understanding of a social network's impact on teachers, more efficient ways of reaching teachers' needs through professional training could be an outcome of the study. Sandberg (2001) suggests phenomenographical approaches could be used in professional training. By using the variation of how professionals understand or view a phenomenon, new insights open up the possibilities of providing new ways of teaching and learning (Sandberg, 2000).

Methods of inquiry include phenomenological reflection on data elicited existential investigation of teachers' experiences and investigation of the phenomenon. This study collected valuable information for those interested in providing teachers a new level of support in collaboration and growth on a professional level. It identified ways to develop, strengthen, and extend professional learning communities beyond the constraints of time and place. The data obtained from this study provided answers to the following question:

*What are the lived experiences of teachers participating in an online meta-professional learning community culture designed to mitigate isolation?*

## **Overview of Methodology**

In an effort to describe the subtleties between ethnography, phenomenology and phenomenography, I offered this analogy: imagine there is a live model sitting in front of a picture-perfect, breathtaking, panoramic view. An ethnographer tries to capture that moment in time. The culture, the people, and the experience are frozen and described. Using words, a snapshot of enormous detail is generated, like a photograph. The researcher describes the culture as it is seen and experienced by the artist. Now imagine there are easels set up around the live model and from various angles artists are capturing that moment in their own way. Some perceive it as abstract, some use impressionism, pen and ink or sketching. A phenomenologist tries to capture others' lived experiences of the scene. Using interviews, a phenomenologist describes each of the artist's representations of the live model, almost like an art docent in a museum describing the life or even viewpoint of each individual artist in order to understand the context in which the art was created.

A phenomenographer employs both the photograph and artistic representations. In addition, phenomenography also considers the relationships among the art. Using interviews and looking for variation of perspective, a phenomenographer categorizes individual pieces of art into relational maps much like clusters of colors to create a visual representation of the color blue using multiple blue hues. Patterns emerge and in this methodology, a mosaic, or outcome space, is created. When the data is aggregated, it allows you to view the data in a new way and a new picture emerges, much like zooming out of the mosaic to see the bigger picture.

Phenomenography derives from phenomenology with cultural aspects from ethnography (Marton, 1981). Mingers (2001) suggests a multi-method or more pluralist approach may be necessary to provide the full richness of the real world experiences as different paradigms each focus attention on different aspects of the study (p. 243). The phases within a research study pose different problems for the researcher and therefore combining methods to address each phase may yield a better result (Mingers, 2001). Phenomenography uses diverse methods to address the subtler perceptions and behaviors through a phenomenological approach while gaining awareness of the situational context through an ethnographical approach. To better understand phenomenography, a review of phenomenology and ethnography was included. In addition, because this study is situated in an online setting, an online ethnography approach was chosen to accurately address the realm of an online study. However, phenomenology does not have a sub-category for an online approach, therefore, the traditional method will be used.

## **Phenomenology**

Phenomenological research is experiential and qualitative and uses data to identify and describe the subjective encounters of the respondents based on their lived experiences. It depicts what they know about a particular phenomenon and is a deeply reflective practice through which one enquires into human meaning (van Manen, 1990). According to Farber (1966), it is a philosophical method originated from Edmund Husserl's philosophy of mathematics. Deriving meaning from acts of consciousness became the foundation for Husserl's philosophical movement, phenomenology. Gadamer (1976) in his work in hermeneutics and phenomenology, conveys that interpretation does not aim to overcome difference but rather to dialogue with difference. While these two approaches differ, the general purpose of phenomenology is to describe the essence of a phenomenon using individual experiences which can be used for developing models of human action (van Manen, 1990, p. 177).

A phenomenological approach provides insight into how individuals with different perspectives share common experiences, in order to develop a deeper understanding of the experiences themselves (Creswell, 2009). In data collection, phenomenology distinguishes between pre-reflective and here-in reflective action. To make sense of and interpret meaning about the experiences of the subjects of the study, the phenomenological design allowed the researchers to identify characteristics and describe them within their contexts. For derivation of this knowledge about a particular phenomenon, several core processes, including Epoche, transcendental-phenomenological reduction and imaginative variation (Moustakas, 1994) become essential components of the design. A number of in-depth, open-ended interviews are

conducted to gather personal descriptions of lived human experience (Schwandt, 2001). Phenomenology uses data to identify and describe the subjective encounters of the respondents based on their lived experiences. It depicts what they know about a particular phenomenon and is a deeply reflective practice through which one enquires into human meaning (van Manen, 1990). Participants are chosen for their close involvement with the experience; however, the participants themselves are not the primary focus in the process. The focus is on the human experience from the perspective of several people. The analysis process is inductive to identify invariant meanings and themes of the essence using first order perspectives. The outcome is a description of the essence of a phenomenon based on individual experiences. In phenomenology, there is an effort made to find the meaning of the experience and to seek common meanings that arise from these explorations (van Manen, 1990).

### **Ethnography**

Arising from anthropology and sociology, ethnographical research reflects cultural pluralism and is qualitative (Dicks, Mason, Coffey, & Atkinson, 2005). This methodology includes entering into the field; using direct observation for gathering data; interviewing, studying photographs; and using artifacts of the group or culture (Creswell, 1998). The goal is to describe a culture in a complex manner through immersion with the group at an intimate level (Moustakas, 1994). This method is informal and can appear disorganized as researchers attempt to find key informants with a focus on culture through the participant's perspective or firsthand encounters. However, the data is then organized into a holistic cultural impression of rich narrative descriptions.

**Online Ethnography.** Using traditional ethnography field methods online, following Rheingold's Virtual Community (1993, 2000), researchers enter a field site and become known participant observers (Gatson, 2011) in order to provide descriptions of the customs of peoples and cultures. This methodology provides insight into a "socially constructed and reconstructed... public sphere for cultural interaction...in the form of a repository for collecting cultural memories" (Fernback, 2002, p. 37) whereby boundaries for researchers become permeable. Using an online ethnography approach, or "Ethnography 2.0" (Gatson, 2011, p. 521), the story is captured in a "socially constructed and reconstructed repository for collective cultural memory" (Fernback, 2002) that is an online space, for a holistic representation of the culture that exists. The purpose of online ethnography is to describe a culture by focusing on multiple emic voices which can be used for etic understanding of a culture.

These data could be categorized as similar to document collection in that it can be accessed unobtrusively through the online space, it is already transcribed, and it allows the researcher to use the language and verbiage of the participants (Creswell, 2009). In addition, these data could be categorized as similar to observation collections in that the researcher will have first-hand knowledge of the experience as a participant, the information is recorded as it occurs, and the researcher can conduct the observations as an observer or participant for various perspectives (Creswell, 2009). The approach of ethnography distinguishes between pre-reflective and reflective. There is a distinction between first order key informants and second order researcher perspective. To make sense of and interpret meaning about the experiences of the subjects of the study, the ethnographical design allows the researchers to describe people and cultures

of an online space. The analysis is inductive to identify patterns, deductive to identify structure and format, and comparative to evaluate applicability across cultures. Using immersion techniques and empathetic lenses, cultural understanding emerges through coding, domain analysis and narrative construction. The outcome is a description of a culture interpretation based on individual and personal experiences.

### **Phenomenography**

Phenomenography was once described as using data to identify and describe “different ways in which people experience, conceptualise, perceive and understand various aspects and phenomena in the world around them” (Marton, 1986, p. 31).

Prosser (2000) describes phenomenography as the “qualitatively different ways people approach and perceive particular tasks in relation to particular contexts” (p. 35).

Phenomenography is an approach often used in the field of education to qualitatively identify ways in which students or teachers experience teaching or learning. The method was developed in the 1970’s out of investigations into students’ experiences of learning (Ashworth & Lucas, 2000). A subcategory of phenomenography has developed where pure phenomenographic methods are used but the intentions of the research are developmental, meaning “research method and application form a seamless link” (Bowden, 1994, p. 13).

Because this research is intended to impact change in education through examining practitioner experiences, developmental phenomenography, a subcategory of phenomenography, is a match for the methodology. According to Bowden (2000) developmental phenomenography focuses upon “changing the way the world operates” based on the findings of a study. Entwistle and Peterson (2004) in support of a more

developmental approach to research, suggests that “post-modern theories which endorse extreme relativism are not seen as helpful to the main concerns of either academic staff or educational developers” (p. 213). Bowden (2000) also contributes that by using the outcomes to help participants of the research and others like them, it will also aid in developing generalizations for improving learning experiences within the field of study. Developmental phenomenography studies are meant to inform and improve practice (Bowden & Green, 2005, p. 35). The intended uses of the outcomes of this study are to provide new ways that social networks can be used for professional support.

Phenomenographers do not study the world; they study people’s conceptions of the world. (Webb, 1997). “Over the last several years, the importance of user experience, user testing, and user feedback have become obvious, but we have very little sense of group experience, group testing, or group feedback” (Shirky, 2003, March 9). Rather than focusing on individuals, this study will focus on the phenomenon and the groups’ experiences of the phenomenon. The research will identify variations in the experiences of the teachers’ lived experiences and a phenomenographical approach allows the range of perspectives to be presented. Breslin and Decker (2007) suggest that “social network theory is good at representing links between people, but it doesn’t explain what connects those particular people and not others” (p. 87). This phenomenographical research study will capture perspectives from groups of teachers, pre-service and faculty that contribute insight into an informal learning environment that disregards a culture of hierarchies to promote inter-communication. In phenomenology, the pre-reflective meaning of work experiences are described giving a better understanding of what it means to be a teacher. However, in phenomenography,

how teachers make sense of their work on a more cognitive level is studied; there is no distinction between pre-reflective and reflective approaches. Using second order, non-dualist perspective, the researcher describes variation of a phenomenon (meaning) within a culture (structure) focusing on collective experiences which can be used for competence development. A sustainable theme in phenomenographical methodology is using phenomenography as a method for investigating change, specifically changes in the ways of experiencing a phenomenon (Dunkin, 2000; Johansson, Marton & Svensson, 1985). Marton (1981, 1994) believes that there are a *limited number of qualitatively* different *ways* in which different people *experience* a certain *phenomenon*. Saljo (1997) goes on to explain that due to limitations of language and ways of experiencing, the descriptions produced are “categories of description, a way of describing experiencing something” (Marton, 1981, p. 175). The analysis process is inductive to identify pools of meaning leading to categories of description. The outcome is a description of a group’s understanding of a phenomenon within a structure through the development of an outcome space. This research will focus on uncovering the variation in the experiences of an online social network. Similarities are compared and differences are contrasted between phenomenology, ethnography and phenomenography in the following table:

Table 1

*A Comparison of Phenomenology, Ethnography and Phenomenography*

	Phenomenology	Ethnography	Phenomenography
Approach	Distinguishes between pre-reflective and hear in reflective action	Distinguishes between pre-reflective and reflective	Does not distinguish between pre-reflective and reflective
Purpose	Describes the essence of a phenomenon using individual experiences which can be used for developing models of human action	Describes a culture by focusing on multiple emic voices which can be used for etic understanding of a culture	Describes variation of a phenomenon (meaning) within a culture (structure) focusing on collective experiences which can be used for competence development
Perspective	First order perspective	Distinction between first order key informants and second order researcher perspective	Second order, non-dualist perspective
Analysis	Inductive to identify invariant meanings and themes of the essence	Inductive to identify patterns, deductive to identify structure and format and comparative to evaluate applicability across cultures	Inductive to identify pools of meaning leading to categories of description
Outcome	Description of the essence of a phenomenon based on individual experiences	Description of a culture interpretation based on individual and personal experiences	Description of a group's understanding of a phenomenon within a structure through the development of an outcome space

## Cultural Context

As earlier mentioned, the Web 2.0 revolution, promoting interactions and collaboration, has not yet found a platform for knowledge dissemination that can fulfill the needs of professional educators to stay abreast of the newest research and best practices individually while continuing to develop as a professional networked learning community. Relatively little has been known about how to develop such online intentional communities to supplement change initiatives (Wenger, McDermott, & Snyder, 2002). However, online social networks are quickly becoming a mainstream form of communication and collaboration. Selwyn, in a 2009 study, recognized that “over the past five years social networking sites (SNSs) have become one of the most prominent genres of social software, popularised by the *MySpace* and *Facebook* applications that now each boast hundreds of millions of users.” Social network sites allow participants to “enter new networks of collaborative learning” often situated around common interests (Selwyn, 2009, p. 4). Barab et al., boast interactions at both an individual (subject) and social (community) levels as significant in their 2004 study. Barab et al. in 2004 found that “with respect to fostering learning, many current educators are interested in creating new intentional online communities that support learning,” and the “intentionality is often linked to a professional development effort” (p. 4). The platform used in my study provided opportunity for informal discourse providing outside expertise and dissemination of knowledge for in-service teachers. The context for my study was a closed professional social network custom designed for individual interaction within grade level or content specific pre-formed groups.

Features included profiles, threaded conversations, searchable content, and various media uploads/downloads.

### **Participants and Context**

Although the network is open to any educator, undergraduate student, or faculty member, in an effort to maximize the variation in ways of viewing the phenomenon, participants for the study were chosen from a purposefully selected sample based upon network use. Purposive sampling (Patton, 2003) or purposeful sampling (Lincoln & Guba, 1985) refers to the decisive selection of a specified sample. The research aimed to explore not just a set of differing meanings but an inclusive structure that showed the relationships among the different meanings (Akerlind, 2005). This structure provided a way of viewing the experiences of the phenomena holistically although comprehensive of individual experiences. This strategy, maximum variation sampling, is to “document diverse variations and identify important common patterns” (Creswell, 2009, p. 127) in the data. The maximum variation practice “consists of determining in advance some criteria that differentiate the sites or participants, and then selecting sites or participants that are quite different based on the criteria” (Creswell, 2007, p. 126). The criteria for participation in this study are in-service teachers of Oklahoma who are members of the social network with varying participation and who represent various classification of schools and grade levels. Thus, an ideal selection of participants would “represent the full range of possible ways of experiencing the phenomena” (Akerlind, 2005, p. 323).

Experiences from a large number of phenomenographic studies showed that data from 20 participants is generally enough to discern all the ways of interrelating with the

selected phenomenon (Stalsby-Lundborg et al., 1999; Holmstrom et al., 2003; Sandberg, 1994). A total of 20 teachers were selected to participate in the interviews to provide maximum variation based on participation in the social network. Using number of posts, comments, and log-ins as guides, participants were purposefully selected for representation of variation. Four participants were chosen for the high number of postings accounting for the top 1% of content providers; twelve were chosen for the casual middle range of postings and four were chosen for few postings or comments. According to Norwood (2000) the number of participants is deemed less important than the quality of the research and saturation comprised in the collection of data.

### **Data Collection**

Phenomenography is inductive in nature; the bottom-up approach uses raw data which allows the “ascertaining of structures of awareness” (Marton & Booth, 1997). To explore teachers’ perceptions of the social network and its impact, multiple data sources were collected and organized into two sets. These sets include participant-observation data and social network data as field notes and the main source of data collection in phenomenographical design, the interview data. Data collection and the establishment of culture began in 2012 with the development of the network, study, and Institutional Review Board approval. Interviews and social network data continued into 2013.

Phenomenography has parallels to ethnography and phenomenology in that culture and lived experiences are a part of the study. Culture is identified through immersion of the setting, fieldwork, and interviews. Lived experiences are captured through the three stages of the interview process. Although these steps are similar, in

phenomenography after the culture is identified, the interview process follows a similar pattern of questions to create a rich description of lived experiences, although only one interview is conducted and the findings are not presented individually but as a group's representation of the experience. Phenomenography has its own unique features that make it an excellent fit for this study because it relates the context to the lived experiences and context plays such a key role in online studies.

### **Field notes on participant observation**

This first stage of the process was an online ethnographic study using traditional field methods as described by Gatson (2011) in the SAGE Handbook of Qualitative Research. Gatson (2011) describes this method as “a lone researcher enters a field site and becomes a covert or known participant observer” (p. 513-514). I took the role of observer-as-participant where the role of the researcher was known within the culture. Therefore, I had first-hand experience with the participants, and I recorded information as it occurred and unusual aspects came to light (Creswell, 2009). Using an online ethnography approach, or “Ethnography 2.0” (Gatson, 2011, p. 521), I attempted to capture the story in a “socially constructed and reconstructed repository for collective cultural memory” (Fernback, 2002) that is an online space, for a holistic representation of the culture that existed. These data could be categorized as similar to qualitative document collection in that it could be accessed unobtrusively through the online space, it was already transcribed, and allowed me to use the language and verbiage of the participants (Creswell, 2009). In addition, these data were categorized as similar to observation collections in that I had first-hand knowledge of the experience as a

participant, the information was recorded as it occurred and the researcher conducted the observations as an observer or participant for various perspectives (Creswell, 2009).

DeWalt and DeWalt (2002), identify the determining factors of observation of data as a collection method as: understanding the types of questions guiding the study, the site selected for the study, the observation opportunities available, the representation of the participants of the population at that site, and the strategies used to record and analyze the data. The online management system was monitored to assess the number and types of postings as well as used to establish the existence of culture. Schunk (1997) suggests that observation methods provide ways to determine who interacts with whom, understand how participants communicate with each other, and define how much time is devoted to various activities. While Schensul, Schensul, and LeCompte (1999) specifically add how people interrelate, cultural parameters, guide relationships with informants thereby easing facilitation of the research process. Bernard (1994) supplements these suggestions with the understanding the participant observation reduces the “reactivity” of informants acting differently if they know they are being observed. DeWalt and DeWalt (2002) advocate that participant observation can increase the validity of the study, as direct observations may produce a better understanding of the context and phenomenon under study. Bernard (1994) also lists that this method may be the only way to collect the right data for the study; in this instance it allowed me to check definitions of terms with participants as the interview took place. According to Dirksin, Huizing and Smith (2010), the virtual space as *social interaction* requires online participant observation. Therefore, this method of data collection was a match for the chosen methodology. The observations were used to

collect input concerning the context of the online setting that held the lived experiences. In phenomenographical design, this is the initial phase, the establishment of culture. These data were collected to establish a qualitative reference point of a unique online culture upon which perspectives were superimposed.

Online ethnographical studies provide social situations where researchers can immerse themselves in socially relevant experiences despite the absence of physical boundaries to define place (Markham, 2005). The internet can eliminate geographic boundaries and allow researchers to connect with more people, therefore increasing access to various perspectives. Markham (2005) proposes that computer-mediated communications may complicate the researcher's decisions because the context of the data is constructed interactively and participants are disembodied or their identities may not be stagnant. Computer-mediated cultural contexts are shifting contexts and members are transient (Markham, 2005). Therefore, defining the boundaries of the field within an online setting is meaningful because they are discursively constructed and fluid. These complexities of online ethnographical approaches had obvious impact on social interaction data collection.

Another major complexity in social interaction data collection is in determining what constitutes data. In an online setting, the "first step toward existence is the production of discourse" (Markham, 2005). Within this set of network data there were posts and comments of the discourse of the participants. Selection of data and rejection of non-data impacted the representation of the participants (Goffman, 1967). This became significant with online researchers because they were inundated with possible data sources. Therefore, the context will be less important than content yet the medium

in which the discourse was produced will not be overlooked. In addition, usage history, profile demographics, and participant interaction in the form of posts and comments were used. I became immersed in the social network culture of educators over a time period of several months before the actual analysis. I was able to understand how the system allowed users to construct their social network around their experiences and interests. This was central in allowing me to develop and map connections as a part of the ethnographic process. Usage was monitored to ensure participants selected for the interviews were active members. The usage and community posts data were linked to other ancillary system data to create themes that helped in establishing the emergence of a unique online culture. The ancillary data was also used to identify potential interviewees.

## **Interviews**

The next phase of the data collection in phenomenographical design is the perspective-seeking piece. The second set of data is comprised of one-on-one, semi-structured interviews with teachers. Generally, qualitative research makes “greatest use of unstructured, open-ended, informal interviews because these allow the most flexibility and responsiveness to emerging issues for both respondents and interviewees” (Schwandt, 2001, p. 135). Phenomenographic data collection usually revolves around interviews which have an open-ended format (Green, 2005). In this stage, interviews with purposefully selected participants will be conducted to establish the lived experiences of the participants that contribute to the development of perspectives. The interviews provide better control over the types of information received since specific questions are asked to elicit the information (Creswell, 2005).

However, the semi-structured format allows respondents to share additional perceptions in a less-directive manner. Although structured questions are planned, interviews often take different courses (Bowden, 1994). In identifying the lived experiences of the participants, a nondirective, long-interview provide a premise for open-ended questions to let the participants “choose the dimensions of the question they want to answer” (Bowden, 1994, p. 58). These dimensions play a key role in the data analysis as they “reveal an aspect of the individual’s relevance structure” (p. 58).

The purpose of the phenomenographic interviews is to reveal interviewees’ experiences with the aspect of the world under consideration. “The researcher and researched must begin with some kind of (superficially) shared topic, verbalized in terms which they both recognize as meaningful” (Ashworth and Lucas, 2000, p. 299). The interview questions “try to elicit underlying meaning and intentional attitudes towards the phenomenon being investigated” (Akerlind, 2005, p. 65). Saljo (1996) suggests that during the discourse of shared topics during the interview process, joint definitions are more likely to be established. Therefore, participants were encouraged to reflect on and interpret their way of experiencing the context in question. The interviews reveal what the participants think these experiences expose about the context itself, as well as eliciting meaning (Åkerlind, 2005).

The long interview is the method through which data is collected on the topic and is conducted only after the researcher is engaged in the bracketing process as a way of refraining from judgment and preconceived ideas about the question. The result of bracketing, or Epoche, is that prejudgment, biases, and preconceived ideas are set aside (Moustakas, 1994). To achieve this level of objectivity and “purified consciousness,” I

examined and documented previous experiences with the phenomenon being investigated, online communicative networks. This process brings about awareness which allowed me to minimize the influence of my preconceived ideas and past experiences on the interview process, on the interpretation of results, and on the writing of conclusions. The following chart describes the data collection strategies.

Table 2

*Collection Strategies for Data Collection*

Collection Strategy	Purpose	Output	Timeline
Participant-Observation (ethnography piece)	Gain awareness of the contextual environment in which the phenomenon is experienced	Contextual awareness of how social networking influences the experience of overcoming isolation; inform interview questions; compare with interview responses;	Prior to sample selection; continues throughout process
In-depth, semi-structured interviews (phenomenology piece)	Gain insights and describe variances in participant experiences of an informal professional social network	Ensure participants meet sample criteria; create pools of meaning, categories of description and outcome space for structural relationships	After participant selection as part of sample during the progression of the network
Ancillary Data (researcher notes, data from posts, network data)	Gain understanding of the contextual environment in which the phenomenon is experienced; compile individual involvement of participants, gain understanding of contribution of posts	Contextual awareness of how social networking influences the experience of overcoming isolation; inform interview questions; compare with interview responses;	Prior to sample selection; continues throughout process

### **Researcher Positionality**

My perceptions of systemic change initiatives and social networking were shaped by my personal experiences as a teacher and my work with schools to promote and develop professional learning communities. I was/am a member of various social networks for six years, and my husband developed the current social network in which the study is situated based on my current research. In addition to being an active member of this professional online social network, I have come in contact with a number of teacher participants in the study through my work with public schools. Therefore, I bring certain biases to this study. These biases may influence the perception of the data and the interpretation of others' perceptions.

Research outcomes are relational to the researcher; they are not 100 percent independent. However, by disclosing the positionality of the researcher, the procedures described are intended to "maximize the extent to which the research outcomes are influenced by the participants and to minimize the extent to which they are influenced by the researcher's perspectives" (Bowden & Green, 2005, p. 28). In preparation for writing this dissertation, I situated myself as a scholar practitioner with an interpretivist approach. The researcher's approach has an impact on the study (Langenbach, Vaughn & Aagaard, 1994); the philosophical underpinnings describing the ontological, epistemological and axiological views (Schwandt, 2001), impact the approach and frame the meaning of the data.

This perspective-seeking ontology consists of multiple, socially constructed realities reflecting the constructivist paradigm (Merton, 2003). In an interpretivist stance, reality is neither singular nor fixed, thus the notion of multiple realities.

Multiple realities are constructed from interpretations made after interacting with the context. This type of theoretical stance adopts a subjective epistemology in which the “transactions between the researcher and the research participants create understandings that are value-mediated or subjective” (Green, 2002, p. 6). The discrepancies between epistemology and ontology are, like abstract art, hard to distinguish. This study employs the ontological assumption that reality is non-dualistic, meaning both subjective and objective. Therefore, Fleener’s (2002) proposal that a participant observer could bring a new vantage point or frame of reference to the analysis could play a key role in interpreting the multiple realities of the data.

I acted as a participant-as-observer where my role was known to those participating in the study but not necessarily to the all network participants. This viewpoint allowed relationships within the system to be revealed through the dynamic processes of the complexity of the context itself. Although every effort was made to preserve objectivity, my complete submersion in the development of the context may have shaped the interpretations of the data. Throughout the data collection and analysis, I was cognizant of all potential biases and remained conscious of my own identity throughout the process.

### **Data Interpretation**

To make sense of and interpret meaning about the experiences of the participants, the phenomenographical design allowed me to identify characteristics and describe them within their contexts. For derivation of knowledge about this particular phenomenon, the focus of the research design lies in the analysis of the long interview, which investigates the impact of the online communicative network. However, the

Internet, as a unique space impacts how participants make sense of the world, has potential for changing the phenomenon in question and therefore, participant-observation data is necessary. Both contributions play a critical role in the holistic representation of the data.

### **Field notes interpretations**

The first step in the analysis process of the cultural data involves familiarization with the discourse and decision-making on relevance of collected data. Although a phenomenographic approach utilizes inductive logic, within this initial impression of the data, “bracketing” (Ashworth & Lucas, 2000, p. 300) of preconceived ideas and judgments is suggested. In addition to reading the discourse on the site itself, archived entries are also available for review. This type of textual data was reviewed multiple times for immersion and familiarization. In using discursive practices limited by exchange of text, additional analytical methods were used to interpret the data and illustrate the reality. In order to make the interpretations more grounded in the participants’ experiences, information was acquired from ancillary data to create a more accurate interpretation.

Immersion in online culture and thematic analysis based on line-by-line coding of the posts and comments, as well as interview interpretations aided in the construction of themes or categories. Demographic data was collected from profiles and interview interpretations assisted in the construction of the picture of the online culture. Data was analyzed to identify individual units of meaning, then grouped into categories based on similarities, and then themed to express meaning of culture. The developing themes were compared to current literature regarding social networks and their place within the

education profession. Additionally, variation undertones in the textual analysis were noted as they were necessary to create a holistic representation of the data.

Markham (2005) suggests cultural understanding is constructed discursively and interactively. Online ethnographers often search for authenticity through interviews offline where paralinguistic and nonverbal cues can be included, thereby adding credibility to their findings (Markham, 2003). Phenomenography includes both types of data collection and analysis to interpret holistic representations through the use of cultural immersion and interviews.

### **Interview interpretations**

The focus of the research design lies in the analysis of the long interview, which investigates the impact of the online communicative network. This iterative process measures the transcripts against two contexts: a researcher making meaning of the conversations and as the mosaic of collective narratives shown across all participants. Interviews with members of the online community provided insight into the model's success in delivery and development of an online professional space.

The framework of phenomenography is based on the description of the two elements of meaning and structure (Marton & Tsui, 2004). While acknowledging the relationship between parts and the whole, we “discern further degrees of meaning” (Marton & Booth, 1997, p. 87). Meaning is represented by individual views of participants, then as categories of descriptions, then as outcome space. The participants' views are aggregated as descriptive categories “simultaneously contrasting differences and clustering similarities” (Bruce, Buckingham, Hynd, McMahon, Roggenkamp & Stoodley 2004, p. 146). Outcome space describes the relationships

between the categories of description. The analysis process is described as one of construction (Bruce, 2002) as well as one of discovery (Hasselgren & Beach, 1997). I could not find specific step-by-step procedures to follow on the interpretation of the data like more popular methodologies provide, so working without a net, I created the following five steps to disaggregate the interpretive process.

**Familiarization.** In order to address the first element, meaning, the first step in the analysis process of the data involves familiarization with the transcripts and decision-making on relevance of collected data. Although a phenomenographic approach utilizes inductive logic, within this initial impression of the data, “bracketing” (Ashworth & Lucas, 2000, p. 300) of personal biases or experiences in regard to the phenomenon of interest is encouraged to permit patterns to emerge from the data. John Bowden (2000) argues that the phenomenographic analysis should not begin until all of the interview transcripts are ready for reading as a whole. Each transcript was read and/or listened to repeatedly for a better understanding of context and implied meanings and increased familiarity with data prior to open coding. Each new reading of the transcript brought new perceptions but also reminded me not to separate the data from its context. “There is strict and constant reference back to the data, whether in the form of open coding or in the development of categories through processes of iteration” during the phenomenographical process (Bowden & Green, 2005, p. 35).

**Pooling meaning.** Marton (1981) refers to the next step in the process as creating pools of meaning. Network documentation and interviews were analyzed and qualitative analyses conducted to provide valuable insight into the effectiveness of the project based on commonalities and categories that will be identified. The keywords

were pulled from the data for continual manual sorting of concepts. The organized data was interpreted in order to identify the various ways the participants perceive the phenomenon of the social network. Relevant passages were identified from all of the interviews, narrowed down for selection, and meanings were interpreted. In order to discern variation of patterns of the experienced phenomenon, similarities and differences were considered in the pools of meaning. These pools revealed significant variations in the qualitative understanding of the social network.

**Classification.** Refining the pools of meaning of the individual transcripts includes grouping the variations of experience into categories. The codes are then re-examined to consider referential components, critical differences in meaning and structure (Marton & Tsui, 2004). This categorization process lends itself to further classification through disaggregation of the interview transcripts. The process looks for emerging “draft categories” (Bowden & Green, 2005 p. 29) that suggested a change in the feeling of isolation and developing culture. This phase required iterative references back to the transcripts to ensure the categories are grounded. The “themes of expanding awareness run throughout the set of transcripts as a whole and each theme links a set of different dimensions of variation” (Bowden & Green, 2005, p. 121). The purpose at every stage is to move toward a set of categories of description that encompass all of the transcripts, that have coherence within each category and that differentiate between categories (Bowden & Green, 2005, p. 25).

**Categories of description.** Within this step of the analysis process, I transitioned to aggregation of the data by writing a representative description of the participant perceptions for each category. A category of description, or a sentence or

group of sentences that represent and describe the theme is developed to identify qualitatively distinct categories that describe the ways in which different people experience a phenomenon (Booth, 1997). The following three criteria for judging the quality of the categories of description developed in a phenomenographic study are put forward by Marton and Booth (1997, p. 114):

1. The individual categories should each stand in clear relation to the aspect of the world under investigation so that each category tells us something distinct about a particular way of experiencing the aspect of the world;
2. The categories have to stand in a logical relationship with one another, a relationship that is frequently hierarchical;
3. The system should be parsimonious, which is to say that as few categories should be explicated as is feasible and reasonable, for capturing the critical variation in the data.

Within this agreed upon practice, Akerlind (2005) highlights the variation in the belief in where the development of relationships among the categories should begin. One criticism of phenomenography revolves around this dilemma of imposing structures on the data instead of allowing it to emerge by looking for relationships too early in the process (Akerlind, 2005). Categories of description developed as did relationships among them. The developed categories had a logical relationship and were comprehensive dimensions of structure because they derived from perceptions of the same phenomenon; therefore, “given that the categories represent different ways of seeing the same phenomenon, links are to be expected” (Bowden & Green, 2005, p. 138). Together, the categories exemplified the variation in how the phenomenon is

experienced. The categories of description were fluid during this process as variation is recognized and coherence is identified (Bowden & Green, 2005). Finding relationships between the transcripts while maintaining the integrity of the holistic experience all while recognizing commonalities and difference are challenges of the phenomenographical design (Bowden & Green, 2005).

When elaborating on the categories of description for meaning, emphasis was placed on the differences that surface by targeting the way of experiencing as the primary focus. When describing the relationships between the categories, or structures, emphasis was placed on commonalities and differences to allow the natural patterns of variation to surface. These variations both linked and separated the categories of description (Bowden & Green, 2005). The goal was to create a set of categories of description that represent different ways of understanding the phenomenon both in a “holistic meaning and a unique combination of different dimensions of awareness” (Bowden & Green, 2005).

**Outcome space.** The categories of description, or ways of experiencing a phenomenon, were then sorted into a hierarchy based on their increasing comprehensive dimensions. This hierarchical representation, which describes the logical relationship between the categories, is known as an outcome space (Åkerlind et al., 2005). The logically related themes of expanding awareness which identify similarities and differences, were illustrated with hierarchical dimensions associated with the identified categories of description. Hierarchical inclusiveness may exist where categories of description are inclusive of other categories. This leads to the structure not necessarily being linear, but instead overlaid. However, the categories of description developed can

never form an exhaustive system for the aspect of the world, but they should be complete for the experiences of the group of participants under consideration at a particular point in time (Åkerlind, 2002; Marton & Booth, 1997).

Structure is represented as the critical dimensions of differences that are captured within the outcome space. According to Bruce, et. al (2004), these structural elements and the outcome space provide the most insight for developing an understanding of the phenomenon. Primary data analysis outcomes of the investigation were categories of description associated with the social network and an outcome space that described the relationship between the categories. Individual statements were analyzed within the context of the whole interview. Within groups of transcripts or draft categories, individual statements were analyzed within the context of the whole group of interviews. Groups of statements were analyzed within the context of the set of transcripts as a whole (Bowden & Green, 2005). The outcome space is created by identifying the relationship of the statements and what contributes to the hierarchical positioning.

Uncovering the structural framework revealed by the categories and outcome space was an interpretation of the phenomenon, the collective experience of the social media on teachers overcoming isolation. The data provided from the interviews contributed to the holistic meaning derived from the transcripts and for the comprehensive dimensions and themes exposed in the transcripts (Bowden & Green, 2005). Written as a narrative, each category of description, and the outcome space were identified and described with data from the interviews. Quotations and examples were cited as justification for the interpretation. Using a conceptual mapping strategy based

on Entwistle and Marton (1994), the relationships between people and aspects of their world were represented visually to create a holistic perspective of the phenomenon. Each category was illustrated using excerpts from relevant interview transcripts. Although not a complete picture, these extracts provided justification for a more concrete sense of the categories than a narrative. Therefore, Bowden and Green (2005) suggest phenomena mapping plays a persuasive role. At the end of the analysis process, the categories have clearly defined statements of what they are, backed up with illustrative quotations from the transcripts and a place within the conceptual map.

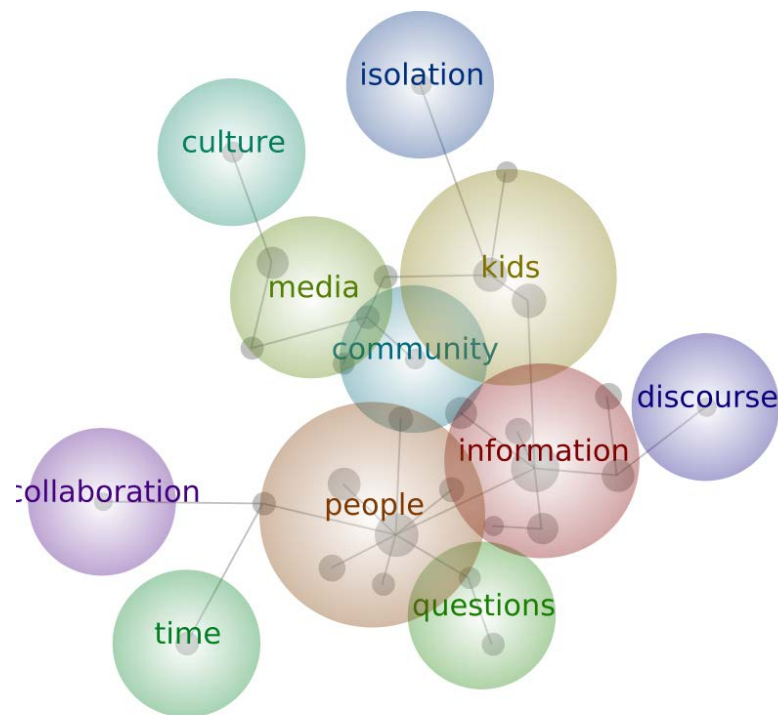


Figure 1. Map made with Leximacer software to illustrate the relationship of the data.

### **Integration**

In reporting the findings, the two stages of the data will not be matched, but overlaid to create a full picture of the range of the phenomenographical experience. A

narrative description of the complex themes and relationships contribute in developing a portrait of both the culture of the online social network as well as the perspectives of the experience. In addition to the narrative description, the literature and theory base were compared to derive meaning, support, and possibly new questions. The interpretive lens provided guidance in reporting the interpretations of the data. The research questions were addressed using the culmination of the data collected. By analyzing aspects of the culture and the phenomenon, stronger evidence emerged through the complementing data sets. Furthermore, the issues of quality in transferability and trustworthiness were a contributing factor for the use of peer data. Using multiple data sources during this phase of the study provided a more comprehensive picture of the results than either study could have done alone (Morse, 2003).

### **Quality**

To ensure trustworthiness during the process of inquiry, I was responsible for verification strategies that were “integral and self-correcting” (Morse, Barrett, Mayan, Olsen, & Spiers, 2002, p. 1). These strategies ensured that I could “address risks to rigor during the process” (Cope, 2004, p. 5). Criteria for safeguarding trustworthiness and transferability were guided by the works of Lincoln and Guba (1985) and Creswell (2009). To ensure trustworthiness of the qualitative research, multiple “validity strategies” were interwoven throughout that process to “enhance the researcher’s ability to assess the accuracy of the findings” (Creswell, 2009, p. 191).

The four aspects of trustworthiness: credibility, transferability, dependability, and confirmability, as described by Lincoln and Guba, (1985), were ever-present although sometimes varied from traditional definitions depending on relevance to the

study. Credibility, confidence in the truth of the findings (Lincoln & Guba, 1985), was addressed by checking data and sources through strict adherence to the interview transcripts, returning to the data for exact phrasing, re-reading the data as a whole and peer debriefing through the role of critical peers during analysis. Dependability, (replicability) which is showing the findings are consistent and might be expected in similar contextual environments (Lincoln & Guba, 1985), was addressed through the iterative nature of the development of categories, interviewing strategies for consistency, open-ended interview questions, and interview preparation. Transferability, showing that the findings have applicability in other contexts (Lincoln & Guba, 1985), was addressed within the delimitations of the context of the study. Lincoln and Guba advise that the key is a thorough description of the specific setting, circumstances, subjects, and procedures. To form a realistic description of the context and lived experiences, “rich, thick description” were used to provide detailed descriptions of the perspectives (Creswell, 2009, p. 191). A greater in-depth understanding of the phenomenon does not portray generalizability. As a check of content accuracy, the phenomenon was discussed and tried against the interpretations of current research. Lastly, confirmability is a degree of neutrality, or the extent to which the findings of a study are shaped by the respondents and not researcher bias, motivation, or interest (Lincoln & Guba, 1985), and was addressed with the process of critical debate with peer debriefing, the presentation of data using illustrative excerpts from the transcripts, and identifying inconsistencies in the data transcripts. Rigorous steps were taken to address the role of the researcher and minimization of researcher influence. A self-reflection to disclose bias and background of the researcher clarified

how findings were shaped. Discrepant information was included to provide texture to the perspectives and therefore reflected a more realistic or valid interpretation.

Another option for addressing the concerns of trustworthiness and transferability is to frame the study in a “structure of awareness” analytical framework (Cope, 2004, p. 39). Marton and Booth (1997) suggest the “structural and referential aspects of human awareness are the dialectically intertwined aspects of a way of experiencing a phenomenon” (p. 100). Using a structure of awareness, for which variation theory provides a framework for interpreting the data, provided a broader view of all the aspects of the research. This framework helped ensure the trustworthiness of the study.

The issues of generalizations and trustworthiness are disputed among phenomenographic researchers (Akerlind, 2005; Bowden 2005; Sandberg, 1997). Phenomenographical research has fallen under attack for the understanding that categories of description are interpretations of the researcher. However, because of the nature of the epistemological assumptions underlying this methodology, which is that of an interpretivist format, it is important to recognize that the purpose is to collect from multiple participants contributing their own individual interpretations of reality, and therefore must be reconstructed by the researcher (Sandberg, 1997). Sandberg (1997) criticizes the interjudge reliability process for replicability as the phenomenographers did not independently judge the data, but refer to the original researcher’s categories of description. The verification processes are completed after the data set are interpreted instead of as a part of the process itself. Therefore, because interjudge reliability is more of a positivist/objectivist approach, an approach which is more suited toward an interpretivist study was included instead. Peer debriefing provides an external

evaluation of the research process (Glesne & Peshkin, 1992; Lincoln & Guba, 1985; Maxwell, 1996; Merriam, 1988; Newman & Benz, 1998). The process is not empirically based but logically based (Onwuegbuzie & Leech, 2007). Peer debriefing was used as the themes emerged in the culture and categories of description emerged from the interview and field notes data. Lincoln and Guba (1985) describe the role of the peer debriefer as the “devil’s advocate,” a person who keeps the researcher “honest”; who poses difficult questions about the procedures, meanings, interpretations, and conclusions (p. 308). During the interview and field note category development process itself, an impartial colleague examined the transcripts, data interpretations and final report looked for biases or assumptions (ThênGuyin, 2008). This process included seeking out counterexamples and validating interpretations with a peer researcher which encouraged me to “transcend my preconceptions” (Pidgeon, 1996; Stiles, 1993). Akerlind (2005) also suggests interjudge reliability to explore the data from a series of various perspectives to help clarify aspects of the categories of description. However, to assist in overcoming issues of trustworthiness and transferability, Leximancer software was used instead to create a visual map of the categories of description for comparison. Penn-Edwards, in 2010, tested the software with phenomenographical research and found it to contribute to the trustworthiness of the research. In qualitative research, transferability has less to do with results and more to do with procedures. For this reason, Gibbs (2007) suggests transferability procedures that include the constant-comparison method for remaining true to the codes through the duration of the procedure. Sandberg (1997) suggests interpretive awareness to ensure the interpretations are controlled and checked throughout the process. To aid in interpretive

awareness and transferability, Leximancer software was used in place of interjudge reliability. All of these strategies aided in self-correcting as the data was processed.

### **Summary**

Following the phenomenographical approach, data was collected in two stages. The culture and lived experiences were described following standards for the selected methodology. The data was then overlaid to create the outcome space. Several steps were taken to ensure quality of the data collection and interpretation. The following two chapters describe the data that was collected and then interpreted.

## CHAPTER 4

### Description of Culture

The findings of this phenomenographical study are presented in chapters four and five which answered the question: *What are the lived experiences of teachers participating in an online meta-professional learning community culture designed to mitigate isolation?* Chapter four provides demographic data that depict the participants in the study who are then categorized based on the roles they assumed within the online culture. Phenomenography is the study of a phenomenon through the viewpoint of the participant culture (DeMoss & Vaughn, 2000). Therefore, the context surrounding the experience contributes to the individual narratives. This chapter also offers the representation of culture through individual accounts, like that of ethnography. The data was then organized into a comprehensive cultural interpretation.

Ethnographers describe a culture as a holistic representation through the immersion with the group at an individual level (Moustakas, 1994). Social networking has been described as an “open culture where anyone can get involved and everyone has the potential to be seen or heard” (Beer & Burrows, 2007, Sept 30). The sociological impact on the digitization of culture blurs lines between mainstream and privacy, consumer and producer, and even roles of participants (Beer & Burrows, 2007, Sept 30). As such, the online culture of a social network is fluid and ever-changing. The participants’ statements cannot be segregated from the online culture and therefore a description of the online culture is essential in creating a complete picture of the collective lived reality (Marton, 1981).

Phenomenography describes and interprets a culture in context. The setting of the current study was an online social media site. Social media demographics from Pew Research often refer to gender, race, age, urbanity, education attainment and household income in order to create a landscape of social media users. In order to better understand and examine the people and trends of the social network site that was the context, I chose to represent the socio-culture with noteworthy demographics that were representative of education. The U.S. Department of Labor (2011-2012) reports that a majority of K-12 educators are women at 78%. Therefore, a majority of the participants for the study are female at 80% which is a valid representative sample. The participants' professional experience ranged from 1 year to 27 years. Ten participants represent rural schools, six participants were selected from suburban schools and four from urban schools. Participants represented varying grade levels from Pre-K through 12<sup>th</sup> grade as well as various content areas and specials. Twelve contributors represent elementary perspectives, while four represent middle school and four represent high school perspectives. The participants all hold college degrees but 45% have or are pursuing a Master's Degree.

As a college-educated pool of participants, the culture of life-long learning and respect for research were evident in the posts and comments. A great deal of emphasis was placed on positive uses of technology and authentic activities for the classroom, as most teachers were introduced to the network through a technology grant their school had received. The importance of education, both for participants and their students could be seen from the early stages of cultural development. Sharing of resources,

particularly new technology tools, was common on the site. Professionalism was center for the site's cultural development.

Twenty participants were selected based on their current status as an employed teacher and the Boomrrang network site's usage statistics log. Using number of posts, comments and log-ins as guides, participants were purposefully selected for representation of variation. Four participants were chosen for the high number of postings, twelve were chosen for the middle range of postings, and four were chosen for the few postings or comments. Unfortunately, because an email notification was sent out for every post and comment, participants could read the information without logging-in so a true representation of lurkers (those who do not contribute posts or comments) was not possible with the given statistics. Several participants commented in interviews that they liked that feature because they didn't have to check back to the site every day because the information they needed came through an email. The total number of teachers learning informally through these notifications is currently unknown; however, in order to have representation of the lurkers, participants were chosen who had logged-in a substantial number of times but had never posted or had posted only once.

Participants took on various roles within the network which kept the culture fluid and ever-changing. In the early development stages of the network, I took on the role of producer for most of the content. I connected ideas and people, I communicated across the network of schools, provided support and motivation to individuals and worked to build capacity. A small group of power participants took on lead roles in the network promoting inquiry, discourse and collaboration. A larger group of the

participants took on more of a casual consumer role, making comments and minimal posts. The largest group of the participants only consumed information as lurkers. The roles are interrelated and necessary but not stagnant to the developing culture. An event or idea may inspire a participant to suddenly comment or post who may normally only lurk and consume.

Participation inequality is consistent across different types of user generated content mediums. Power contributors build the most compelling content and help promote [the] website (Suster, 2010). These participants find enjoyment in the creation of content, the status attained from their contributions, self-promotional gains, and networking (Suster, 2010). User generated content sites rely on these power contributors for sustainability. On Boomrrang, these participants are identified as Kristen, Addy, J.K. and Lucy. Casual consumers are described as those who have had a positive or negative experience and want to share their feelings or beliefs or they have a passion for the topic (Suster, 2010). Casual consumers identified in this study are Esperanza, Chet, Elizabeth, Chloe, Natalie, Wade, Jill, Drea, Ellen, Sherry, Mark, and Sally. Lurkers are those participants who do not contribute anything to the content but may consume all content available (Suster, 2010). Lurkers make up the largest part of the social network but contribute the least. Lurkers identified for this study are Maria, Betsy, Karlie, and Peggy.

This pattern follows participant inequality standards as described by a study by Nielson (2006) “the user generated content categories that follow the 1/9/90 rule where 1% are power users, 9% are casual contributors and 90% lurkers.” Online social networks rely on users to contribute content; most don’t participate and simply lurk in

the background. User participation studies show that 90% are lurkers who read or observe but do not contribute. Those whose activity contributes “from time to time” (Nielson 2006) is equivalent to 9% of the user population. Only 1% account for most contributions on a network.

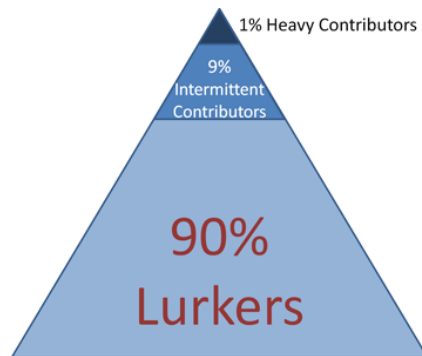


Figure 2. Standard user participation (Nielson, 2006).

In addition, statistics also point to a similar rule where 90% of postings come from 1% of the users. In this same rule, 9% contribute 10% of the content and where the remaining 90% of the users contribute no content. (Nielson, 2006)

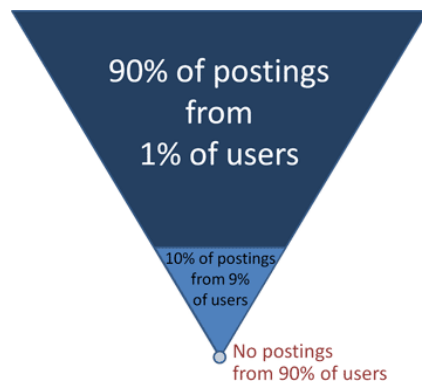


Figure 3. Standard content contributions (Nielson, 2006).

These standards are somewhat consistent across studies of multi-user communities and social networks and even Amazon book reviews follow a similar pattern. However, sites such as Wikipedia and blogs have an even lower percentage of contributors.

Boomrrang participants totaled 626 users. Unlike the standard contributor ratio, the top

1% of users only added 54% (521) of the 970 posts and comments. However, the top 10% of users contributed 89.6% (870) of the 970 posts and comments. Although the power contributors actually produced less than the rule's contributor ratio, the top 10% (power contributors and casual consumers) supplied additional posts contributing to the 90% total. The remaining 10% of posts were users who I am categorizing as lurkers who posted or commented one time (or less). In order to avoid a biased understanding of the community by relying only on those perspectives of people who post a great deal, participants were selected that represent each of the categories.

### **Individual Textural Descriptions as Vignettes**

Each participant is described to create a portrait of his/her demographic as a contribution to the culture in the form of participation and role in the network. Pseudonyms were chosen by the participants. Each participant is an artist creating a representative illustration that captures the moment in their own way. Data to form the vignettes were taken from field notes, interviews and profile information in an effort to piece together a complete montage of the cultural insights and individual experiences.

#### **The Power Contributors**

**Addy.** Addy is a middle school science and technology teacher having been in a rural district for 18 years. She is considered a skilled leader in technology and even provides professional development through the Career Tech Centers. She is highly active on Boomranga, Twitter, Facebook, and Pinterest and motivates others at her school to participate as well. On the Boomranga network, she is considered a power contributor. Addy describes the culture as, "sometimes scary, amazing, it just blows my mind that you can get information whether it's just general knowledge, or somebody

sharing something with you immediately....it opens the doors to different people, different ideas.”

**J.K.** As a 20 year veteran, J.K. works as a library media specialist at an elementary school in a 6A district. She does not have a team but does attend every grade level’s planning meeting. She is a strong technology leader at a progressive school. She serves on the school technology team. She uses Facebook, Twitter, Pinterest, and Boomrrang. She is considered a power user within the Boomrrang network. J. K. describes the culture as “More of a comfort sharing and speaking your mind...a connector.”

**Lucy.** Lucy is a third grade teacher in a suburban, elementary school in a 6A district with 22 years of experience. She is a strong technology leader at her school and an early adopter. She serves on the school technology team and is identified as an innovator. She uses Facebook, Pinterest, Boomrrang and has tried Twitter. She is considered a power user on Boomrrang. She describes the culture as “...it is nice to have people out there who say ‘No, let’s try it this way’ or ‘Have you thought about doing this?’ People are more positive about it so [the culture] is more inspiring.”

**Kristen.** Kristen has taught 3<sup>rd</sup> grade, middle school language arts, Title I and has served as a curriculum coordinator as well as professional development coordinator over her 20 year career. The 5A school district is located in a rural area. She is highly active on Facebook and is a power user on Boomrrang. She is a strong content leader and has completed a Master’s Degree in Administration. Kristen describes the culture as “a group of people who are trying to achieve higher levels of learning...their perception is that they are anonymous and so they will say and do things on social

media like Boomrrang that they wouldn't necessarily feel comfortable saying or doing or asking in a small group setting like a PLC or team meeting or anything else like that."

### **The Casual Consumers.**

**Esperanza.** In a 6A suburban high school, Esperanza is a first year teacher. She is considered a digital native using Boomrrang, Facebook, Twitter, and Pinterest for personal use and even using social media to keep in communication with her students. She is highly skilled as a first year teacher as she interned at a University Partnership for Education where she was exposed to recent technologies, authentic teaching strategies and leadership development. She was assigned a seasoned mentor teacher her first year of teaching language arts to both pre-AP and AP high school students. She is currently pursuing a Master's Degree in Education. In the Boomrrang network, she is considered a casual contributor. She describes the culture as "unestablished. I think it's reflective of multi-cultural and multi-generational but still undefined and ever-changing."

**Chet.** In a rural, 2A high school in Oklahoma, Chet is a twelve year veteran teacher who has had another full career before teaching. Chet is highly active with social media using Boomrrang, Twitter, Facebook, Pinterest, and Instagram even using them with students. This library media specialist provides a great deal of training in technology and the arts for the school district and is considered by peers to be a leader in technology. On the Boomrrang network, Chet is considered a casual contributor. Chet describes the culture of Boomrrang as "always evolving - never say it has developed or has fully developed."

**Elizabeth.** Elizabeth serves as the gifted teacher in multiple elementary schools in a 6A suburban district. She teaches PreK-5 and collaborates with the only other gifted teacher in the district. She is considered a leader at her schools in technology, integration, and higher-order thinking. On the Boomrrang network, she is considered a casual contributor. However, she is highly active on other social media sites such as Pinterest and Facebook. Elizabeth adds, “It is new. It's completely different. There is so much information you can find and we are not even grasping the amount of information on the internet and these kids...their normal everyday life involves digital environments.”

**Chloe.** In a rural 3A district with access to suburban areas, Chloe is a library media specialist. She has served in the role for twelve years in a high school setting. She is active on Facebook, Boomrrang, and has even started Facebook pages for her school. She serves as a researcher on techniques and professional development for her school. She is a casual consumer on Boomrrang but has been a strong provider of comments and posts.

**Natalie.** Natalie is a 9 year veteran teacher and instructional technology specialist for a small, rural, dependent school district. She provides professional support for technology and professional development for teachers within her PreK-8 district as she finishes her Master’s Degree program. She is a leader in technology, research, and professional development opportunities for her school and district. She participates in Twitter, Boomrrang, Facebook, Pinterest, and Edmodo regularly. On the Boomrrang site she is categorized as a casual consumer although she revealed in the interview that she lurks and gets ideas quite often.

**Wade.** Wade is a 7<sup>th</sup> grade science teacher in a small, rural, dependent school district. He is highly active on Twitter and uses Edmodo with his students. He also uses Facebook and Boomrrang. He revealed in his interview that he made purposeful decisions to keep Twitter and Boomrrang strictly professional and does not add personal details to either site. He is a strong technology leader within the district and is an obvious early adopter. He is considered a casual consumer on Boomrrang. Wade describes the culture as “putting yourself out there trying to stay up with the times.”

**Jill.** Jill is a 10 year career teacher of a dependent elementary school located in a rural area. She currently teaches math and science for 6<sup>th</sup> grade and is in the last semester of her Master’s degree program. She uses Facebook daily and Twitter and Pinterest weekly. She currently uses Edmodo with her students. She is a casual consumer on Boomrrang. Jill describes the culture as “very positive and very uplifting culture because you have such a specific commonality. I feel like I have lifelong friends that I don’t even know what they look like but we share something in common which is a deep love for both education and mathematics that I would never have had just as a classroom teacher without social media.”

**Drea.** Having taught early childhood for 7 years, Drea has been a part of a suburban school district, rural school, as well as a private school. She is an innovative, authentic teacher and uses technology within her classroom regularly. A technology and curriculum leader in her school, Drea is a regular user of Facebook and Pinterest. She is considered a casual consumer on Boomrrang.

**Ellen.** Ellen is a speech pathologist in an urban 6A district. She has her Master’s Degree and National Board Certification. As an elementary speech

pathologist, she has only a few other pathologists available for collaboration. She is a casual consumer on Boomrrang. She is active on Facebook and Pinterest personally but uses Boomrrang professionally.

**Sherry.** Sherry has a Master's Degree in administration and has taught for 24 years. She has taught elementary and middle school in a rural, dependent school district. She is a technology leader at her district and school. Sherry is considered a casual consumer on Boomrrang but is highly active personally on Facebook and Pinterest.

**Sally.** Sally is a first year teacher in an inner-city urban elementary school. She is enthusiastic and highly-skilled in elementary pedagogy. She serves on the school technology team and is considered a leader in technology, as a digital native. She participates in Facebook, Instagram, Pinterest, Boomrrang, Twitter and Snap Chat. Professionally she uses Boomrrang and Twitter. She is considered a casual consumer on Boomrrang.

**Mark.** Mark is in his 8<sup>th</sup> year of teaching at an elementary school in an urban school district. He has experience teaching only 3<sup>rd</sup> grade. He is an active member of the technology team for his school and is a strong leader within his school. He is an active member of Facebook, Boomrrang and occasionally uses Twitter.

### **Lurkers**

**Maria.** Maria, a 26 year veteran teacher in a dependent rural school district, has held several positions in that time including gifted, Kindergarten, technology, and 6<sup>th</sup> grade. She is active on a number of social networks including Facebook, Twitter and Boomrrang. Maria is considered a lurker within the Boomrrang network. She is a

strong technology leader in her school and district who holds a Master's Degree. Maria describes the culture as "I see it as growing and very open. The rules are being defined all the time and it depends on who you talk to and what the rules are. It is exciting I think."

**Betsy.** A lurker on Boomrrang, Betsy is a user of Pinterest, Boomrrang, Twitter and Facebook. Professionally she leans toward the use of Twitter and Boomrrang for networking, research, professional development opportunities and new trends. She has taught kindergarten for 13 years acting as a strong technology leader at her school. She has a Master's Degree and has moved into an administrative position for the next school year. The culture is described as "[people] have the ability to pick and choose who they want to get information from which makes it really nice. You can go to certain places and it's more relaxed and for instance if you just go to a teacher blog you know you can just read some general things that they're doing in their classroom and get ideas and then you also have the ability to go and search out people that have more backing behind what they're saying."

**Karlie.** Karlie has taught middle school language arts and math and has been a library media specialist in various school districts including rural, urban, and suburban, and currently serves as a tech specialist. She is an avid user of Facebook and Twitter and is self-described stalker, she is considered a lurker on Boomrrang. She is acknowledged as a technology leader and is an early adopter. She has a Master's Degree in Administration.

**Peggy.** A 27 year veteran in middle school and high school in a rural 3A district, Peggy believes that if she had had a social network like Boomrrang when she

first started teaching, then she would have been more confident in her early years of teaching and believes it would have helped with sustainability of teachers. She uses Facebook, Boomrrang and Pinterest but is a late adopter of most. She is considered a lurker on Boomrrang. Peggy has her Master's Degree. Peggy describes the culture as "fluid but an atmosphere you can count on for support. I am not sure how I survived my first years of teaching without the support outside my niche."

### **Summary**

Within the culture of the online network subcultures emerged in the form of participant roles. In order to understand the culture made up of individuals, one must be able to understand the roles of the participants and their contribution to the collective experience. This interdependence of individuals within the network as well as their individual profiles as vignettes served as the lens for viewing the snapshot of the culture at the time of data collection. Moving beyond demographic information and roles of participants, chapter five paints lived experiences of the participants to derive meaning and support of the holistic representation of the online social network. The meanings add dimension to the existing cultural perception.

## **CHAPTER 5**

### **Findings**

Through the viewpoint of the participants of the culture, the online social network was experienced in various ways. The categories of description were aggregated from the individual accounts and presented in this chapter. As a result of the data analysis, five categories of description emerged as the lived experiences of teachers in an online social network: affinity, professional growth, outside expertise, discourse, and collaboration. I provide the descriptions of the findings, the interpretations of the relationships of the data and the hierarchical representation within this chapter.

Confirming the findings of the research question, the participants supported the use of the online social network site as minimizing isolation through their rich descriptions of the fluid culture of collaboration of the developing meta-professional learning community. The introduction to the social media site, Boomrrang, redefined communication and access within a professional network of teachers. This section represents the five qualitative variations of experiencing the online social network as extracted from the twenty interview transcripts. Based on the thematic analysis of the participants' reflections, the experiences indicated commonalities between the categories and research questions, making overlap evident. This illustrates the synergistic relationship between the social network and meta-professional learning community development.

I aggregated the data in each category by writing a representative description of the participant perceptions for each category. A category of description, or a sentence or group of sentences that represent and describe the theme was developed to identify

qualitatively distinct categories that described the ways in which different people experience a phenomenon as seen in Table 3. From the participants' experiences, five categories emerge: teacher collaboration, teacher discourse, access to outside expertise, catalyst of professional growth and affinity space. Each category is then expanded upon where verbatim quotes from interviews and online posts provide variation in the hues of the experiences. These categories of description are my way of expressing the variation in perceptions.

Table 3

*Lived Experiences of an Online Social Network Expressed as Categories of Description.*

Category 1 Affinity	The online social network is experienced as a resource that promotes teacher confidence in both the acquisition of classroom-tested materials and the participation in social media.
Category 2 Informal Professional Growth	The online social network is experienced as a catalyst for professional growth in the forms of professional development, new resources and networking opportunities all informally, and self-directed.
Category 3 Outside Expertise	The online social network is experienced as a network to purposefully access experienced teachers who offer a varying perspective and are more receptive to sharing ideas or answering questions.
Category 4 Informal Learning as Discourse	The online social network is experienced as a format that promotes discourse in a shared leadership capacity by fostering a sense of personal accountability and anonymity.
Category 5 Collaboration	The online social network is experienced as a place for collaboration without judgment or competition.

### **Category 1: Affinity**

The online social network was experienced as a resource that promotes teacher confidence in both the acquisition of quality assured classroom-tested materials and the participation in social media. In addition, a sense of community developed as a result of the affinity space. The social network promoted change by increasing confidence

and affinity. Confirming the findings of the research question, the social media network contributed to the development of a meta-professional learning community culture.

Participants have confidence in the quality of the postings as Espseranza explained,

It doesn't let me go stagnant. I come up with new ideas and use other peoples' ideas and make them my own. Who gets on social media and posts a crappy lesson? There's anonymity but no one wants a crappy lesson posted to their name or attached to them somehow. Typically the only things that are posted on social media are things that have been successful in the classroom so it gives the users a lot of confidence. No one posts things they aren't proud of. So, I can have more confidence that it will be successful and has been tested.

Peggy reiterates this concept but expresses it differently and notes that confidence is cultivated knowing that there is access to experienced professionals. She clarified,

I just learn so much from people who have had a lot more experience [with technology] than I have or maybe they haven't taught any longer than I have but they have had an experience or a good answer for my problem or question or a great suggestion, link or something that could be helpful.

The quality of the professional resources promotes confidence in the network. Trust is built within the community because the posts add value to the community.

Several participants also focused on the increase of personal confidence after participation in a social network. Lucy contributed,

Sometimes I think of something to do and I get out there and look to see if someone else has tried it. I also can find out if they had they had good luck

what kind of problems they have identified. So, it builds confidence in trying new things.

Personal confidence was gained as Esperanza added a specific example,

I think social media has made me clearer in getting my point across to my students and coworker; it has also made me more confident. When I taught Fahrenheit 451 everyone did the same project but I got on and I looked at different discussion and websites and I ended up creating a list of four different projects. I incorporated peoples' ideas that I found online and there was a lot of success with it. They were engaged. It gave students voice. It was successful especially compared to my coworkers who do not use social media that use the same material over and over again.

Personal development and personal confidence were expressed by participants after interacting in the online network.

Confidence grew from the sense of community that was formed within the affinity space. The trust established within the community was explained by Kristen, "it helps that boomerang is specific to education. Just being able to have the same end goal in mind with most of the people who are on Boomrrang is beneficial." The sense of a developing meta-community was evident as Lucy explained,

I think it is a good idea and a good community if everyone continues to get on there and put their ideas on there and share. Obviously it will be different this year with new people and maybe some of them will have questions about stuff we've actually used in the classroom that we already have expertise in.

Sherry also described the development of a shared vision within the space showing that the network reflects an affinity space,

It is definitely a professional learning community because you have people who are on the same page, maybe not all at the same level, but who want to improve and want to push kids or meet kids where they are at the very minimum to take them to another level.

The network was recognized as an emerging professional community. Sally compared Boomrrang community development to other online social media as she stated,

It's more of a learning community I would say out of all of them, it is closest to a PLC because there aren't a lot of outsiders, parents, or children but you have other educators. They realize that [the participant] could be a coworker so it is kind of like a cocoon.... Boomrrang is probably the safest.

Shared vision and the sense of community materialized as participants felt a sense of belonging and knew that their needs will be met.

Field notes suggested a newfound interest by the teachers in learning about social networking due to the interactions online. The sharing of resources and knowledge also provided an opportunity for teachers who are not as technologically inclined to participate in social networking at a higher level. Chloe shared her endeavors as she tried to incorporate Edmodo into her book clubs. Drea also expanded on different ways to use social media to meet needs of teachers within her school as she believes more participate online. In addition, the growth of confidence of the teachers to share resources on social media on their own was noted. Elizabeth shared, "So many people are so hungry for good stuff. If you put something good out there and you start

getting tons of hits it does boost your confidence a lot.” Therefore, the online community provided the gate key to start participating in social media outside of the established online community.

The affinity space that was created in the online network provided a shared purpose, a sense of community and promoted trust amongst its participants. Teacher confidence and beliefs about technology were influenced by the online network. Confidence in the quality of the online content was also an additional sub-theme. Interviewees talked at length about the characteristics that described the social network as a safe environment that replicate various stages of community development.

### **Category 2: Informal Professional Growth**

The participants supported the use of the online communicative site as impacting the development of teachers. The most dominant sub-theme revealed that the use of online communicative technologies encouraged teachers to share experiences and resources with peers. Every participant that was interviewed expressed that they have directly benefitted from the sharing of resources and knowledge.

Most teachers viewed the network as a space for professional growth. Jill framed her account around access to other educators. Access provided opportunity. Her statement provides additional details,

Educators are educators and you can learn something from any educator but when you get into the very detailed very specific parts where your part, you really get that depth of connection that you don’t necessarily get with teachers from other content.

Professional growth can be informally sharing ideas and resources. Chet added, “You are always learning on social media. Anytime you are interacting with other people, even if it is online, you are learning. People are more comfortable because it is informal.” Another similar comment provided insight into the professional growth of teachers in an informal environment as Kristen stated, “Seeing others post things, different kinds of apps or activities they have done on Smartboard or just ways that people are using it that benefit other people looking at those, asking questions, and then trying it myself.” J.K. used Boomrrang for “sharing ideas, sharing links, talking about conferences” and then specifically searches out information to post for others such as “scholastic, National Board, news” then she looks for “books and shares occasional information authors post.” In addition, Esperanza provided insight to support the network offers to first year teachers as she stated,

It’s given me really good ideas. As a first year teacher, I might choose something particularly overused or boring. I could take something that was given to me and I could get on social media and I could find something that maybe I could blend the two together and make it more interesting or innovative and play to the kids media preferences better.

Professional growth as informal learning was proven to be a leading factor in teachers’ participation in the network. Support in the form of various postings, resources or networking opportunities was valuable to first year teachers as well as seasoned teachers.

Technology integration discussions that took place within the network were defined by Lucy, “On Boomrrang I post whatever technology stuff we’re doing.

Whatever is new... things that worked for me that I haven't seen other places." The online community has introduced teachers to a number of new programs that are available to teachers that they would not have had exposure to if it had not been for the online collaborative. In her interview Elizabeth noted,

On Boomrrang, I look for stuff for school on there. It is difficult to find good resources for gifted in elementary school. Boomrrang was really cool. I tried out some different apps that I found on Boomrrang. It is a place to go to find things only for school. Quality control on Boomrrang [is higher] compared to Pinterest when links don't work and it is not always easy to find things in a timely manner. On Boomrrang, however, I did find some really cool resources that I was able to use in my classroom or that I was able to bookmark for later that I could use with my kids. So it is a good site. The site is a great idea and I found it really helpful for school stuff.

The sharing of new resources played an important role in both the development of the community and the professional growth opportunities for teachers.

Time was a large contributor to participation. Opportunities for direct access to the sources of information, the omnisynchronous nature of social media, and the interaction of multiple social media platforms provided time-saving attributes that drew more participation. Lucy provided details about the network as a springboard to promote discourse and even collaboration for professional growth opportunities as she contributed,

I use social networking a lot more because it is easier than trying to find blogs or remember various passwords. I can also "pm" people if I see something I am

particularly interested in ...like if there is a lesson I really liked, I could get on there and converse with just her and get more detailed information and she could send me pictures of the project.

Several interviewees also focused on the asynchronous attributes of the network and the importance for professional growth to take place when the teacher is free to reflect about needs, application and possibilities of learned material. Elizabeth shared her story,

It is satisfying to be able to get information quickly and that you can get on any time of the night. You can do it when it's convenient for you. It is not a 4:00 meeting that you have to schedule everything around. It is satisfying to know that you can get on and get information so quickly. A wealth of knowledge and it is satisfying to know that there is a resource out there that can help me learn to do things.

Insight into the crossover of the various types of social media and how they interacted for personal growth was illustrated by Esperanza's quote,

I can look at other groups... get ideas... maybe different resources that people have used. With Twitter, I use it to keep up with things that are going on in the school. I use Pinteret to pin ideas. So maybe a link that I go to on Boonrrang might lead me to a link I really like and I use Pinterest to pin it to my educational board.

Professional growth at the time of need was a trend in the data. The convenience that social media offered was a contributing factor to the network's success.

Interview data suggested professional growth was one of the strongest categories identified for the purpose of participation. In short, the participants' involvement in the online community provided ample opportunities for additional online support from subject matter experts in the teaching field. This category is by-far the most dominant which provides awareness that teachers purposefully seek professional growth informally online. These findings confirmed the potential for use of online technological resources for teacher growth and development. This self-directed pursuit coupled with a social media platform is the underpinning for meta-professional learning community development.

### **Category 3: Outside Expertise**

The next category refers to social media creating access for teachers. The online community provided insights into other teachers' experiences. Many of the participants expressed how the use of the online community allowed them to network outside their own school and access experienced subject matter experts. Accessibility through social media allowed users greater access to resources, both people and products. In addition, a broader perspective was the dominant subtheme. This directly related to answering the research question in that the network extends beyond the walls of the classroom to mitigate isolation. Sharing had a positive influence on the teachers in a number of ways including student impact, the progressive development of a professional learning community, redefined and promoted communication and collaboration at their site from access to various perspectives. This is illustrated in Ellen's reflective account,

Having a broader circle other than the people you are in contact with all of the time so [I have access to] people in different parts of the state or different

districts that are trying a lot of new things that I may not necessarily see with my colleagues. Just that bigger area provides so much more to help me than my local colleagues.

Student benefits were also contributed to outside expertise. Drea suggests that her students have directly benefitted from outside expertise as she described, “the kids are no longer chained to one teacher all day in one classroom. They get extra support from other people [through online contacts] so it benefits my children as well as me.” Another similar comment provides insight into the professional growth of teachers as well as student growth. Jill identified the just-in-time access to outside expertise as well as how it benefitted her students as she stated,

...but when you’re sending emails during your planning time and they’re responding...even in the same building the social networking helps because you don’t have the common time but even outside of that, I speak to people outside my school and get a completely different perspective and my kids chat sometimes even with different classrooms and they just get exposed to more.

Direct student benefits were acknowledged by participants of the online social network and therefore I can conclude that trust existed and the participants valued the expertise on the network.

The online community highlighted other teachers’ resources. Most of the participants expressed how the use of the online community allowed them to network outside their own school. Chet focused on accessibility as she described the network, “it just keeps evolving and growing. I have more access to you through social media than email. Now I can search and find someone instead of having to know their email

address. So I have more access to people.” Esperanza benefitted from the experience of other teachers,

[In the network] you still get experienced teachers. It is not all a first year teacher cult. You have experienced teachers, and I think they are teachers that are probably a little more outgoing than what you would find amongst coworkers...not that I don't have outgoing coworkers....but because they're on social media they're more receptive to ideas or questions.

Kristen shared a similar experience as she commented,

I think it helps me grow professionally by connecting with people outside my circle, being able to get ideas from people who are doing the same kinds of things I am doing but I don't work with them all the time. Changing my teaching and putting things on my radar that I wouldn't know otherwise.

Lucy focused on staying connected with people. This sub-theme specifically signified the development of a meta-professional learning community development through access, networking, and perspective seeking responses. She elaborated,

I get a lot of new ideas from people and just conversations back and forth when you work with the same people year after year after year that are doing the same thing year after year after year. It is nice to go clear outside your area and say “What are you doing over here?”

Several participants turned to social media to learn what their peers already knew or had expectations of the participant to know. Esperanza responded strongly as she concentrated on access to professional, non-judgmental advice,

No judgment [is what the social network offers that is different from my teammates]. Sometimes if you ask a career teacher (even if they are incredibly nice and incredibly wonderful teacher), I feel like they just think that it's new age that it's something that might be cool now but five years down the line my lesson is going to be outdated and theirs is going to be successful. With social media I can just logon, find some ideas and post and idea of my own where I can get direct comments and feedback. There is no judgment really involved.

A network of peers who shared the same passion and vision became a steadfast thread throughout this category. Non-judgmental, accessible peers promoted confidence in the network as an informal professional development platform.

The most dominant subtheme of this category was ascertaining various perspectives. The lived experiences suggested that seeking outside expertise for perspectives provided a platform for participants to uncover information they may not have otherwise discovered or provide an alternative way of addressing a situation. Drea explained, "I think maybe it has broadened my horizons to things that maybe I hadn't thought of or a different perspective on how to approach something." Sally explained further,

Sometimes when you go out on social media and you are following or conversing with someone from another state, they see things differently than what you're used to in your everyday life. So they can bring a different perspective or maybe have an idea of how to do things differently. It allows you to step outside that box and see things from a different way.

A central sub-theme in this strand, it was important to note that Chet stated the social media network provided access to “different disciplines and different types of people; I can interact with people that don't look like me. Diversity of people and materials are the most valuable resources for professional growth.” Elizabeth also contributed,

It is a different perspective. It is nice to get fresh ideas and hear what someone else is doing. Sometimes I can find something that it is working for my area of teaching that I can change a little bit to incorporate with my kids. It is nice to get some ideas from different places. Sometimes it is limited because I am teaching a very specific field, elementary gifted. I only have one other teacher in my district that I can collaborate with so it is very hard to find gifted resources for elementary kids.

Betsy also looked for perspective from other districts, “I headed up Kindergarten and 2nd grade, so a lot of what I went out to try to find was common core related to standards based reporting for 2nd grade and how other districts in our area are doing that.” J.K. realizes that it gives her a broader perspective as she illustrated in her comment,

The network has given me outreach and more wide connections. Feedback from multiple grade levels and more of a discussion [are possible] because you can see what others have replied. So, when you are trying to get feedback it gives you more of a group feedback. It's more of a community feel.

Chet stated “social media lets me interact with people from everywhere besides just my neck of the woods.” Wade stated,

I just like it because you can get more; a broader view of the subject instead of X County, Oklahoma. We get a much wider perspective of the world than just our little bitty area. Most of our kids have never been out of Oklahoma let alone across the big pond.

Outside perspectives provided teachers with tools for their craft and supplementary resources for their classrooms. In addition, Addy stated that learning about various perspectives promoted her self-efficacy, “I think because I know it's making me a better person. I am such a better teacher now than I was five years ago. Like I said before, it just opens up conversations and seeing things in a different way.”

Seeking an outside perspective was a significant motivator for the participation in the online network. Access to experienced teachers and their resources was a common theme among the participants. The data also suggests outside expertise is wanted to validate what may be unpopular or progressive perspectives and promote self-efficacy. In addition, access to non-judgmental experts provided a safe environment to ask questions in order to preserve reputations with colleagues.

#### **Category 4: Discourse**

Another major theme of the research findings concentrates on teacher discourse. As teachers started sharing ideas and participating in multi-way discourse they discovered the network provided a certain anonymity that Esperanza described as “freeing.” This platform was a sounding board for validation of ideas or for challenging the status quo by seeking perspectives and input from strangers. The network served as a dialogue facilitator to exchange information between teachers conveniently. Within this category, shared leadership roles start to emerge.

Participants focus on the convenience of discourse on social media as Betsy stated,

Any time anymore when you have a question or have an idea it's so easy instead of going to a resource book on your shelf, you just type it in and get ideas from other educators around the state, country and the world... instead of having to go to the local library.

Several participants revealed that the social network increased efficiency due to immediate access to information. This point is made by J.K. as she shared,

My teaching has changed because of communication. It is good because we are always plugged in but bad because we are always plugged in. You have more contact on your own time for immediate usage. I can get on there and immediately get some questions answered or immediately contact someone. It is more of an instant gratification but at your own convenience.

Discourse for efficiency and convenience of access propelled some participants into new roles within the network.

There is limited traditional hierarchy in the social media platform. Several participants expressed an obligation to the broader online community. Chet revealed the roles of shared leadership as she stated,

You do realize sometimes when you read things and belong to groups - people have the same problems you do- everywhere. They offer some solutions that you maybe hadn't thought of or maybe you can give them different solutions that they haven't thought of.

Jill's perception is comparable and illustrated with her statement,

I don't feel like I feel burned out the way I would be if I was an island unto myself trying to make it happen. I think it's really helping with the longevity of teachers. It's the fact that I can find people out there that have been there and can give me some suggestions, pep talk when needed. I don't feel like I have taught 10 years. Every year I feel fresh and invigorated because I have those connections that I wouldn't have had without social media.

This response as a post on the network from Addy represented shared leadership in that she does have experience with the resources and takes on responsibility to share her knowledge.

Using Edmodo this year with my 6th graders. It is very user friendly and my students love it. Great way to start discussions in and out of class. If you have any questions, let me know. I'll try to help since I am still learning, too!

Shared leadership roles that promoted involvement of other people to pursue a common goal stemmed from members at all levels. Any member could exhibit leadership roles at any time and were therefore mutually influential.

The social media network yielded validation as Betsy described, "it just validates that you are doing something well and satisfying so it gives you someone of like-mindedness to discuss things with." Sherry recounted her experience with validation as well, "if you're frustrated with those around you, there are people that understand what you're talking about [on the network] and can you provide feedback or ask for feedback and know it is quality that you can add to your own toolbox."

Lucy spotlighted the anonymity the network provided when she said,

I look for perspectives from different parts of the country/world. I have been to national conferences about curriculum. I get on social media and talk to people about different curriculum they've used whether they've had good luck and ways they might have used it that I hadn't thought of. You know how your teammates think. Sometimes when you're in the same building, you're a little worried about saying certain things or asking certain things so it is nice to go outside of your building and be able to talk about something without worrying about it traveling.

This attitude was common among participants and expressed in various ways.

Esperanza continued this subtheme of anonymity as well as focused on the receptive attributes of participants,

I think particularly with me in my first year the social media network has been helpful. The people in my department are very nice but if I walked into their classroom it was like I was intruding. They didn't want anyone in their cave. With social media, I can connect better and not feel like I'm intruding. You know, if you're on social media then you're obviously open to communication. Whereas in the classroom, when the door is shut it's as if they don't want me to knock.

Validation was a strong motivator for participation. Members of the online social network who were motivated to interact in this way by looking for validation or by validating others affected the continuous function of the community in a positive manner.

Teachers sometimes do not communicate their ideas effectively. Social media may help teachers to share more because of the context. Maria shared,

They are more apt to share something if we can get them to use the Edmodo instead of walking over to say, “Hey, I have this good idea.” Because everyone is so hooked into the social media, I think that they will participate more if they type something up.

Esperanza suggested that the social media network promoted “discourse and you don't really get discourse in faculty meetings.” This post from the site by J.K. is an example of the discourse found within the site.

I went to a great session at the Oklahoma Library Association conference presented by my friend (Ashley). She shared some awesome ideas for using Edmodo with her middle school book clubs. I would really like to implement some of this “reading/social networking” with my older elementary aged students. Has anyone used Edmodo with their class, especially 3rd and 4th graders? Since these kids aren’t supposed to be on Facebook yet this is also a great way to give them a forum to discuss what they are reading in a safer, more controlled environment and promote those good digital citizenship skills (our field tech specialist) has discussed with us recently.

Commonalities within the affinity space prompted by discourse promoted stronger professional relationships. Kristen exemplified,

[The social network is made up of ] people who are progressive and interested in making change and interested in implementing technology authentically, instead of just trying to find a game to play. The culture is a group of people

who are trying to achieve higher levels of learning. It is different than just going to a school and being with a mixed group of people who don't necessarily all agree with putting in technology or know how to do it.

Communication was a key factor in the developing network. Professional discourse in the form of posts and comments was the heart of this development.

It is evident from the data that the sharing of resources and ideas promoted discourse. Discourse was in the form of posts, comments or direct messages through the network. Teachers not only learned from the discourse with teachers from their own school but networked with those outside their local area when accessing the online community. Discourse was a strong factor in moving participants from the role of consumer to the role of producer.

### **Category 5: Collaboration**

Sharing had a positive influence on the teachers in a number of ways including student impact, the progressive development of a professional learning community and redefined and promoted communication and collaboration at school sites. The data also suggested that a number of teachers started formal collaboration meetings as a result of the sharing a few experienced teachers. Maria simply stated, "People do share more and work together more."

Jill contrasted the social network with her regular school culture as she stated, "Rather than competition, social networking is more collaborative. It is so much more collaborative; it is open." In addition, Wade contributed his reasons for collaborating online,

I love to use those groups as sounding boards. 'I am getting ready to do this. What can I use and what have you used in your classroom?' We are small, we have 50 teachers total. My science department consists of me and one other person. So it is good to be able to collaborate online and determine our content then ask, 'What did you do in your classroom?' They will even posts resources. I love that most.

Lucy illustrated some of the collaboration promoted by discourse from the network. She posted as a response to another post, "You might check with the people at X Elementary. I hear they have a forum (Google Doc). They are really on the ball, have great ideas, and are willing to share." Promoting collaboration within the network motivated teachers to share their expertise.

According to the data, the social media network overcame barriers to communication. Chet stated,

We are sharing and using and it does almost force you to collaborate a little more than if you were just finding it on the internet itself. It is just easier. It is an automatic share system. It also gives someone the choice on whether they take suggestions or not so you don't have to listen to me. It is asynchronous - it doesn't have to be at the same time.

The social network redefined communication starters as J.K. stated, "It is good for starting a discussion and then maybe you do the rest of it face to face. It sparks some ideas maybe or conversations that get started that way."

Several of the participants also commented on the way in which they share and how that has changed. They point to the "different kind of sharing that they do now" as

compared with how they shared before the introduction of the online community. One interviewee noted, “It feels like they talk about teaching more than before because of the lesson sharing.”

Addy saw local experts as important partners for collaboration as she said, I think Boomrrang is an awesome site...teachers from all over the state growing all the time. You've got contacts and resources right there at your fingertips that are teachers that are in the same field that you are, that are probably having the same problems, same concerns, same worries, same stresses, or they went through a problem and say "No, do this because...." You know I have Twitter. That's national or global, you have those resources. What I like about Boomrrang is that it's more local you get a feel for that. These are the people in my state that are going through the same things that I'm going through, the Common Core, and TLE and you know other states are going through the same things, but it's not specifically. I can sit in a chat, just like the OK ED chat on Sunday nights, on Twitter, we talk about the science standards and the legislature and things that are going on in OK and that's what I like about Boomrrang, it's more local, even though it's statewide, it's more local. There are people that I can go and ask questions and people that are going through the same things that I am.

In contrast, J.K. shared the importance of looking beyond the immediate perspective, People will interact more online because they already meet with [their teams] in faculty meetings and professional learning communities. They already have lunch and socialize more with their teammates. But online, there is more cross

grade level interaction...more communication of Kindergarten with 3rd grade teachers than they would normally have.

Collaboration at a local or more wide-spread level prompted participants to self-reflect and participate at a higher level within the network.

Again, a sub-theme of an obligation to the wider community was mentioned, this time in association with collaboration. Esperanza discussed promotion of shared leadership and personal accountability within the network as she discussed in her interview,

There are many times that I send out emails to my department members and I don't get a response they just delete it and go on with their lives. But on Social Media, once it's posted, I feel like a lot of people have a need to respond. Like if there's a question, they look at it and then they scroll down. But they always end up coming back and answering the question. You get some feedback.

Kristen also described the presence of this sub-theme in a different form. She shared a perspective from her role as a producer and a leader on the network. She explained her contributions are meant to spark communication and collaboration as she reflected in her statement, "As far as Boomrrang, I am always trying to put ideas out there or questions to make other educators think about what they are doing or to get them to offer ideas that are working for other educators."

The online social network promoted collaboration within the school sites as well as online. The access to social network sites set the expectation for collaborative efforts within the school and a means for more teachers to participate in that collaboration. Betsy explained,

I think how social media has opened that door even at our school. When we have PLC meetings, people are bringing in ideas or things that they've read online into the PLC meetings for good conversation and broadening of how they approach things in their grade level.

Although collaboration in the online network was a key component to the network's development, the contribution to the local collaborative effort promoted sustainability of the established professional development community.

Participants' reflections pointed to the online communicative resource as one of the factors that jumpstarted sharing of ideas (one-way communication), professional discourse (multi-way communication), and collaboration (multi-way sharing) that took place within the school setting as well as online. Participants took on shared leadership roles, felt personally accountable, and searched for people to collaborate with at the local, regional or state levels. In order to provide a more complete picture of the relevant factors involved in the lived experiences, the categories were interpreted and meaning making of the relationships were discussed in the next section.

### **Interpretation of Findings and Relationships**

The culture's participant involvement consisted of power users, casual consumers and lurkers. These roles are consistent with Neilson's (2006) study of online community participation. Because the participants' roles are fluid and the culture is ever-changing, it is probable then, for the network itself to take on various roles or serve in various roles to different participants. The original synthesis of the literature compared and contrasted characteristics of organizational learning structures for addressing teacher isolation. These five categories could be seen as a continuum of

individual professional development taking on the form of various types of organizational learning structures such as communities of practice, professional learning communities or affinity spaces. The results from this study indicate the online network takes on various learning structures characteristics within the hierarchy of categories. Organizational learning structures share many characteristics but have distinguishing features. Through this review of the literature, discourse, collaboration, and shared vision, were identified as shared traits among learning structures. This study identified each of these as distinguishable categories in the data and uncovered professional growth and outside expertise as additional components. Within each of these categories subthemes, or dimensions, emerged as descriptors and insights into the traits in the context of an online setting.

The data, which included interviews, field notes, and online postings demonstrated that online communicative tools positively impact teacher isolation and meta-professional learning community development. The interdependence of teacher growth, outside expertise, teacher discourse, teacher collaboration, and teacher confidence through the sharing of ideas, and networking is a significant relationship for schools focused upon systemic change. Online communicative resources provided key components necessary to help support improvement in schools. In following phenomenographical procedures, a representative hierarchy was created to show the relationship of the categories. The hierarchy is represented in the following table, depicting the lived experiences with the online social network's impact on teacher isolation to represent the outcome space.

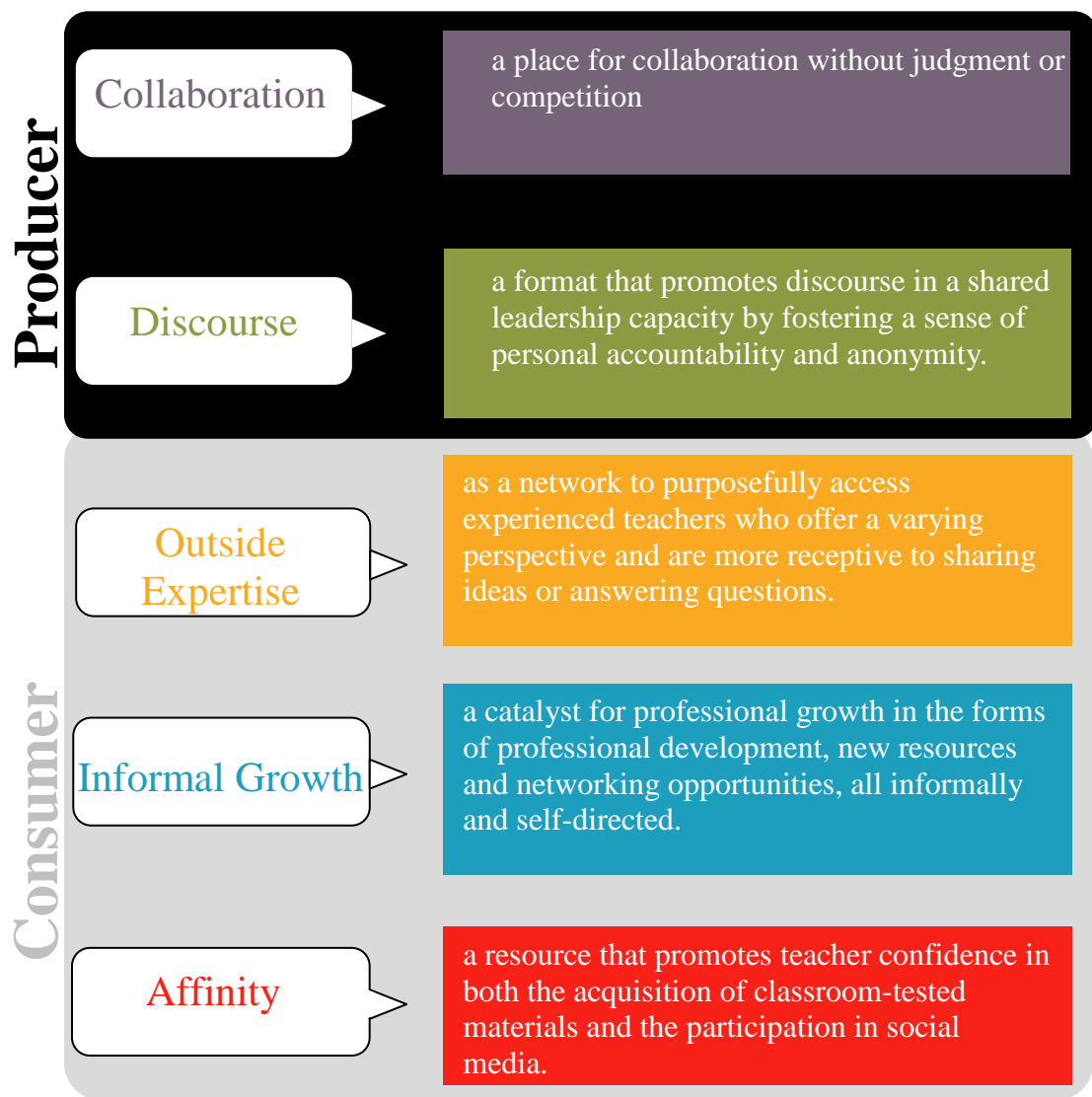


Figure 4. Hierarchical categories of description with relationships.

### Relationships Among the Categories of Description

Two perspectives emerged to add dimension to the five categories of description. These two perspectives are that of consumers as participants consume informational content and producer as participants produce transformational content. These relationships, or themes of expanding awareness, provide variation in the forms of similarities and differences that help in defining the hierarchy of the categories of

description of the social network. These dimensions represent teachers' understanding of the social network and have been inferred from the data as well as from theoretical analysis of the categories.

The consumer perspective focuses on the social network as a source of information. The social network is a platform for lurkers, casual consumers and power users with a specific purpose of promoting the development of a meta-professional learning community. When used as a tool within the change process, the network can touch even those most rural and least participatory with the potential for self-directed growth. The consumer perspective is informal and asynchronous. The consumer perspective offers limited development, however. Moving to the next phase of the development requires a transition on the part of the participant to the producer perspective.

The producer perspective focuses on the social network as a source for transformation. This perspective suggests that change takes place due to multi-way communication and collaboration. The social network can provide the opportunity for development beyond the first phases of the change process. As participants transition, building confidence and efficacy, they take on new roles within the network. Still self-directed, a personal accountability and desire for personal development, these shared leadership roles promote interaction among participants. Discourse and collaboration require a higher level of interaction afforded by the network within the producer perspective. The producer perspective is informal but purposeful and involves direct communication with other participants.

The categories of description represented a hierarchical order that increase in complexity as they provide new insight and meaning to the lived experiences. According to Marton and Booth (1997) the highest category of description includes the elements of the lowest category. This is true of the collected data in this study as well. The relationships of the categories are directly related to the culture of the network in that the roles of the participants define the categories' hierarchy. A lurker is only likely to participate in the consumer categories. A casual consumer will participate in the consumer categories and a few may extend into the producer categories. However, the power consumer participates in all levels of the categories as both a consumer of knowledge and producer of content for the purpose of discourse and collaboration. Detailed descriptions of the variations between categories are included below. The purpose of the illustrative quotes of the participants is to depict the transition from one category to the next using participants' stories.

**Affinity and Professional Growth.** The first category, affinity, concentrated on a sense of community and teacher confidence in both the acquisition of classroom-tested materials as and the participation in social media as consumers. Trust was established as a consumer. The relationship between the categories was reciprocal. The teachers' sense of community contributed to the confidence and trust of the resources and as the resources were found to be trustworthy, the sense of community and affinity space developed. The variation between category one and two is the transition to participation for professional growth for teachers. Because of the comfort level and confidence established in the sense of community, the network transitions to a catalyst for professional growth in the forms of professional development, new resources and

networking opportunities all informally, and self-directed. The transition from the first category to the second is illustrated in the following quote from Elizabeth:

Sometimes it is an unexpected learning opportunity. There is so much out there if you are looking for something you can find it online or find someone who knows.

**Professional Growth and Outside Expertise.** The key variation between professional growth (category 2) and outside expertise (category 3) is a formal purpose. To extend growth and development of teachers, the third category, outside expertise, incorporates a purposeful search for an alternate perspective with experienced teachers who offer a varying perspective and are more receptive to sharing ideas or answering questions. This relationship is also reciprocal. The teachers' desire for self-directed growth contributes to the seeking of outsiders' expertise and the perspective of outsiders contributes to additional professional growth. This purposeful pursuit of another perspective is represented in the following quote from Addy:

I like to look at other people's posts and see what they're doing. See if I can find somebody that is similar to me or maybe also in the science department.

**Outside Expertise and Discourse.** Outside expertise, the third category is still a consumer focused category. Discourse, the fourth category, represents the transition to the participant as a producer of content. The complexity of the category shifts in that a sense of community, confidence, professional growth, and outside expertise are all pre-requisites to professional teacher discourse. The fourth category describes the social network as a format that promotes discourse in a shared leadership capacity by fostering a sense of personal accountability and anonymity. This level obviously excludes

lurkers by definition. Esperanza illustrates this insight with the following statement about discourse:

[The social network] promotes interaction. Some of [the reasons for promoting interaction] might be anonymity like your name might be posted, but what are the odds of you actually running into that person? You can put what you think...any advice you feel without worrying. I utilize FaceBook but I am more guarded and I am obviously not going to put something that might upset my friends or coworkers on FaceBook I don't need that reputation. But on other [social media sites], I can just post it and those people aren't going to track me down and say that "I don't agree with you not teaching grammar the first week of school"... It is very freeing.

**Discourse and Collaboration.** Discourse varies from the fifth category, collaboration, in the purpose associated with the discourse. The social network was described as a place for collaboration without judgment or competition. This complex level of interaction requires the participants to be producers of content, make purposeful interactions and at a higher level of expertise. Again, lurkers are excluded from this relationship as there was not data to support their interactions at these levels. These relationships between categories are reciprocal as well. Teacher discourse contributes to collaboration and collaboration promotes additional discourse. The variation between the fourth and fifth categories is represented with this quote from Lucy that highlights collaboration:

The interactions give you prior knowledge because you don't have time to sit down and make everything. I have collaborated with others and they will make

one on this [subject] and I will make one on something else and then we'll switch. Collaborating and sharing with others [is essential] especially when you have a team that's different [levels of competency] technology wise, It is nice to have someone I can swap back and forth with and then I can share with my teammates if they want it... but I don't always have to do all the work. In order to get the same level of product, I am collaborating outside my school but then I share it all with my teammates.

These variations represent a fundamental shift in perspective through each category of description in the hierarchy. The results demonstrate how differently teachers may view social networking as a personal development tool possibly explaining why they participate in various ways. Furthermore, those who do view the social network as a personal development tool and participate at the higher levels of the categories have reported greater levels of personal satisfaction, personal growth and view the network as a developing meta-professional learning community.

## **Summary**

The qualitative data, which included interviews, field notes and network posts, demonstrated that online communicative tools positively impact teacher communication and collaboration. The interdependence of an affinity space, teacher growth, and access to outside expertise with communication through the sharing of ideas, teacher discourse, and collaboration is a significant relationship for schools focused upon systemic change. The findings of this study supported the theory that a vital capability of a learning organization is to foster the conditions that generate new knowledge and help it be shared liberally so that people are continually learning how to learn together (Senge,

1990; Wheatly, 1999). Online communicative resources provided key components necessary to help support improvement in schools.

These categories represent different aspects of the social network. The assigned categories are five ways of relating to the social network and should not be an implicit typology of educators. The educators experience the network in different ways and this variation is representative of the lurker, casual consumer and power user perspectives. This chapter provides insight into the answer to the research question, the lived experiences of the teachers, which includes the five categories of description. The characteristics that emerged are the same characteristics present in a developing professional learning community. There are, however, factors that exist that allow the network to extend beyond the capabilities of a traditional professional learning community. Teachers are able to meet their needs at a time that is convenient for them. The omnisynchronous option of social networking allows for immediate feedback from peers. In addition, the anonymity offered by social media permits teachers to freely ask questions and provide feedback without the fear of judgment. The network is self-directed and therefore, teachers take ownership of their roles within the community. The phenomenographic analysis process provides a framework for presenting the data in relation to the literature review, the theoretical framework and the implications of these findings on theory and practice of social networking as a platform for a meta-professional learning community for mitigating isolation which is presented in Chapter six.

## CHAPTER 6

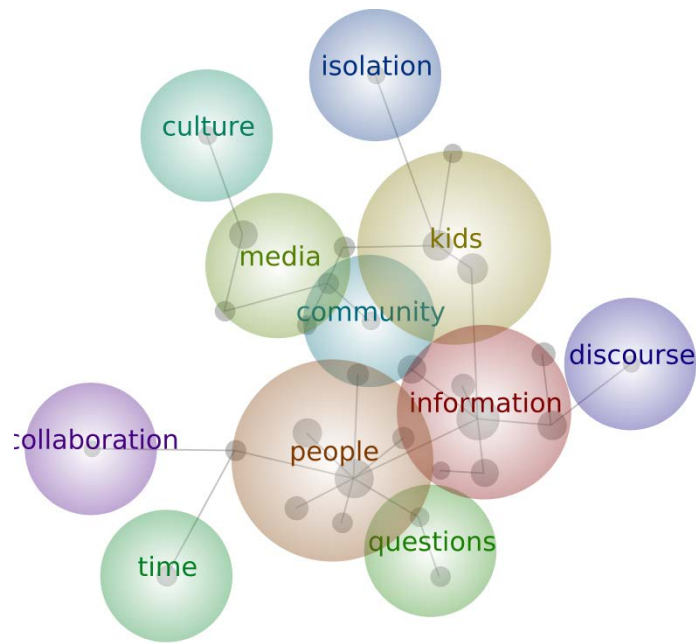
### Final Analysis and Recommendations

The focus of this chapter is to discuss the results, to draw conclusions based on the data and to link the results to the literature base. This chapter flows according to phenomenography's edicts in that all categories converge to address the problem of isolation and in so doing, answers the research question: *What are the lived experiences of teachers participating in an online meta-professional learning community culture designed to mitigate isolation?* I present the outcome space that developed as a result of the research. Possibly considered unorthodox, new quoted material is included in this chapter as supportive data but is necessary to illustrate the answer to the research question. Implications of the results and recommendations for future research are also included.

The study indicates that the identified categories share similarities; however, there are variations within and between categories of description. Therefore, the theoretical lens that most powerfully explains the findings is variation theory. Variation theory provides the groundwork for broadening the perspective of each of the categories. A supplementary theory that is impactful is social networking. Social networking theory gives the understanding that social capital, the relational ties that support or constrain the pace, depth, and direction of change (Daly, 2010), is the principle component of effective educational reform. The emergent themes and meanings of the relationships between and among them suggest online communicative technologies support both the mitigation of isolation and a platform for developing partnerships across school communities.

## **Outcome Space**

The outcome space represents the overlap of the five ways teachers make meaning or experience the social network. The logically related themes of expanding awareness which identify similarities and differences are illustrated with hierarchical dimensions associated with the identified categories of description. Hierarchical inclusiveness may exist where categories of description are inclusive of other categories. This leads to the structure not necessarily being linear, but instead overlaid. This is evident in that the categories are also representative of various phases of the change process and the participants' varying locations on the spectrum. The outcome space is a relational map that is representative of variation much like clusters of colors are used to represent a hue in artwork. Uncovering the structural framework revealed by the categories and outcome space is an interpretation of the phenomenon, the collective experience of the social media on teachers overcoming isolation represented in the following map:



*Figure 5. The collective lived reality of the participants.*

### **Addressing the Research Question**

It is significant to note that a large majority (16) of the participants mentioned that they felt isolated in the form of access to content or grade level peers, geographical location, lack of experience, or progressive pedagogy. Of the 16 who self-identified as isolated in some form, 15 were casual consumers or power users in the network and all 20 participants believed they were involved in a professional learning community of some sort. The four who did not self-identify as isolated still believed social media could help in overcoming teacher isolation. The participants identified five categories that were mutually influential and supportive of meta-professional learning community development and mitigating isolation.

The data suggest that the supplementary value of social networking is associated with overcoming isolation. The research question put emphasis on the mitigation of

isolation as an outcome of the lived experiences associated with participating in the network. The identified categories are collective meanings that point to the various ways of experiencing the social network. The data collected suggest that the semantic relationship of isolation with the categories is that isolation is the rationale for participating in the network although the categories better describe the immediate need met by participation. Kristen described the individualism and isolation that exists in teaching and how the online social network helps to bridge the gap created by this culture,

I do think that teachers are isolated and I do think that for the most part, teachers like that. They like that autonomy. However, I think the good thing about social media is that teachers' perceptions are that they are anonymous and so they will say and do things on social media like Boomrrang that they wouldn't necessarily feel comfortable saying or doing or asking in a small group setting like a PLC or team meeting or anything else like that.

Betsy describes social media as an outlet for someone feeling isolated,

[The social media site] would give people someone to bounce ideas off of, to talk to people in the same situation and learn how they handled it. Also, it helps people learn ways to still be progressive but not step on toes or be looked at in a different light than the team. It gives them different ways to enjoy what they're doing and enjoy the technology and all of the things that they're learning and doing with their kids but not be looked at in a different light by their peers. You know even before social media and technology became so big, teachers were still looked down upon for trying new things, or stepping out of the box. There's

always going to be those teachers out there that are not willing to try something new and I think social media just gives an outlet and you are able to talk to someone that's in that situation or has been there before.

Betsy explained further,

“I think social media can open up and connect people that are maybe just a singleton in their school or district. It can just broaden the horizons of a building or a team so that they feel they aren't by themselves.”

Maria relays the role social media can play for small, dependent school districts as she added,

We have one grade level that chooses to be more isolated, there are three teachers in that grade level and they choose to be isolated. Every team building thing we have done has failed. The isolation factor is big in our area. Our teachers don't have a lot of other teacher friend interactions. They are working all day with the kids and when they come home, their brains are tired and they don't do a lot of research. I believe if we ever get them hooked in [to social media], the isolation factor will go away and they can become a better well-rounded educator.

The data reveals that for various reasons, teachers turn to social media when their needs are not being met.

Chet included this statement about social media's role for asynchronous communication,

It is ease of access - people are so open to you all the time. In the classroom next door, they may be teaching so you don't want to interrupt them so you end

up get busy doing something else and you end up never going to talk to them about this matter or that. Social media allows you to contact them when it was on your mind. You don't feel isolated if you can contact someone in the middle of the day.

As discussed in chapter four, time was a contributing factor for use of social media.

The narratives reveal that time, whether it be to save time or for convenience of multiple parties, is also an aspect of social media that makes participants' feel it assists in overcoming isolation.

Jill expressed emotional support is an important role that social media can play, Education is a very challenging, rewarding profession but the challenges can sometimes seem overwhelming. You have that one kid that misses that test by one point and you can really get down on yourself. So having that support of other professionals at your fingertips that have been there, and in the trenches so to speak is so important...having them supporting you and reminding you that you can do these things and giving you ideas to reach those kids that I may not have come up with.

Elizabeth echoes this sub-theme as she contributed,

There is so much available online that even if a teacher is feeling isolated, they can hop on their computer/phone/device and suddenly be connected with millions of people. For a teacher who is feeling isolated, it is easier to connect with people online.

Chet identified “Teammates and colleagues are on same social media that I am on so it gives a common ground.” J.K. said, “isolation does bring some common ground.”

Elizabeth shares, “social media provides support that is authentic and not superficial.”

Jill stated, “I feel like I have lifelong friends that I don’t even know. We share something in common which is a deep love for both education and mathematics that I would never have had just as a classroom teacher.” According to the data, the contributing factor of a sense of community in the form of emotional support or common ground can help mitigate the feeling of being isolated.

Jill illustrates how collaboration rather competition is promoted on social media as she said,

In small towns, they may only know what Caucasian farmers think because there is nobody else in those towns. Exposure to cultural differences as well as educational differences provide growth in all different areas. Teachers are no longer isolated, schools are no longer isolated, it should not be islands unto ourselves anymore. ‘I can’t share anything with you because your test scores might grow’ and that’s not good and I think social media has really helped us get away from that.

Addy felt isolated in a different way but turned to social media networks for help. This is illustrated in her statement,

I had (Bob) to help me out. But, outside of that, within our building or within our district, there's not anybody that I can go to for help, or ask questions. I've kind of outgrown the people in my grade level. They do nothing social media wise for their teaching profession. There are so many contacts and so many

resources that I'm getting from twitter or professional development that my team teachers don't have a clue what I'm talking about. I'm trying to outgrow them. I don't want to say that I can't get ideas from them, but as far as in my classroom and where I'm going, it's hard for me to get ideas from them because they're still into paper and pencil and teaching to a test. They're not moving. I think they should be moving, but where education is moving. I'm resorting to online resources to help me expand that way professionally. Now, they still have great ideas, organizational type stuff or ways to maintain your classroom. It's tough to share with them when they have no idea what I'm talking about.

Collaboration with expert peers is a contributing factor of the social network offers that is not being met by several teachers' professional learning communities at their schools.

The phenomenographical data identifies isolation as a motivator for online social network participation. The participants' lived experiences identified five categories that were mutually influential and supportive of meta-professional learning community development and mitigating isolation but the underlying rationale for participation was to mitigate a feeling of isolation. The results in this study illustrate the effectiveness of the online collaborative resource in supporting the efforts of the participants in self-initiated professional growth. Isolation promotes self-directed participation in social media for extending professional learning community opportunities. The study also identifies effective ways to develop, strengthen, and extend professional learning communities beyond the constraints of time and place.

## **Interpretations of Findings in Relation to Literature**

The findings of the study support the relevant literature on components of organizational change models as related to social media. The beginning stages of development for learning communities align with the categories identified in the data. The study identified six of the 10 Practices of High Achieving Schools (O'Hair et al., 2000), from the lived experiences of participants in the online network. The interpretation of the findings is the data mirrors the early stages of a professional learning community network within an online context. Conversely, the data also identified characteristics distinctive from a traditional professional learning community, anonymity and omnisynchronized interactions. These themes support the literature of social media as supplemental to organizational change.

### **Shared vision**

At the beginning level category, a shared vision for the network was noted. The online social network is experienced as a resource that promotes teacher confidence in both the acquisition of classroom-tested materials and the participation in social media. Within this category, a community of practice emerges as teachers built confidence as users and gain confidence in the content. A community of practice engages individuals, as members of a specialized group, to participate in community (Wenger, 2000). A majority of the participants (18) noted a sense of community with a shared purpose developed as the roles of the participants within the culture started to develop. Shared vision is also recognized by each of the types of organized learning groups within the literature. This study supported that confidence, shared vision and the sense of community play key roles in the development of a meta-professional learning network.

### **Informal professional growth**

In the second category of informal professional growth, the online social network is experienced as a catalyst for professional growth in the forms of professional development, new resources and networking opportunities all informally, and self-directed. The unique context of an online space provides the opportunity for asynchronous interaction, like that of an affinity space (Gee, 2000). In a social network, learning is often informal and situated where newcomers, practitioners, and scholars can coexist and collaborate anytime from anywhere. The data collected pointed to informal sharing and interconnectivity as key components of this category by all 20 participants. Cross (2007) highlights the benefits of linking informal learning with the “anytime, anywhere sensibilities of next-generation learning” of social media to create new self-motivating experiences that promote personal growth. The results of the study corroborate the self-motivation and informal nature of the professional growth within the online network.

### **Outside Expertise**

In the third category, outside expertise, the online social network is experienced as a network to purposefully access experienced teachers who offer a varying perspective and are more receptive to sharing ideas or answering questions. The culture of the network started to take on more characteristics of a developing affinity space as identified by Gee (2000), as an “interactional organization” with a common endeavor where newcomers and masters share a common space (p. 81). Perspective was a dimension that emerged from 19 of the participants within this category.

The teachers found access to knowledge and ideas outside their regular circle to prevent the community from becoming stagnant. Results of this study support the findings of various studies on social media as a pivotal fulcrum for accessing outside expertise. Mack and Head in a 2007 study provide details from undergraduate students on their use of *Facebook* to seek asynchronous information on research assistance. Stewart, in a 2008 study, indicates the Literature Circle on Facebook can help develop literacy skills through purposeful collaboration. DiMicco et al. (2008) suggest that the Beehive social network, used by IBM, is a platform to share new ideas and gather support for company projects from those outside their standard collaborative circles. This purposeful collaboration with external sources shows a willingness to seek outside expertise, one of the 10 Practices of High Achieving Schools (O'Hair et al., 2000) through a social format.

### **Discourse**

The higher level category four, discourse, requires the participant to take on the role of both producer and consumer of content. The online social network is experienced as a format that promotes discourse in a shared leadership capacity by fostering a sense of personal accountability and anonymity. Discourse was mentioned by 9 participants as a dimension of this category. The identification of discourse as informal learning through social media supports three studies that followed the effect of an online social network on discourse focused on participation of informal learning (Madge, Meek, Wellens, & Hooley, 2009; Greenhow & Robelia, 2009; Selwyn, 2009). In addition, the data from this research supported studies that indicate social networking

promotes collaboration, discourse, and access within organizations (DiMicco et al., 2008; Jue et al., 2010; Meister & Willyerd, 2010; Stolley, 2009; van Zyl, 2009).

Anonymity was mentioned by 4 participants as a dimension for motivation of using outside expertise within the network. Gee (2000) refers to a common endeavor or common interest as a foundation for building relationships within an online space that negates the boundaries of race, class, gender, or disability. This concept is supported by the comfort level created within the online network that affords opportunities not available in face-to-face interactions.

In an online setting, the “first step toward existence is the production of discourse” (Markham, 2005). The discourse produced by the participants is a higher role of participation but the lowest form of content on the network. During this level of participation, the network culture takes on characteristics of a professional learning community as participants move into the roles of producers. A professional learning community is an evolving strategy where teachers and administrators work collaboratively to share knowledge that will enhance their effectiveness as professionals for students’ benefit (Hord, 1997).

In addition, participants took on roles of shared leadership as 5 participants mentioned personal accountability for producing content or answering questions. Research suggests that the development of a shared leadership realigns roles and relationships of teachers (Sawyer, Scribner, Watson & Myers, 2005) with other faculty, administrators, and within the broader community so that team members are more likely to impact systemic change. Leadership roles are conceptualized as a process that occurs both within and through social relationships and networks of influence (Fletcher &

Kaäuffer, 2003). Therefore, the impact of shared leadership roles on the social network and its participants is evident to support the current literature.

### **Collaboration**

The final category in the hierarchy is that of collaboration. The online social network was experienced as a place for collaboration without judgment or competition. The indicators of collaboration within the hierarchy of the network categories support the findings of the current literature as it requires the greatest amount of transformational participation. According to Shirky, collaboration in social media is “changing behavior to synchronize with people who are also changing their behavior” (p. 49). Social media provides a platform for collaboration and cooperation in organizations (Lackes et al., 2009; Ou et al., 2010; Thevenot, 2007). Collaboration is recognized as the most significant factor in the progression towards a professional learning community to reduce teacher isolation (Dufour & Eaker, 1998). Senge (1995) recommended that organizations capitalize on the interconnectedness of people in order to promote change. Structures for organizing change to promote collaboration provide the platform for both scholars and practitioners to shift from a focus on teaching to a focus on learning (Dufour, Eaker, & Dufour, 2005). The data collected follow a DuFour (2004) description of a developing professional learning community as a culture of collaboration with a shared purpose is formed with a firm foundation of professional discourse. In addition, an affinity space is represented in this category of collaboration as Gee (2000) describes, “the context and content are transformed by the interactions that take place within the space” (p. 85). Collaboration was experienced by

very few of the interviewees (3) who represent the power users contributing the most content.

The culture of the network taking on the roles of learning organizations provided opportunities to expand current studies to include social media as a new support for meta-professional learning community development and sustainability. This study's findings reinforced the importance of allowing for self-organization where people have the ability to be creative and purposeful to meet their needs by generating viable, organized, autonomous systems (Wheatley, 1992). The teachers created self-directed opportunities for personal growth through various types of interaction within the online network. In addition, learning organizations craft the conditions that create new knowledge and help it be shared freely where people were continually learning how to learn together (Senge, 1990; Wheatley, 1999). The teachers generated new knowledge within the online network for anyone to use as they developed a sense of community that worked together for a common good. The online social network contributed to the extension of a professional learning community network and school and individual capacity for change (Dufour & Eaker, 1998; Hord, 1997; Huffman & Hipp, 2003; Newmann et al., 2000; Sergiovanni, 1994).

### **Implications of Study**

The study is significant on multiple levels. First, using this unconventional method for an online study provides a premise for acknowledging contextual impact on the data while adhering to paradigms set forth for specific research methodologies. Second, this research will contribute to the understanding of social networks as used in

a professional setting for individual informal learning. In addition, it also provides significant considerations for practitioners, undergraduate programs and school leaders.

### **Implications for Methodology**

Using phenomenography as a methodology to approach a study with an online context offers significance in that recent publications on online communities use more traditional methods such as case study, ethnography, or phenomenology. The design of this study added value to the current research in education due to the phenomenographic approach. Opportunities were afforded to address both shared experiences and the impact of the context itself by using phenomenography as the chosen method. Meaningful insight into the relationships among/between the categories provided a deeper dimension of addressing the problem of teacher isolation with social media. Without the emphasis phenomenography places on both the culture and the lived experiences “isolation” would have been categorized as another theme rather than the meaning behind the development of the categories. This methodology provides insight into the structures and meanings of the categories as well as concentrating on the relationships that exist among and between the categories.

This study used an interpretive paradigm and phenomenography which provided understanding into a parallel design to facilitate further understanding of the subtleties of context as well as the lived experiences of the participants. Other methods provide limited access as they are bound to particular paradigms that don’t always include the relationship between the research method and the situation. Therefore, this alternative to traditional methods provides a progressive research approach for understanding online communities.

By highlighting the variation of how professionals understand a social network, it is possible to work in new ways (Sandberg, 2000). By aggregating a more comprehensive way of understanding the social network, the teachers will receive a broader repertoire of action in professional growth opportunities. By using the outcome map as a guide and spectrum for social network development, learning situations could be facilitated through self-reflection (Larsson, Holmström, Lindberg & Rosenqvist, 2004). Therefore, the conceptions described could be taken a step farther and used for educational interventions based on generated results.

### **Implications for Social Network as Meta-PLC Development**

In addition, this phenomenographical inquiry contributes to an understanding of teacher perceptions on the use of social networking to enhance systemic change efforts. A number of researchers call for greater research linking formal organizational structures with online opportunities (Moore, 2008; Talbert, 2010; van Zyl, 2008; Zhang, 2010). The study contributes to the literature by addressing the gaps for supplementing a change effort through opportunities afforded through technology. This portrait aids in the understanding of adult perceptions to inform emerging online learning platforms.

The data also points to other components that may be helpful when designing and developing a social network. This study recognizes that the development of an online community is difficult. Finding and identifying power contributors for social network development could be aided by this research in that the isolated participants have greater potential for adding content and therefore making the network successful.

In addition, the data collected could justify expanding the meta-professional learning community to include higher education faculty and undergraduate programs.

Outside expertise in the form of new research, new practices and the latest in technology could enhance the level of knowledge within the network. Informal professional development opportunities for participation in a professional online network could prove to be a symbiotic relationship for both the network and the teacher.

### **Implications for Practitioners**

This study also provides significant considerations for practitioners, undergraduate programs and school leaders. Teachers and leaders should utilize the findings of this study to guide decisions regarding social networks as learning tools for addressing barriers of isolation and possibilities for professional development opportunities. Undergraduate programs should reflect on the findings of this study when preparing educators, particularly for providing alternative mentorships to new teachers. It should guide school leaders in acknowledging new untapped resources for informal teacher learning, mentorships, and accessibility.

Reflective accounts such as these are ideal for leaders and teachers undertaking an activity that incorporates an online community because they demonstrate the power of the online community as a catalyst for sharing of ideas. Participants' reflections point to the online communicative resource as one of the factors that jumpstarted sharing of ideas (one-way communication), professional discourse (multi-way communication), and collaboration (multi-way sharing) that took place within the school setting. It is evident from the data that the sharing of resources and ideas promoted discourse and technology integration within the classrooms. Such discourse and collaboration are essential in developing professional learning environments.

The participants' involvement in the online community provided ample opportunities for additional online support from subject matter experts from the teaching field. Teachers not only learned from the discourse with teachers from their own school but networked with those outside their local area when accessing the online community. Teacher confidence and beliefs about technology were influenced by the online resources. These findings confirmed the potential for use of online technological resources for teacher growth and development. Reflective accounts such as these are ideal for leaders and teachers undertaking a change process to incorporate an online community, because they demonstrate the power of the online community as a catalyst for sharing of ideas.

### **Implications for School Leaders**

For school leaders, this study provides a research foundation to support the implementation of online social networks to extend the availability of technology integration resources, best practices, and collaborative support for teachers. Talbert (2010) recognizes the core challenge in systemic change initiatives that aim to develop professional learning communities among others includes “access to a wide range of learning resources for individuals and the group” (p. 557). This study provided a deeper understanding of social networking as a catalyst for networked professional learning communities and the impact of various backgrounds of participants on the development of the community. This project promotes awareness into the perspectives of participants in the online social network and the impact and influence of the network as a supplemental tool. The findings provide further evidence that access to online collaborative opportunities increased teacher use of social media in the classroom and

provide a venue for sharing of best practices, lesson activities, challenges and experiences. Immediate online access to a database of technology integration resources and human resources may compensate for the lack of adequate on-site technology support that is a characteristic of many school districts. Leaders should acknowledge social media as another venue for reaching teachers who are isolated due to geographic location, size of school, progressive techniques or experience base.

### **Recommendations for Future Research**

While this research studied a culture of teachers that was involved in a social network, more research is needed as the network expands to include higher education faculty and undergraduate students pursuing a degree in teaching. Future research that will corroborate, develop and contradict the interpretations of this research is critical. As the world shifts to online collaboration and learning, so should teacher development. A great deal of research focuses on teacher isolation (Bakkenes et al., 1999; Elmore, 2000; Fullan, 2001; Gamoran, Gunter, & Williams 2005; Hargreaves, Earl, Moore, & Manning, 2001; Leonard & Leonard, 2003; Lortie, 1975; McLaughlin & Talbert, 2001; Nias, Southworth, & Yedmans 1989; Powell, Hochstrasser Fickel, Chesbro, & Box, 2010) and professional learning communities are identified as change processes to break down barriers of isolation (Darling-Hammond, 1997; Dufour & Eaker, 1998; Dufour, 2004; Fullan, 2001; Hord, 1997, 2009 ; McLaughlin & Talbert, 2001; Newmann & Wehlage, 1997; O'Hair et al., 2005; Stoll & Seashore Louis, 2007; Wallace & Thomas, 2006; Williams, Atkinson, Cate, & O'Hair, 2008; Wood, 2007). Technology has been identified as a catalyst to the development of professional learning communities (Nielson, 2008; Williams, 2006). Therefore, understanding how teachers

overcome the barriers of isolation through the development of meta-professional learning communities in a digital environment would increase the understanding of social media's role in the future of educational development. In terms of research, this study may also have important implications with respect to professional development for those learning to integrate technology as well as for the development of new communicative technologies, and their application to teaching and learning. Investigation into the use of online resources for providing professional development for teachers would provide valuable awareness.

Future research which centers on teachers who are digital natives is crucial and could examine different perspectives of each generation's use of social media. The sample of this study consisted of a sample of a large scope of teachers, thus providing a broader variation of the lived experiences of the network. Limited research is available on the future generation of teachers who have grown up with social media. The first year teachers in this study provided insight into the different perspectives and uses for social media by the next generation of teachers. By 2014 Millennials (born between 1977-1997) will make up 47% of the workforce" Meister and Willyerd (2010). It is imperative that lawmakers, leaders and higher education tap into this valuable resource that is social media for professional growth. Additional studies are needed that examine the role of online communicative tools in university teacher education programs and the effects that such resources have on instructional technology integration. More studies highlighting the next generation(s) of teachers and online opportunities are needed.

A different form of isolation emerged as the results of this study. Several interviewees identified themselves as progressive with technology and had outgrown

the resources available to them locally. This form of isolation was identified mostly by the power users in the study who contributed and participated most within the online network. Additional studies are needed to examine the broadminded, early-adopters of technology and the role social networking can play in keeping these teachers interested and growing professionally. More studies identifying the needs of the teachers experiencing this type of isolation could be crucial for sustainability.

An important starting point, this study clearly indicates the need for additional research to better understand the underlying network structure of educators as they are required to enact change strategies mandated by organizational change structures. In contrast to social network theory (Daly, 2010), which concentrates on investing in teachers with the most social capital for building capacity, the findings of this study suggest that perhaps targeting isolated teachers that have a desire for change could be used as a movement for reform. There is evidence of a more comprehensive understanding of the development of the network over time. A longitudinal study could show growth of both individuals and the development of the professional learning community stages within the network itself. This study has inadequate data to explain the roles of isolated teachers as capacity builders but a longitudinal study that follows a change process with various types of isolated teachers as capacity builders could further indicate if the patterns within an online network could be generalized for other change initiatives.

The lurkers, who did not self-identify as isolated, were motivated to participate only as consumers and therefore I could expect the participants to fall into a category of motivation as determined by the literature. Stafford, Stafford and Schkade (2004)

identify three motives for participation at a consumer level as information, entertainment, and social. This study may support the more recent findings of Krishnamurthy and Dou (2008) that provide insights into consumer activities as two main groups: rational motives, such as knowledge-sharing and advocacy, and emotional motives, such as social connection and self-expression. In addition the results of this study could support the findings of Park, Kee, and Valenzuela (2009) who pinpoint similar categories of socializing, entertainment, self-status seeking, and information. These common motives for consumer activities could help explain the reasoning for lower level participation of the lurkers and could provide additional support for this research strand in a future study.

This study identified isolation as a motivator for online social network participation. By expanding their repertoire, the online social network meets needs that may not be met in a traditional professional learning community. In line with social networking theory (Daly, 2010), a case study that follows isolated participants in an online social network and the change in each of their social capital within their schools would expand the knowledge base for the online context as a support system.

## **Summary**

This study examined a culture made up of in-service teachers participating in an online social network as a developing meta-professional learning community designed to mitigate isolation. Twenty participants were selected who represent variation within network, to participate in the phenomenographical study. Data collection consisted of ethnographical participation in the online culture, posts and comments from the network, and in-depth interviews.

Data analysis revealed the network mimicked the early stages of professional learning community development within the affinity space. The developing culture included the IDEALS framework identified as practices for high achieving schools (O'Hair et al., 2000). In addition, the analysis found that teachers seek out professional resources in the form of pedagogy, content, management, and knowledge as well as human resources for networking and overcoming isolation. Isolation promotes self-directed participation in social media for extending professional learning community opportunities.

The findings of this study corroborated, developed and contradicted existing research in the online social network field of research. Recommendations based on the results were made for researchers using online formats as a justification for using phenomenography as a methodology over other choices, practitioners using social networks and leaders in the realm of education for the informal professional development of teachers. The data and results of this exploratory study point to future research that could aid in the development of online social networks for informal professional development, extension of professional learning communities and capacity building in various ways.

## References

- Abrahamson, E. (2000). Change without pain. In *Harvard Business Review* (Ed.), *Harvard Business Review on leading through change* (pp. 127–140). Boston, MA: Harvard Business School Press.
- Applegate, P. (2008). The qualities that differentiate high-achieving and low-achieving high-poverty rural high schools: A transformative mixed methods study. Ph.D. dissertation, The University of Oklahoma, United States -- Oklahoma. Retrieved February 27, 2012, from Dissertations & Theses @ University of Oklahoma.(Publication No. AAT 3304447).
- Åkerlind, G. (2005). Variation and commonality in phenomenographic research methods. *Higher Education Research and Development*, 24(4), 321-334.
- Akerlind, G., Bowden, J. A., & Green, P. (2005). Learning to do phenomenography: A reflective discussion. *Doing developmental phenomenography*, 74.
- Ashworth, P., & Lucas, U. (2000). Achieving empathy and engagement: a practical approach to the design, conduct and reporting of phenomenographic research. *Studies in Higher Education*, 25(3), 295-308. doi: 10.1080/03075070050193424.
- Association, A. P. (2009). *Publication manual of the American Psychological Association*. (Sixth ed.): American Psychological Association.
- Atkinson, L. (2005). *Schools as learning organizations: relationships between professional learning communities and technology-enriched learning environments*. Norman, OK: University of Oklahoma.

- Bakkenes, I., Brabander, C., & Imants, J. (1999). Teacher isolation and communication network analysis in primary schools. *Educational Administration Quarterly*, 35, 166.
- Barab, S. A., Kling, R., & Gray, J. H. (2004). *Designing for virtual communities in the service of learning*. New York, NY US: Cambridge University Press.
- Barry, K. J. (2007). Collective inquiry: Understanding the essence of best practice construction in mental health. *Journal of Psychiatric and Mental Health Nursing*, 14, 558-565.
- Beer, D. and Burrows, R. (2007). 'Sociology and, of and in Web 2.0: Some Initial Considerations', *Sociological Research Online* 12(5). URL (accessed 1 July 2009) <http://www.socresonline.org.uk/12/5/17.html>.
- Beer, M., & Eisenstat, R. A. (1996). Developing an organization capable of implementing strategy and learning. *Human Relations*, 49(5), 597-619.
- Bernard, H. (1994). Ethnographic sampling. *Cultural Anthropology Methods Journal*. 6(2), 7-9.
- Bolam, R., McMahon, A., Stoll, L., Thomas, S., & Wallace, M. (2005). Creating and sustaining effective professional learning communities. Retrieved from <http://www.dcsf.gov.uk/research/data/uploadfiles/RB637.pdf>.
- Bolton, M., & Stolcis, G. (2003). Ties that do not bind: Musings on the specious relevance of academic research. *Public Administration Review*, 63(5).

- Bouckennooghe, D., Devos, G., & Van den Broeck, H. (2009). Organizational change questionnaire- climate of change, processes, and readiness: Development of a new instrument. *Journal of Psychology: Interdisciplinary and Applies*, 143(6), 559-599.
- Bowden, J. (1994). *The nature of phenomenographic research*. Paper presented at the Understanding Phenomenographic Research: The Warburton Symposium, Melbourne. Bowden, J. (Ed.). (2000). *Phenomenography*. Melbourne: RMIT University Press.
- Bowden, J., & Marton, F. (1999). *The University of Learning Beyond Quality and Competence*. London: Kogan Page.
- Bowden, J., & Walsh, E. (1994). *Phenomenographic research: Variations in method*. Paper presented at the The Warburton Symposium, Melbourne.
- Bowden, J. (Ed.). (2000). *Phenomenography*. Melbourne: RMIT University Press.
- Bowden, J. (2000). The nature of phenomenographic research. In *Phenomenography*, 1-18. Melbourne: RMIT University Press.
- Breslin, J., & Decker, S. (2007). The future of social networks on the Internet: The need for semantics. *Internet Computing, IEEE*, 11(6), 86-90.
- Brown, J. S., & Adler, R. P. (2008). Minds on fire: Open education, the long tail, and learning 2.0. *EDUCAUSE Review*, 43(1), 16-32.
- Bruce, C. (2000). Information literacy research: Dimensions of an emerging collective consciousness. *Australian Academic and Research Libraries*, 31(2), 91-109.
- Bruce, C. (2002). Frameworks guiding the analysis: Applied to or derived from the data? Paper presented at the Current Issues in Phenomenography, Canberra.

- Bruce, C., Buckingham, L., Hynd, J., McMahon, C., Roggenkamp, M. & Stoodley, I. (2004). Ways of experiencing the act of learning to program: phenomenographic study of introductory programming students at university. *Journal of Information Technology Education* 3(n/a), 144.
- Bryk, A., Sebring, P., Kerbow, D., Rollow, S., & Easton, J. (1998). *Charting Chicago School reform*. Boulder, CO: Westview Press.
- Burnes B. 1996. *Managing change: A strategic approach to organizational dynamics*. (2<sup>nd</sup> edn). Pitman: London.
- Buyesse, V., Sparkman, K.L., & Wesley, P.W. (2003). Communities of practice: Connecting what we know with what we do. *Exceptional Children*, 69, 263–277.
- Byham, W. C. (2010). Business networking can be taught: Building a healthy business network is a necessary and thoroughly trainable skill for the new millennium. *T AND D*, 64(5), 64-68.
- Caruso, S.J. Paper presented at the Midwest Research-to-Practice Conference in Adult, Continuing, Community and Extension Education, Northeastern Illinois University, Chicago, IL, October 21-23, 2009.
- Cho, H., Gay, G., Davidson, B., & Ingraffea, A. (2007). Social networks, communication styles, and learning performance in a CSCL community. *Computers & Education*, 49(2), 309-329.
- Coburn, C. E., & Russell, J. L. (2008). District Policy and Teachers' Social Networks. *Educational Evaluation and Policy Analysis*, 30(3), 203-235.

- Connell, R. S. (2009). Academic libraries, Facebook and Myspace, and student outreach: A survey of student opinion. *Libraries and the Academy*, 9(1), 25-36.
- Cook, S., & Yanow, D. (1993). Culture and organizational learning. *Journal of Management Inquiry*, 2(4), 373-390.
- Cope, C. J. (2004). Ensuring validity and reliability in phenomenographic research using the analytical framework of a structure of awareness. *Qualitative Research Journal*, 4(2), 5-18.
- Creswell, J. W. (1994). *Research design – Qualitative & quantitative approaches*. Thousand Oaks, CA: Sage.
- Creswell, J. W. (1998). *Qualitative inquiry and research design: Choosing among five traditions*. Thousand Oaks, CA: Sage.
- Creswell, J. W. (2009). *Research Design* (Third Edition). Thousand Oaks: Sage Publications.
- Cross, J. (2007). *Informal learning: Rediscovering the natural pathways that inspire innovation and performance*. San Francisco: Pfeiffer.
- Crotty, M. (1998). *The foundations of social research: meaning and perspective in the research process*. Thousand Oaks, California: Sage.
- Daly, A. (2010). *Social network theory and educational change*. Cambridge, MA: Harvard Education Press.
- Daly, A., Moolenaar, N., Bolivar, J., & Burke, P. (2010). Relationships in reform: The role of teachers' social networks. *Journal of Educational Administration*, 48(3), 359-391.

- Darling-Hammond, L. (1997). *The right to learn: A blueprint for creating schools that work*. San Francisco, CA: Jossey-Bass.
- Darling-Hammond, L. (2010). Restoring our schools Forget quick fixes. To compete globally, we need to improve the whole system. *NATION -NEWYORK-*, 290(23), 14-19.
- Darling-Hammond, L., & Richardson, N. (2009). Teacher learning: What matters? *Educational Leadership*, 66(5), 46.
- Dawson, S. (2008). A study of the relationship between student social networks and sense of community. *Educational Technology & Society*, 11(3), 224-238.
- Debatin, B., Lovejoy, J., Horn, A., & Hughes, B. (2009). Facebook and online privacy: attitudes behaviours, and unintended consequences. *Journal of Computer-Mediated Communication*, 15(1), 83-108.
- DeMoss, Susan Elaine (1998). A conceptual analysis of a parent-culture's perceptions of parent involvement. Ph.D. dissertation, The University of Oklahoma, United States -- Oklahoma. Retrieved February 27, 2012, from Dissertations & Theses @ University of Oklahoma.(Publication No. AAT 9905611).
- DeMoss, S., & Vaughn, C. (2000). Reflections on theory and practice in parent involvement from a phenomenological perspective. *The School Community Journal*, 10(1), 45-59.
- DeWalt, K. & DeWalt, B. (2002). *Participant observation: a guide for fieldworkers*. Walnut Creek, CA: AltaMira Press.

- Dexter, S., Seashore, K. R., & Anderson, R. E. (2002). Contributions of professional community to exemplary use of ICT. *Journal of Computer Assisted Learning* (18), 489-497.
- Dicks, B., Mason, B., Coffey, A., & Atkinson, P. (2005). *Qualitative research and hypermedia: Ethnography for the digital age*. New York: Sage.
- DiMicco, J., Millen, D., Geyer, W., Dugan, C., Brownholtz, B., & Muller, M. (2008). *Motivations for Social Networking at Work*. Paper presented at the Proceedings of the 2008 ACM conference on Computer supported cooperative work, San Diego, CA, USA.
- Dirksen, V., Huizing, A., & Smit, B. (2010). 'Piling on layers of understanding': The use of connective ethnography for the study of (online) work practices. *New Media & Society*, 12, 1045-1063.
- Dobbs, K. (2000). Simple moments of learning. *Training*, 135(January), 52-57.
- DuFour, R. (2004). What Is a "Professional Learning Community"? *Educational Leadership*, 61(8), 6.
- DuFour, R., & Eaker, R. (1998). *Professional learning communities at work: Best practices for enhancing student achievement*. Bloomington, IN: Solution Tree.
- Dufour, R., Eaker, R., & Dufour, R. . (2005). *On common ground: The power of professional learning communities*. Bloomington, IN: Solution Tree.
- Dunkin, R. (2000). Using phenomenography to study organizational change. In J. A. Bowden & E. Walsh (Eds.), *Phenomenography* (pp. 137-152). Melbourne, Australia: RMIT University Press.

- Dwyer, C., Hiltz, S. R., & Passerini, K. (2007). Trust and privacy concern within social networking sites: a comparison of Facebook and Myspace. Retrieved from <http://csis.pace.edu/~dwyer/research/DwyerAMCIS2007.pdf>
- Ebersole, S., & Vorndam, M. (2002). *Adoption of Computer-Based Instructional Methodologies: A Case Study*. In P. Barker & S. Rebelsky (Eds.), *Proceedings of World Conference on Educational Multimedia, Hypermedia and Telecommunications 2002* (pp. 465-471). Chesapeake, VA: AACE. Retrieved October 29, 2013 from <http://www.editlib.org/p/9853>.
- Elmore, R. (2000). *Building a new structure for school leadership*. Paper presented at the Albert Shanker Institute, Washington D.C.
- Entwistle, N., & Marton, F. (1994). Knowledge objects: Understandings constituted through intensive academic study. *British Journal of Educational Psychology*, 64(1), 161-178.
- Entwistle, N. J., & Peterson, E. R. (2004). Conceptions of learning and knowledge in higher education: Relationships with study behaviour and influences of learning environments. *International Journal of Educational Research*, 41(6), 407-428.
- Ertmer, P. (2005). Teacher pedagogical beliefs: The final frontier in our quest for technology integration. *Educational Technology Research and Development*, 53(4), 25-39.
- Farber, M. (1966). *The Aims of Phenomenology*. New York, Harper & Row.
- Feger, S., & Arruda, E. (2008). *Professional learning communities: Key themes from the literature*. Providence, RI: The Education Alliance, Brown University.

- Fernback, J. (2002). The individual within the collective: Virtual ideology and the realization of collective principles. In S. G. Jones (Ed.), *Virtual Culture: Identity and Communication in Cybersociety*. Thousand Oaks, CA: Sage.
- Fortino, A., & Nayak, A. (2010, 7-7 May 2010). *An architecture for applying social networking to business*. Paper presented at the Applications and Technology Conference (LISAT), 2010 Long Island Systems.
- Fullan, M. (1999). *Change forces: The sequel*. London: Falmer Press.
- Fullan, M. (2001). *Leading in a culture of change*. San Francisco: Jossey- Bass.
- Fullan, M. (2005). *Leadership and sustainability: System thinkers in action*. Thousand Oaks, CA: Corwin Press.
- Gadamer, H. *Philosophical Hermeneutics*, California, University of California Press, 1976a.
- Gajda, R., & Koliba, C. (2007). Evaluating the imperative of intraorganizational collaboration: A school improvement perspective. *American Journal of Evaluation*, 28(1), 26-44.
- Gamoran, A., Gunter, R., & Williams, T. (2005). Professional community by design: building social capital through teacher professional development In L. V. Hedges & B. Schneider (Eds.), *Social Organization of schooling*. New York: Russell Sage Foundation.
- Gatson, S. (2011). The methods, politics and ethics of representation in online ethnography. In Denzin & Lincoln (Eds.), *Sage Handbook of Qualitative Research* (4 ed.). Los Angeles: Sage Publication.

- Gee, J. P. (2000). *Situated language and learning: A critique of traditional schooling*. New York: Routledge.
- Gee, J. P. (2007). *Situated language and learning A critique of traditional schooling*. New York: Routledge.
- Gibbs, G. R. (2007). Analyzing qualitative data. In I. U. Flick (Ed.), *The Sage qualitative research kit*. London: Sage.
- Glesne C., Peshkin A. (1992). *Becoming qualitative researchers: An introduction*. Longman, New York: White Plains.
- Glickman, C. (2003). *Holding sacred-ground: Essays on leadership, courage, and endurance in our schools*. San Francisco: Jossey-Bass.
- Goffman, E. (1967). *Interaction ritual: Essays in Face-to-Face Interaction*. Garden City, NY: Anchor.
- Goffman, E. (1981). *Forms of talk*. Philadelphia: University of Pennsylvania.
- Granger, C. A., Morbey, M. L., Lotherington, H., Owston, R. D., & Wideman, H. H. (2002). Factors contributing to teachers' successful implementation of IT. *Journal of Computer Assisted Learning*, 18(4), 480–488.
- Green, P. (2005). Spaces of influence: A framework for analysis of an individual's contribution within communities of practice. *Higher Education Research & Development*, 24(4), 293-307.
- Greenhow, C., & Burton, L. (2011). Help from my "friends": Social capital in the social networks sites of low income students. *Journal of Educational Computing Research*, 45(2), 223-245.

- Greenhow, C., & Robelia, B. (2009). Informal learning and identity formation in online social networks. *Learning, Media & Technology*, 34(2), 119-140. doi: 10.1080/17439880902923580.
- Greenhow, C., & Robelia, B. (2009). Old Communication, New Literacies: Social Network Sites as Social Learning Resources. *Journal of Computer-Mediated Communication*, 14(4), 1130-1161. doi: 10.1111/j.1083-6101.2009.01484.x
- Hargreaves, A., Earl, L., Moore, S., & Manning, S. (2001). *Learning to change: Teaching beyond subjects and standards*. San Francisco: Jossey-Bass.
- Hargreaves, A., & Fink, D. (2006). Redistributed leadership for sustainable professional learning communities. *Journal of School Leadership*, 16, 550-565.
- Hasselgren, B. & Beach, D. (1997). Phenomenography - "a good-for-nothing brother" of phenomenology? *Higher Education Research and Development*, v.16, n.2, p.191-202.
- Holmstrom, I., Halford, C., & Rosenqvist, U. (2003). Swedish health care professionals' diverse understandings of diabetes care. *Patient Education and Counseling*, 51(1), 53\_58.
- Hord, S. (1997). *Professional learning communities: What are they and why are they important?* Austin, TX: Southwest Educational Development Laboratory (SEDL).
- Hord, S. M. (2009). Professional learning communities: Educators work together toward a shared purpose. *Journal of Staff Development*, 30(1), 40-43.
- Hubbard, L., Mehan, H., & Stein, M. (2006). *Reform as learning*. New York NY: Routledge.

- Huffman, J. B., & Hipp, K. K. (2003). *Reculturing schools as professional learning communities*. Lanham, MD: Scarecrow Education.
- Jackson, D. & Burns, M., (2005). *Two System-wide Network Reforms in the UK: Learning themes from the Networked Learning Communities and the Leading Edge Partnership Programmes*. Paper presented at International Congress for School Effectiveness and Improvement (ICSEI) Annual Conference, Barcelona 2–5 January 2005.
- Jones, S. R. (2006). *Negotiating the complexities of qualitative research in higher education: fundamental elements and issues*. New York: Routledge.
- Johansson, B., Marton, F., & Svensson, L. (1985). In L. Pines & T. West (Eds.), *Cognitive structure and conceptual change* (pp. 233-257). New York: Academic Press.
- Jue, A. L., Marr, J. A., & Kassotakis, M. E. (2010). *Social media at work*. San Francisco, CA: Jossey-Bass.
- Kaplan, A., & Haenlein, M. (2010). Users of the world unite! The challenges and opportunities of social media. *Business Horizons*, 53(1), 59-68.
- Keiser, J. (2010). Identifying variations in thinking about the nature of science: A phenomenographic study. Ph.D. dissertation, University of Minnesota, United States -- Minnesota. Retrieved February 27, 2012, from Dissertations & Theses: Full Text.(Publication No. AAT 3408404).
- King, K. P. (2011). Professional learning in unlikely spaces: Social media and virtual communities as professional development. *International Journal of Emerging Technologies in Learning*, 6(4), 40-46.

- Koleck, E. A., & Saunders, D. (2008). Online disclosure: an empirical examination of undergraduate Facebook profiles. *NASPA Journal*, 45(1), 1-24.
- Krishnamurthy, S., Dou, W., (2008). Advertising with User-Generated Content: A Framework and Research Agenda. *Journal of Interactive Advertising* 8(2): 1–7.
- Lackes, R., Frank, E., & Sieperman, M. (2009). Social networks as an approach to the enhancement of collaboration among universities and corporate research and development. *International Journal of Web Based Communities*, 5(4), 577–592.  
Retrieved from <http://emnet.univie.ac.at>.
- Langenbach, M., Vaughn, C. & Aagaard, L. (1994). *An introduction to educational research*. Needham Heights, MA: Allyn and Bacon.
- Larsson, J., Holmström, I., Lindberg, E., & Rosenqvist, U. (2004). Trainee anaesthetists understand their work in different ways: implications for specialist education. *British journal of anaesthesia*, 92(3), 381-387.
- Le Compte, M. D., & Schensul, J. J. (Eds.). (1999). *Designing and conducting ethnographic research* (Vol. 1). Rowman Altamira.
- Leithwood, K., Lawrence, L., & Sharrett, L. (1998). Conditions fostering organizational learning in schools. *Educational Administration Quarterly*, 34, 243-276.
- Leonard, L. & Leonard, P. (2003, September 17). The continuing trouble with collaboration: Teachers talk. *Current Issues in Education* [On-line], 6(15).  
Retrieved from: <http://cie.ed.asu.edu/volume6/number15/>.
- Lewis, L., Koston, Z., Quartley, M., & Adsit, J. (2010-2011). Virtual Communities of Practice: Bridging Research and Practice Using Web 2.0. *Journal of Educational Technology Systems*, 39(2), 155-161.

- Leximancer [Computer software]. Australia.
- Li, L., & Pitts, J. P. (2009). Does it really matter? Using virtual office hours to enhance student-faculty interaction. *Journal of Information Systems Education*, 20(2), 175-185.
- Lieberman, A. (2000). Networks as Learning Communities. *Journal of Teacher Education*, 51(3), 221-227.
- Lincoln, Y., & Guba, E. (1985). *Naturalistic Inquiry*. Newbury Park, CA: Sage Publications, Inc.
- Little, J. W. (1993). Professional community in comprehensive high schools: The two worlds of academic and vocational teachers. In J.W. Little and M. McLaughlin (Eds) *Teacher's work: Individuals, colleagues and contexts* (pp.137-163). New York: Teachers College Press.
- Little, J. W. (2005, February). [Nodes and nets: Investigating resources for professional learning in schools and networks].
- Lortie, D. (1975). *Schoolteacher: A sociological study*. Chicago: University of Chicago Press.
- Mack, D., & Head, A. (2007). Reaching students with Facebook: data and best practices. *Electronic Journal of Academic and Special Librarianship*, 8(2).
- Madge, C., Meek, J., Wellens, J., & Hooley, T. (2009). Facebook, social integration and informal learning at university: 'It is more for socialising and talking to friends about work than for actually doing work'. *Learning, Media and Technology*, 34(2), 141-155.

- Maehr, & P. R. Pintrich (Eds.), *Advances in motivation and achievement* (Vol. 7, pp. 85-113). Greenwich, CT.
- Manen, M van. (1990). *Researching lived experience: Human science for an action-sensitive pedagogy*. New York, NY: State University of New York.
- Markham A. The Methods, Politics, and Ethics of Representation in Online Ethnography. In: Denzin NK, Lincoln Y, eds. *The Sage Handbook of Qualitative Research* 3rd ed. Thousand Oaks, California: Sage Publications, Inc.; 2005.
- Martinsons, M. G., & Chong, P. K. (1999). The influence of human factors and specialist involvement on information systems success. *Human Relations*, 52(1), 123–132. doi: 10.1177/001872679905200107.
- Marton, F. (1981). Phenomenography — Describing conceptions of the world around us. *Instructional Science*, 10(2), 177-200.
- Marton F. (1986). 'Phenomenography—a research approach to investigating different understandings of reality', *Journal of Thought*, 21(3), 28–49.
- Marton, F. (1992). Phenomenography and "the art of teaching all things to all men". *International Journal of Qualitative Studies in Education*, 5(3), 253-267.
- Marton, F., & Booth, S. (1997). *Learning Awareness*. Mahwah, New Jersey: Lawrence Erlbaum Associates.
- Marton, F., & Pang, M. F. (1999). *Two faces of variation*. Paper presented at the 8<sup>th</sup> European Conference for learning and instruction, August 24 – 28, 1999, Goteberg University, Goteberg, Sweden.
- Marton, F., & Pong, W. Y. (2005). On the unit of description in phenomenography.

*Higher Education Research & Development*, 24(4), 335-348. doi:  
10.1080/07294360500284706

- Marton, F., & Saljo, R. (1976). On qualitative differences in learning outcome and process. *British Journal of Educational Psychology*, 46, 4-11.
- Marton, F., & Säljö, R. (1984). Approaches to learning in Marton, F., Hounsell, D. & Entwistle, N. (Eds.). *The experience of learning* (36-55). Edinburgh, Scotland: Scottish Academic Press.
- Marton, F., Svensson, L., & Goteborg Univ, M. D. o. E. (1982). Towards a phenomenography of learning. II: A relational view of study skill. 1982:07.
- Marton, F., & Tsui, A. B. M. (2004). *Classroom discourse and the space of learning*. Mahwah, NJ US: Lawrence Erlbaum Associates Publishers.
- Marzano, R., Waters, T., McNulty, B. (2005). *School leadership that works: From research to results*. Aurora, CO: Mid-continent Research for Education and Learning.
- Maxwell J.A. (1996). *Qualitative Research Design*. Sage, Newbury Park, CA.
- Mazer, J., Murphy, R., & Simonds, C. (2007). I'll see you on Facebook: The effects if computer-mediated teacher self disclosure on student motivation, affective learning, and classroom climate. *Communication and Education*, 56(1), 1-17.
- Mazman, S. G., & Usluel, Y. K. (2010). Modeling educational usage of Facebook. *Computers & Education*. doi: doi:10.1016/j.compedu.2010.02.008.
- McGregor, J., Fielding, M., Robinson, C., & Spender, B. (2006). *Footprints of practice: exploring the sharing and development of practice through collaborative adult learning*. Paper presented at the National College for School Leadership.

- McLaughlin, M. W., & Talbert, J. E. (2001). *Professional communities and the work of high school teaching*. Chicago: University of Chicago Press.
- McPherson, M., Smith-Lovin, L., & Cook, J. M. (2001). Birds of a feather: Homophily in social networks. *Annual Review of Sociology*, 27, 415-444.
- Meister, J., & Willyerd, K. (2010). Looking ahead at social learning: 10 predictions. *ASTD*, July.
- Merriam S. (1988). *Case Study Research in Education: A Qualitative Approach*. Jossey-Bass, San Francisco, CA.
- Merriam, S. B., Caffarella, R. S., and Baumgartner, L. M. (2007). *Learning in adulthood: A comprehensive guide* (3rd ed.). San Francisco: Jossey-Bass.
- Meyer, K. A., & McNeal, L. (2011). Academics online: Their interests and foibles. *The Internet and Higher Education*, 14(2), 113-120. doi: 10.1016/j.iheduc.2010.09.002.
- Mingers, J. (2001) Combining research methods: Towards a pluralistic methodology, *Information Systems Research*, 12(3), 240-259.
- Mitchell, C., & Sackney, L. (2006) Relationships in the Study of Learning Communities. [Book Review]. *School Effectiveness & School Improvement*, 13(4), 453.
- Mohrman, S. A., Tenkasi, R. V., & Morhman, A. M., Jr. (2003). The role of networks in fundamental organizational change: A grounded analysis. *Journal of Applied Behavioral Science*, 39(3), 301-323.
- Moller, G. (2006). Teacher leadership emerges within professional learning communities. *Journal of School Leadership*, 16, 520-533.

- Moore, B. (2008). Using technology to promote communities of practice (CoP) in social work education. *Social Work Education*, 27(6), 592-600.
- Morse, J. M., Barrett, M., Mayan, M., Olson, K., & Spiers, J. (2002). Verification strategies for establishing reliability and validity in qualitative research. *International Journal of Qualitative Methods*, 1(2), 1-19.
- Moustakas, C. (1994). Human science perspectives and models. In *Phenomenological research methods* (pp. 1-24). Thousand Oaks, CA: Sage.
- Mullen, E., Bledsoe, S., & Bellamy, J. (2008). Implementing evidence-based social work practice. *Research on Social Work Practice*, 18. Retrieved from doi:10.1177/1049731506297827.
- Newman I., Benz C.R. (1998). *Qualitative-Quantitative research methodology: Exploring the interactive continuum*. Southern Illinois University Press, Carbondale, IL.
- Newmann, F., & Wehlage, G. (1995). *Successful school restructuring. A report To the public and educators by the Center on Organization and Restructuring of Schools*. Madison, WI: Wisconsin Center for Education Research.
- Newmann, F. M., & Wehlage, G. (1997). *Successful school restructuring: A report To the public and educators by the Center on Organization and Restructuring of 414 Schools*. Madison, WI: Wisconsin Center for Education Research.
- Nias, J., Southworth, G., & Yeomans, R. (1989). *Staff relationships in the primary school*. London: Cassell.

- Nielson, J. (2006). Participation Inequality: Encouraging more users to contribute. [Data set and article] Retrieved from <http://www.nngroup.com/articles/participation-inequality/>.
- Nielsen, J. F. (2008). Models of change and the adoption of web technologies: Encapsulating participation. *Journal of Applied Behavioral Science*, 44(2), 263–289. doi: 10.1177/0021886308314900.
- Norwood S. (2000) *Research strategies for advanced practice nurses*. Upper Saddle River, NJ: Prentice-Hall
- O'Hair, M. J., McLaughlin, J. J., & Reitzug, E. C. (2000). *Foundations of democratic education*. Fort Worth, TX: Harcourt College Publishers.
- O'Hair, M. J., Reitzug, U. C., Cate, J., Gentry, D., Garn, G., & Jean-Marie, G. (2005). Networking for professional learning communities: school-university-community partnerships enhance student achievement. In V. Wiel & M. J. O'Hair (Eds.), *Network Learning for Educational Change*. New York: Open University Press.
- Olivier, D. F., & Hipp. K. (2006). Leadership capacity and collective efficiency: Interacting to sustain student learning in a professional learning community. *Journal of School Leadership*, 16, 505-519.
- Onwuegbuzie, A., & Leech, N. (2007). Validity and qualitative research: An oxymoron? *Quality & Quantity*, 41(2), 233–249. doi:10.1007/s11135-006-9000-3.

- Orr, E., Sisic, M., Ross, C., Simmering, M. G., Arseneault, J. M., & Orr, R. R. (2009). The influence of shyness on the use of Facebook in an undergraduate sample. *Cyberpsychology and Behaviour*, 12(3), 337-344.
- Ou, C. X., Davison, R. M., Zhong, X., & Liang, Y. (2010). Empowering employees through instant messaging. *Information Technology & People*, 23(2), 193–211. doi: 10.1108/09593841011052165.
- Pang, M. F. (2003). Two faces of variation: On continuity in the phenomenographic movement. *Scandinavian Journal of Educational Research*, 47(2), 145-156. doi: 10.1080/00313830308612.
- Park N, Kee K, Valenzuela S. (2009). Being immersed in social networking environment: Facebook groups, uses and gratifications, and social outcomes. *Cyberpsychology & Behavior* 12(6): 729–733.
- Patton, M. Q. (2003). *Qualitative evaluation and research methods*. Newbury Park, CA: Sage.
- Penn-Edwards, S. (2010). Computer Aided phenomenography: The role of Leximancer a computer software in phenomenographic investigation. *The Qualitative Report*, 15(2), 252-267.
- Pew Research Center (2013). The Demographics of Social Media Users – 2012 [Online Report]. Retrieved from: <http://pewinternet.org/Reports/2013/Social-media-users.aspx>.
- Pidgeon, N. (1996). Grounded theory: Theoretical background. In J.T.E. Richardson (Ed.), *Handbook of qualitative research methods for psychology and the social sciences* (pp. 75-85). Leicester, U.K.: BPS Books.

- Powell, J., Hochstrasser Fickel, L., Chesbro, P., & Box, N. (2010). What's that noise? Things that keep us awake at night: the cost of unexamined assumptions in pre-service assessment *Advances in research on teaching* 12, 163-181.
- Prewitt, Vana (2005). Geometric learning with emotions, relationships and reflection: A phenomenographic study of adult nonformal learners. Ph.D. dissertation, Fielding Graduate University, United States -- California. Retrieved February 27, 2012, from Dissertations & Theses: Full Text.(Publication No. AAT 3199630).
- Prosser, M. (2000). Using phenomenographic research methodology in the context of research in teaching and learning. In J. Bowden & E. Walsh (Eds.), *Phenomenography* (pp. 34-47). Melbourne: RMIT University Press.
- Pugach, M. C., & Johnson, L. J. (1995). *Collaborative practitioners, collaborative schools*. Denver, CO: Love.
- Pugach, M. (1999). The professional development of teachers from a “communities of practice” perspective. *Teacher Education and Special Education*, 22(3), 217-233.
- Reichstetter, R. (2006). Defining a professional learning community: A literature review. *E&R Research Alert*, #06.05. Retrieved August 8, 2008, from [http://www.wcpss.net/evaluation-research/reports/2006/0605plc\\_lit\\_review.pdf](http://www.wcpss.net/evaluation-research/reports/2006/0605plc_lit_review.pdf).
- Rheingold, H. (1993). *The virtual community: homesteading on the electronic frontier*. Reading, MA: Addison-Wesley
- Rigano, D., & Ritchie, S. (2003). Implementing change within a schools science department dissonant voices. *Research in Science Education*, 33(3), 299-317.

- Ross, C., Orr, E., Sisic, M., Arseneault, J. M., Simmering, M. G., & Orr, R. (2009). Personality and motivations associated with Facebook use. *Computers and Human Behaviour*, 25(2), 578-586.
- Rusch, E. A. (2005). Institutional Barriers to Organizational Learning in School Systems: The Power of Silence. *Educational Administration Quarterly*, 41(1), 83-120.
- Saljo, R. (1997). Talk as data and practice-A critical look at phenomenographic inquiry and the appeal to experience. *Higher Education Research & Development*, 16(2), 173-190.
- Sandberg, J. (1994). Human competence at work. Go'teborg: Department of Educational Sciences, University of Go'teborg.
- Sandberg, J. (1997). Are phenomenographic results reliable? *Higher Education Research and Development*, 16(2), 203-212.
- Sandberg, J. (2000). Understanding human competence at work: An interpretive approach, *Academy of Management Journal*, 43, 9-25.
- Sandberg, J. (2001). The constructions of social constructionism. In S.-E. Sjöstrand, J. Sandberg, & M. Tyrstrup (Eds.), *Invisible management: The social construction of leadership*. London: Thomson
- Schensul, S., Schensul, J. & LeCompte, M. (1999). *Essential ethnographic methods: observations, interviews, and questionnaires* (Book 2 in Ethnographer's Toolkit). Walnut Creek, CA: AltaMira Press.
- Schmoker, M. (2005). Tipping point: From feckless reform to substantive instructional improvement. *Phi Delta Kappan*. 424-432.

- Schroeder, J., & Greenbowe, T. (2009). The chemistry of Facebook: Using social networking to create an online community for the organic chemistry laboratory. *Journal of Online Education*, 5(4).
- Schunk, D. H. (1991). Learning theories: An educational perspective. New York, NY England, Macmillan Publishing Co, Inc.
- Schwandt, Thomas, A. 2001, *Dictionary of Qualitative Research*, Sage, Thousand Oaks, California.
- Scribner, J. P. (1999). Professional development: Untangling the influence of work context on teacher learning. *Educational Administration Quarterly*, 35, 238-266.
- Selwyn, N. (2009). Faceworking: exploring students' education-related use of Facebook. *Learning, Media & Technology*, 34(2), 157-174.
- Senge, P. (1990). *The fifth discipline: The art and practice of the learning organization*. New York, NY: Doubleday.
- Senge, P. (1995). On schools as learning organizations: A conversation with Peter Senge. *Educational Leadership*, 52(7), 20-23.
- Sergiovanni, T. J. (1994). *Building community in schools*. San Francisco: Jossey-Bass.
- Schensul, J. J., LeCompte, M. D., Nastasi, B. K., & Borgatti, S. P. (1999). *Enhanced ethnographic methods: Audiovisual techniques, focused group interviews, and elicitation techniques*. Altamira Press.
- Shirky, C. (2003). Social software and the politics of groups Retrieved April, 2011, from [www.shirky.com/writings/group\\_politics.html](http://www.shirky.com/writings/group_politics.html)
- Sirkin, H. L., Keenan, P., & Jackson, A. (2005). The hard side of management. *Harvard Business Review*, 83(10), 108–118.

- Stafford, T., Stafford, M., Schkade, L. (2004). Determining uses and gratifications for the internet. *Decision Sciences* 35(2): 259–288.
- Stalsby-Lundborg, C., Wahlstrom, R., & Dall’Alba, G. (1999). Ways of experiencing asthma management. *Scandinavian Journal of Primary Health Care*, 17, 226-231.
- Stewart, P. (2008). *Facebook: A school librarian's tool for building a community of readers*. Paper presented at the International Association of School Librarianship Annual Conference, Brantford.
- Stiles, W.B. (1993). Quality control in qualitative research. *Clinical Psychology Review*, 13, 593-618.
- Stoll, L., Bolam, R., McMahon, A., Thomas, S., Wallace, M., Greenwood, A., & Hawkey, K. (2005). *What is a professional learning community? A summary*. Retrieved February, 2011, from <http://www.decs.sa.gov.au/docs/documents/1/ProfessionalLeaningComm-1.pdf>
- Stoll, L., Bolam, R., McMahon, A., Wallace, M., & Thomas, S. (2006). Professional learning communities: a review of the literature. *Journal of Educational Change*, 2006(7), 221-258.
- Stoll, L., & Louis, K. S. (2007). Professional learning communities: Elaborating new approaches. In L. Stoll & K. S. Louis (Eds.), *Professional learning communities: Divergence, depth, and dilemmas*, pp. 1-14. Berkshire, England: Open University Press.

- Stolley, K. (2009). Integrating social media into existing work environments. *Journal of Business and Technical Communication*, 23(3), 350–371. doi: 10.1177/1050651909333260.
- Supovitz, J. A. (2002). Developing communities if instructional practice. *Teachers College Board*, 104(8), 1591-1626.
- Suster, M. (2010, August 24). Re: The 1/9/90 rule of UGC & Why it's OK to have lurkers. Retrieved from <http://www.bothsidesofthetable.com/2010/08/24/the-1990-rule-of-ugc-why-its-ok-to-have-lurkers/>.
- Talbert, J. (2010). Professional learning communities at the crossroads: How systems hinder or engender change. In A. Hargreaves (Ed.), *Second International Handbook of Educational Change*.
- Tenkasi, R., & Chesmore, M. (2003). Social network and planned organizational change. *Journal of Applied Behavioral Science*, 39(3), 281-300.
- ThiêNguyin, T. (2008). Peer debriefing. In L. Given (Ed.), *The SAGE encyclopedia of qualitative research methods*. (p. 605). Thousand Oaks, CA: SAGE Publications, Inc. doi: 10.4135/9781412963909.n312.
- Thevenot, G. (2007). Blogging as a social media. *Tourism and Hospitality Research*, 7(3/4), 282–289. Retrieved from <http://www.palgrave-journals.com>.
- Thompson, A., Dawson, K., Ferdig, R., Black, E., Boyer, J., J, C., & N., B. (2008). The intersection of online social networking with medical professionalism. *Journal of General Internal Medicine*, 23(7), 954-957.
- U.S. Department of Labor (2011-2012) *Reports of demographics by occupation*. [Data set]. Retrieved from <http://www.dol.gov/dol/topic/statistics/demographics.htm>.

- van Zyl, A. S. (2009). The impact of social networking 2.0 on organizations. *The Electronic Library*, 27(6), 906–918. doi: 10.1108/02640470911004020.
- Webb, G. (1997). Deconstructing deep and surface: towards a critique of phenomenography. *Higher Education*, 33(2), 195-212.
- Wellman, B. (2001). Computer networks as social networks. *Science*, 293.
- Wenger, E. (2000). Communities of Practice and Social Learning Systems. *Organization*, 7(2), 225-246.
- Wenger, E., McDermott, R., & Snyder, W. (2002). *Cultivating communities of practice*. Boston: Harvard Business School Press.
- Wheatley, M. J. (1999). *Leadership and the new science*. San Francisco, CA: Berrett-Koehler Publishers.
- White, S. H., & McIntosh, J. (2007). Data delivers a wake-up call. *Journal of Staff Development*, 28(2), 30-35.
- Williams, A., Prestage, S., & Bedward, J. (2001). Individualism to Collaboration: the significance of teacher culture to the induction of newly qualified teachers. *Journal of Education for Teaching*, 27(3), 253-267.
- Williams, Leslie Ann (2006). The influence of technology integration on high school collaboration through the development of a professional learning community: A mixed methods study. Ph.D. dissertation, The University of Oklahoma, United States -- Oklahoma. Retrieved February 27, 2012, from Dissertations & Theses @ University of Oklahoma.(Publication No. AAT 3214722).

- Williams, L., Atkinson, L., Cate, J., & O'Hair, M. J. (2008). Mutual support between learning community development and technology integration: Impact on school practices and student achievement. *Theory into Practice, 47*, 294-302.
- Wood, D. (2007). Teachers' learning communities: Catalyst for change or a new infratructure for the status quo? *Teacher College Record, 109*(3), 699-739.
- Zhang, Z. (2010). Feeling the sense of community in social networking usage. *IEEE Transactions on Engineering Management, 57*(2), 225-239.

## Appendix A: Institutional Review Board

701-A-1

### University of Oklahoma Institutional Review Board Informed Consent to Participate in a Research Study

**Project Title:** Network of Professional Learning Communities  
**Principal Investigator:** Nicole Watkins  
**Department:** Educational Administration and Curriculum Supervision

You are being asked to volunteer for this research study. This study is being conducted within the online network, Boomrang and select interview locations. You were selected as a possible participant because of your participation in the online social network.

Please read this form and ask any questions that you may have before agreeing to take part in this study.

#### **Purpose of the Research Study**

The purpose of this study is: to examine perspectives of teachers on the impact of a networked professional learning community, Boomrang, as a social network on change of practice.

#### **Number of Participants**

About 27-30 people will take part in this study.

#### **Procedures**

If you agree to be in this study, you will be asked to do the following: Meet with the principle investigator for an initial interview, review interview data for accuracy, and potentially participate in the follow up interview.

#### **Length of Participation**

All interviews will be conducted at a location convenient and neutral for you during the spring semester of the 2011-2012 school year. Initial interviews will last approximately one hour. Transcribed interview data will be made available for your review within two weeks of interview. Follow-up interviews will last approximately 30 minutes. If your membership in the social network changes during the course of the study your participation may be terminated by the investigator without regard to participant's consent.

#### **This study has the following risks:**

There are no perceived risks. Audio recordings of the interviews will be made and transferred to a password protected computer. Paper data will be kept under lock and key with access limited to the principle investigator and faculty sponsor. All data collected will be destroyed at the conclusion of the study. Participants will be referred to by pseudonyms of their choosing rather than personal identifiers.

Revised 01/06/2009



IRB NUMBER: 0772  
IRB APPROVAL DATE: 02/03/11  
IRB EXPIRATION DATE: 02/03/14

701-A-1

**Benefits of being in the study are**

There are no benefits beyond those included in individual growth and development as a teacher/faculty member by participation in the online community to participating in the study.

**Confidentiality**

In published reports, there will be no information included that will make it possible to identify you. Research records will be stored securely and only approved researchers will have access to the records.

There are organizations that may inspect and/or copy your research records for quality assurance and data analysis. These organizations include the OU Institutional Review Board.

**Compensation**

You will not be reimbursed for your time and participation in this study.

**Voluntary Nature of the Study**

Participation in this study is voluntary. If you withdraw or decline participation, you will not be penalized or lose benefits or services unrelated to the study. If you decide to participate, you may decline to answer any question and may choose to withdraw at any time.

**Waivers of Elements of Confidentiality**

Your name will not be linked with your responses unless you specifically agree to be identified. Please select one of the following options

- \_\_\_\_\_ I consent to being quoted directly.
- \_\_\_\_\_ I do not consent to being quoted directly.
- \_\_\_\_\_ I consent to having my name reported with quoted material.

**Audio Recording of Study Activities**

To assist with accurate recording of participant responses, interviews may be recorded on an audio recording device. You have the right to refuse to allow such recording without penalty. Please select one of the following options.

I consent to audio recording.    ☐    Yes    ☐    No.

Revised 01/08/2009

 IRB NUMBER: 0772  
IRB APPROVAL DATE: 7/25/2013  
IRB EXPIRATION DATE: 6/30/2014

### Contacts and Questions

If you have concerns or complaints about the research, the researcher(s) conducting this study can be contacted at

Nicole Watkins [nwatkins@ou.edu](mailto:nwatkins@ou.edu), 405-325-1267

or Dr. Gregg Gam, [gami@ou.edu](mailto:gami@ou.edu), 405-325-1267.

Contact the researcher(s) if you have questions or if you have experienced a research-related injury.

If you have any questions about your rights as a research participant, concerns, or complaints about the research and wish to talk to someone other than individuals on the research team or if you cannot reach the research team, you may contact the University of Oklahoma – Norman Campus Institutional Review Board (OU-NC IRB) at 405-325-8110 or [irbi@ou.edu](mailto:irbi@ou.edu).

*You will be given a copy of this information to keep for your records. If you are not given a copy of this consent form, please request one.*

### Statement of Consent

I have read the above information. I have asked questions and have received satisfactory answers. I consent to participate in the study.

---

Signature

Date

