

ELEMENTARY TEACHERS' PARTICIPATION IN EDMODO AS A COMMUNITY OF
PRACTICE: A PHENOMENOLOGY

by

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Liberty University

A Dissertation Presented in Partial Fulfillment

Of the Requirements for the Degree

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ABSTRACT

The purpose of this phenomenological study was to describe the shared, lived experience of elementary teachers' participation in Edmodo as a community of practice. The theoretical framework guiding this research included Lave and Wenger's (1991) community of practice theory and Bandura's social learning theory (1977, 1984) which explained how learning through participation and observation occurs among teachers involved in learning communities. Social constructivism (Bruner, 1996; Piaget, 1971; Vygotsky, 1978) and adult learning theories (Mezirow, 1991, 1995; Knowles, 1984) also provided understanding as to how adults learn and create knowledge. This study described the lived experience of 10 elementary teachers and one elementary math coach in central Virginia who participated in Edmodo as a community of practice, how the presence of external factors influenced teachers' beliefs about participating in a community of practice, how the experience of teaching more rigorous mathematics instruction changed for elementary teachers before and after participating in Edmodo as a community of practice, and how elementary teachers viewed the future of their profession based on their shared experience of participating in Edmodo as a community of practice. Qualitative data collection methods to include semi-structured interviews, online document analysis, and focus group interviews were employed. Data analysis provided a rich textural and structural description of the phenomenon that elementary teachers experience when participating in Edmodo as a community of practice. This analysis included a generation of significant themes and statements followed by coding to capture the essence of the phenomenon. Further, this research study offered suggestions for future studies concerning elementary teachers' participation in online professional learning networks as communities of practice.

Keywords: communities of practice, community of practice theory, Edmodo, professional learning networks, social learning theory

Dedication

I dedicate this dissertation to Zane, my husband; to Dylan and Sawyer, our sons; to Martha Jean, my mother; to Richard, my father in law; and to Elizabeth, my close family friend. Their love, support, and encouragement during my entire doctoral journey was unwavering. I greatly appreciate the ongoing, small sacrifices they made so that I could focus my attention on research and writing. I love you all with all of my heart. I also dedicate this dissertation to my father, the late Homer F. Rush, Jr. My only regret through this journey is that I did not start earlier in my life so that he might have had the opportunity to read this completed dissertation and watch me graduate.

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Table of Contents

ABSTRACT.....	3
Dedication.....	4
Acknowledgments.....	5
List of Tables.....	11
List of Abbreviations.....	12
CHAPTER ONE: INTRODUCTION.....	13
Overview.....	13
Background.....	13
Situation to Self.....	14
Problem Statement.....	15
Purpose Statement.....	16
Significance of the Study.....	17
Research Questions.....	18
Definitions.....	19
Summary.....	20
CHAPTER TWO: LITERATURE REVIEW.....	22
Overview.....	22
Theoretical Framework.....	23
Social Constructivism.....	23
Community of Practice Theory.....	25
Adult Learning Theories.....	28
Social Learning Theory.....	29

Related Literature.....	30
Professional Learning Networks.....	31
Communities of Practice.....	36
Web-Based Social Science Software.....	43
Summary.....	50
CHAPTER THREE: METHODS.....	52
Overview	52
Design.....	52
Research Questions.....	52
Setting.....	54
Participants.....	54
Procedures.....	56
The Researcher's Role.....	57
Data Collection	58
Semi-Structured Interviews.....	59
Focus Group.....	68
Document Analysis.....	70
Data Analysis	70
Trustworthiness.....	71
Credibility.....	72
Dependability and Confirmability.....	72
Transferability.....	73
Ethical Considerations	73

Summary.....	74
CHAPTER FOUR: FINDINGS.....	75
Overview.....	75
Participants.....	75
Mary.....	76
Grace.....	76
Lynn.....	77
Catherine.....	78
Mandy.....	78
Nicole.....	79
Truly.....	80
Michelle.....	80
Faith.....	81
Savannah.....	82
Pam.....	82
Results.....	84
Theme Development.....	87
Research Question Responses.....	102
Summary.....	108
CHAPTER FIVE: CONCLUSION.....	110
Overview.....	110
Summary of Findings.....	110
Research Question 1.....	112

Research Question 2.....	113
Research Question 3.....	114
Research Question 4.....	116
Discussion.....	117
Social Constructivism.....	117
Community of Practice Theory.....	118
Adult Learning Theories.....	119
Social Learning Theory.....	120
Professional Learning Networks.....	121
Communities of Practice.....	122
Web-Based Social Science Software.....	123
Implications.....	124
Delimitations and Limitations.....	126
Recommendations for Future Research.....	128
Summary.....	130
REFERENCES.....	132
APPENDICES.....	147
Appendix A: Institutional Review Board Approval Letter.....	147
Appendix B: Investigator Signature Page.....	148
Appendix C: Informed Consent Form for Research Participants.....	149
Appendix D: Letter to Research Participants.....	152
Appendix E: Letter to Elementary Principal of Research Participants.....	154
Appendix F: Investigator's Curriculum Vitae.....	156

Appendix G: Copy of Semi-Structured Interview Questions.....	158
Appendix H: Copy of Focus Group Interview Questions.....	162

List of Tables

Table 1: Summary of Research Participants.....	83
Table 2: Codes Generated from Data Analysis.....	84
Table 3: Theme Emergence from Code Analysis.....	87

List of Abbreviations

Institutional Review Board (IRB)

Professional Learning Communities (PLCs)

Professional Learning Networks (PLNs)

Standards of Learning (SOLs)

Virginia Department of Education (VDOE)

CHAPTER ONE: INTRODUCTION

Overview

One of the relatively new and evolving technological and professional learning developments among public school elementary teachers is their participation in online professional learning networks. Online professional learning networks have been in existence since the proliferation of the Internet, but have increased in both popularity and relevancy since 2010. Twitter, Facebook, Ning, EdWeb, Classroom 2.0, and Edmodo are all professional learning networks that many educators have embraced for a variety of reasons. Some educators desire the camaraderie and sense of community that exists when interacting with other professionals with similar interests (I-Chun, 2012; Saville, 2013). Others desire a means to enhance their professional development and thereby increase their knowledge of instructional strategies and methodologies (Bull & Buechler, 1996; Clary & Wandersee, 2009). Further, some educators desire to enhance their professionalism by actively participating in an online professional learning network which functions as a community of practice (Allen, 2003; Marken & Dickinson, 2013). This chapter provides the background of the research study and its significance, identifies the problem and purpose statements, states the research questions to be addressed, and presents information on how the researcher is personally connected to the research study.

Background

Elementary teachers are presently faced with teaching much more rigorous mathematics content than in previous years (Virginia Department of Education, 2014). In order to successfully teach more rigorous state standards many elementary teachers have embraced participation in online professional learning networks (PLNs) as communities of practice

(Saville, 2013). Reasons for participation in such entities include a need for enhanced communication, the convenience of connecting with teachers without regard for time or space, and a method of collaborative dialogue (Saville, 2013). Further, having an opportunity to immediately ask questions and collaborate through webinars or online postings were additional considerations of elementary teachers participating in a community of practice (LaGarde & Whitehead, 2012; Perez, 2012).

Leveraging online and digital resources were also benefits of participation in online professional learning networks as communities of practice. Enhancing technology skills and developing digital literacy of teachers in turn assisted students with developing their own communication and higher order thinking skills (Hsu & Wang, 2011). Further, Beach (2012) provided suggestions to better leverage online, digital resources such as frequency of use, consistent communication, and collaboration on a technology plan to enhance instruction. Using an online professional learning network such as Edmodo or Twitter can transform learning and enhance professional growth for both teachers and their students (Elias, 2012; Eller, 2012). These research studies relate to the theoretical framework of this research study, especially with regards to the reasons teachers participated in an online professional learning network as a community of practice and how significant learning occurred among individuals who involve themselves in specialized online learning communities based on commonalities and similar practices (Lave & Wenger, 1991).

Situation to Self

As an elementary school administrator, I have observed and listened to the difficulties many elementary teachers faced when planning for effective, quality mathematics instruction and pacing based on the rigorous Virginia Standards of Learning. Because of these difficulties many elementary teachers turned to the use of online professional learning networks such as Edmodo, as a means of

collaborating and developing a sense of learning, a sense of community, and a sense of professionalism with other teachers (Barrett & Garrett, 2009; Cordell, Rogers, & Parker, 2012; Gavigan, 2012; LaGarde & Whitehead, 2012; Perez, 2012; Saville, 2013; Utecht, 2010). As a means of understanding the phenomenon that elementary teachers experienced when participating in an online professional learning network as a community of practice, I desired to give a voice to the participants' experiences within a community of practice so to capture its true essence (Moustakas, 1994). This research created an impetus for additional studies and provided suggestions for improving other elementary teachers' mathematics instruction, establishing their own professional learning network, and enhancing their profession through engaging in a community of practice.

The philosophical assumption that guided this research study was ontological in nature in that there were multiple realities from elementary teachers who participated in an online professional learning network as a community of practice (Creswell, 2013). Each elementary teacher participant shared different perspectives, as each have different reasons for joining and participating. Each had different experiences which affected their work as professional educators. Further, each had different opinions as to how school and central office administrators can best support them and their work.

Problem Statement

The problem that this research study addressed is how elementary teachers described their participation in Edmodo, an online professional learning network, as a community of practice. Many elementary teachers were faced with how to not only effectively teach more rigorous mathematics state standards but also how to positively contribute to their profession through an enhanced sense of community, sense of learning, and sense of professional growth. Online professional learning networks that function as communities of practice have the potential

to meet elementary teachers' instructional and professional needs (Nelson, LeBard, & Waters, 2010; Wenger, 1997). LaGarde and Whitehead (2012) revealed four reasons why teachers might choose to participate in an online professional learning network as a community of practice which include consumption, connection, creation, and contribution. Each of these considerations had the potential to encourage teachers' sense of community, sense of learning, and professional growth. Further, participation in an online professional learning network provided teachers with the opportunity for collaboration without geographic or time restrictions (Burns, 2013; Cordell, Rogers, & Parker, 2012; Hur & Brush, 2009; Mackey & Evans, 2011). Once teachers were engaged with other educators through open collaboration the potential existed for them to share instructional resources and best practices which in turn led to them aiding each other's professional growth and shifting school culture (Marken & Dickinson, 2013; Saville, 2013).

Current research on elementary teachers' participation in online professional learning networks as communities of practice indicated that teachers received professional benefit (Brouwer, Brekelman, Nieuwenhuis, & Simons, 2012; Kaldenberg, 2012). Several research studies have been conducted which examined these benefits as well as the reasons teachers chose to participate in them (Hsu & Wang, 2011; Khalid, Joyes, Ellison, & Karim, 2013). However, there does not appear to be any qualitative research studies that described the shared, lived experiences of elementary teachers who actively participated in Edmodo grade level mathematics groups as a community of practice.

Purpose Statement

The purpose of this transcendental phenomenological study is to describe what elementary teachers experienced when they participated in Edmodo, an online professional learning network, as a community of practice within a large suburban school district in central

Virginia. At this stage in the research, a community of practice is generally defined as a group of individuals who participate in common practices and activities, make decisions together, and commit themselves for a duration of time to their own and to the entire group's well-being and development (Shaffer & Amundsen, 1993). The theory guiding this research study is the community of practice theory (Lave & Wenger, 1991) as it explains the relationship between how significant learning takes place among elementary teachers who are actively involved in specialized learning communities, such as Edmodo grade level mathematics groups, which are based on common interests and similar experiences (Creswell, 1994)

Significance of the Study

There have been very few research studies conducted which describe the use of Edmodo as an online professional learning network and community of practice. Even fewer studies exist which describe Edmodo's use among elementary teachers as a forum to participate in communities of practice centered on elementary mathematics content. Existing research studies suggest that teachers receive an enhanced sense of learning, professional development, professional growth, and an enhanced sense of community through participating in an online professional learning network as a community of practice (Brouwer, et al., 2012; Eller, 2012; I-Chun, 2012; Khalid, et al., 2013, Marken & Dickinson, 2013; Tsai, 2012; Wilson, 2011). This research study addressed a gap in the literature by providing a description of the phenomenon regarding elementary teachers' and an elementary math coach's participation in a community of practice using Edmodo as the online professional learning network platform. This research study was significant to the district as it has fully implemented the use of Edmodo by elementary teachers as a blended learning platform and as a means of collaboration regarding curriculum updates, pacing guidelines, and instructional strategies.

Research Questions

The manner in which elementary teachers describe their participation in Edmodo, an online professional learning network, as a community of practice form the foundation of this phenomenological research study. Teachers who participate in an online professional learning network as a community of practice benefit from enhanced senses of learning and community, professional development opportunities, and professional growth (Brouwer, et al., 2012; Eller, 2012; I-Chun, 2012; Khalid, et al., 2013; Marken & Dickinson, 2013; Tsai, 2012; Wilson, 2011). Four research questions were developed from a review of the related literature which describe the essence of the phenomenon that elementary teachers experienced when participating in Edmodo grade level mathematics groups as a community of practice. The research questions developed from the theoretical framework and related literature which are the basis for this research study are:

1. How do teachers describe their lived experience of participation in Edmodo as a community of practice? Teachers who participated in Edmodo have the opportunity to communicate, collaborate, and develop a sense of community with other colleagues through participating in online learning communities, sharing pacing guidelines and instructional strategies, and receiving pacing suggestions (Dobler, 2012; Edmodo, 2012; Scott, 2012).
2. How does the presence of external factors influence elementary teachers' beliefs about participating in an online PLN as a community of practice? One of the benefits that elementary teachers who participated in an online professional learning network as a community of practice realized is that it is not limited by external factors such as geographic location or time (Burns, 2013; Fulton, et al., 2010; Hur & Brush, 2009; Mackey & Evans, 2011). A community

of practice was focused on creating knowledge and enhanced understanding with flexibility to accommodate external factors (Snyder, Wenger, & Briggs, 2003; Wenger, 1997).

3. How do elementary teachers describe their experience of teaching more rigorous mathematics instruction both before and after participating in Edmodo grade level math groups as a community of practice? Teachers who participated in an online professional learning network may benefit from opportunities for enhanced teaching of instructional content, such as elementary mathematics (Miller, 2007; Thompson, Kitchie & Gagnon, 2011; Tsai, Laffey, & Hanuscin, 2010; Wang, Hsu, & Green, 2013). Teachers cited the social constructs of personal satisfaction and sense of community and participating in online learning communities within a community of practice as assisting with their teaching of content (Miller, 2007; Thompson, Kitchie, & Gagnon, 2011; Tsai, et al., 2010; Wang, et al., 2013).

4: How do elementary teachers view the future of their profession based on their experience of participating in Edmodo grade level math groups as a community of practice? There are several functions of a community of practice that related to professional growth and the future of the elementary teaching profession. Defining roles, establishing a forum to share instructional resources, providing professional development opportunities, encouraging socialization, and facilitating camaraderie are all aspects of a community of practice that enhanced professionalism among elementary teachers (Allen, 2003).

Definitions

The following definitions have been provided to establish an understanding of terms and concepts throughout this research study.

1. *Community of Practice* – a group of individuals who participate in common practices, make decisions together, and commit themselves for a duration of time to their own and to the group's well-being and enhancement (Shaffer & Amundsen, 1993).

2. *Edmodo* – an educational social networking site similar to Facebook in which educators can not only provide flipped classroom instruction to students but also participate in online learning communities (Edmodo, 2012).
3. *Legitimate peripheral participation* – individuals will first observe and only complete those activities with minimum risk for error until they become accustomed to the community's structure and develop trust with other participants (Lave & Wenger, 1991).
4. *Professional learning network (PLN)* – technology platforms such as Edmodo, Twitter, Google +, and Classroom 2.0 in which participants can share information and increase their learning (Davis, 2012).
5. *Social learning theory*- theory of learning that encompasses the notions that an individual learns through observation, that his or her mental state must be conducive for learning, and that learning does not necessarily cause a change in an individual's behavior. (Bandura, 1977).
6. *Standards of Learning (SOLs)*- comprehensive curriculum and instructional expectations for K-12 students in the Commonwealth of Virginia (VDOE, 2014).

Summary

Elementary teachers have struggled recently with the teaching of more rigorous Virginia Standards of Learning mathematics content. Many of them have chosen to participate in online professional learning networks as a community of practice to help assist them with utilizing innovative and research-based best teaching practices. Further, their participation in an online professional learning network as a community of practice had the potential to influence teachers' perceived sense of community, sense of learning, and sense of professional growth. There existed a significant amount of research related to why teachers chose to participate in an online

professional learning network (Barrett & Garrett, 2009; Beach, 2012; Bull & Buechler, 1996; Clary & Wandersee, 2009; Hsu & Wang, 2011; Hung, 2002; LaGarde & Whitehead, 2012; Miller, 2007; Saville, 2013; Tsai, et al., 2010; Wang, et al., 2013). There also existed a substantial number of research studies related to communities of practice (Allen, 2003; Brouwer, et al., 2012; Burns, 2013; De Jong, 2012; Elias, 2012; Eller, 2012; Hur & Brush, 2009; I-Chun, 2012; Khalid, Joyes, Ellison, & Karim, 2013; Loucks-Horsely, Hewson, Love, & Stiles, 1998; Marken & Dickinson, 2013; Parsad, Lewis, & Farris, 2001; Snyder, et al., 2003; Wenger, 1997; Wenger, 1998; Wenger, 2000b; Wenger, McDermott, & Snyder, 2002; Tsai, 2012; Tsai, et al., 2010; Wilson, 2011). With regards to elementary teachers' participation in Edmodo as a community of practice, there were few research studies which mentioned its general use and even fewer studies which examined its use as a community of practice (Barrett & Garrett, 2009; Burns, 2013; Chin, 2013; Dobler, 2012; Hammonds, Matherson, Wilson & Wright, 2013; Graham & Ferriter, 2010; Horn, 2012; Lane, 2012; Sanders, 2012; Scott, 2012; Storberg-Walker, 2008; Trust, 2012; Wang, Hsu, & Green, 2013). I did not locate any qualitative, phenomenological research studies that described the shared experiences of how elementary teachers participate in Edmodo grade level mathematics groups as a community of practice. This research study addressed this gap in the current body of literature.

CHAPTER TWO: LITERATURE REVIEW

Overview

The Commonwealth of Virginia's K-12 mathematics Standards of Learning have significantly increased in rigor since 2010. The revised mathematics standards were part of a broad initiative by the Virginia Department of Education (VDOE) to develop higher level mathematical knowledge and ensure that Virginia's public school graduates were adequately prepared for the rigor of college coursework and 21st century career work (VDOE, 2014). The revised mathematics standards reflected increased rigor through both the inclusion of technology enhanced items based on higher critical thinking skills along with traditional multiple choice items and the application of content knowledge. These technology enhanced questions included drag and drop items, fill-in-the-blank items, and hot spot items (VDOE, 2014). In developing more rigorous mathematics standards the VDOE (2014) enlisted the assistance and expertise of not only the College Board but also mathematics specialists, college professors, and public school teachers. Virginia's 2010 revised mathematics standards were similar in rigor and content knowledge to the Common Core State Standards which the majority of states had officially adopted (VDOE, 2014).

In response to a need for 21st century learning and technology integration, a suburban school district in central Virginia introduced Edmodo as its formal blended learning platform during the 2012-2013 school year. Edmodo is an educational social networking site similar to Facebook in which educators can not only provide flipped instruction to students but also participate with colleagues among online learning communities (Edmodo, 2012). In 2012 the district's elementary mathematics department created comprehensive grade level and content specific mathematics groups within Edmodo to include kindergarten through fifth grade. One

reason that the district created these groups was to help better support its elementary teachers through the transition of teaching the more rigorous 2010 Virginia mathematics Standards of Learning. Three elementary mathematics coaches were tasked with providing instructional and content updates to each mathematics grade level group on a weekly, ongoing basis. These updates included providing weekly mathematics curriculum pacing guides, sample lessons, and suggested instructional strategies. Over time elementary teachers began sharing instructional practices and methodologies through these grade level groups. Some elementary teachers fully embraced these groups and created an informal community of practice through frequent posting and shared collaboration within Edmodo.

Theoretical Framework

The theoretical framework of this research study includes two main theories and two secondary theories which encompass much of the related research. The most significant theoretical frameworks of this research study include Lave and Wenger's (1991) community of practice theory and Bandura's social learning theory (1977, 1984) which explain how learning through participation and observational learning takes place between individuals involved in specialized learning communities. Secondary theories which assist with anchoring this manuscript included social constructivism (Bruner, 1966; Piaget, 1971; Vygotsky, 1978) and adult learning theories (Mezirow, 1991, 1995; Knowles, 1984), as both provide understanding on how adults might learn and create knowledge through social interaction within a community of practice.

Social Constructivism

Social constructivism is based upon Vygotsky's sociocultural theory, Jerome Bruner's cognitive learning theory, and Jean Piaget's theory of cognitive development (Bruner, 1966;

Piaget, 1971; Vygotsky, 1978). Vygotsky described learning as a social process among individuals in which social interaction is integral to developing cognition (Vygotsky, 1978). It is based upon socialization and the role of language in constructing one's individual knowledge and understanding (Johnson, 2003). Vygotsky (1997) believed that "every form of education, therefore, unavoidably bears a social character" (p.47). Further, cognitive development is limited to one's zone of proximal development which requires socialization and scaffolding to further develop complex skills and understanding. Collaborative learning and effective communication are two social processes that help further develop this zone and encourage learning (Vygotsky, 1978). Group socialization is critical to developing cognition as individuals construct and transfer knowledge through language-based social interactions (Gultekin, 2006). Language, social interaction, collaboration, and communication form the foundation of knowledge and understanding that are constructed through teachers' participation in an online professional learning network as a community of practice.

Bruner (1966) developed a cognitive learning theory based on learning as an active process constructed from previous knowledge. Learning should occur through active dialogue and participation. Instruction should be spiral in nature and encompass four considerations: a predisposition towards cognition and learning, a structure that is easily retained, an effective sequence of content presented, and an inclusion of rewards and consequences through the learning process (Bruner, 1966).

Like Vygotsky and Bruner, much of Piaget's theory of cognitive development and constructivism is based on the importance of social interaction and discovery of new learning. Children, like adults, learn through constructing knowledge that is personally relevant and meaningful (Slavin, 2005). Piaget (1971) viewed constructivism as providing opportunities for

learners to self-discover and construct their own knowledge through varied experiences. According to Piaget, a constructivist classroom might include hands-on learning opportunities, manipulatives, and collaborative projects and activities. Further, the Internet and online professional learning networks such as Edmodo provide additional opportunities for constructing knowledge and understanding among individuals socially engaged within a Piagetian classroom setting (Piaget, 1971).

Community of Practice Theory

Lave, a social anthropologist, and Wenger, an educational theorist, (1991) created the community of practice theory to explain how significant learning takes place between individuals who are actively involved in specialized learning communities based on common interests and similar experiences. Shaffer and Amundsen (1993) defined a community of practice as:

when a group of people participate in common practices; depend upon each other; make decisions together; identify themselves as part of something larger than the sum of their individual relationships; and commit themselves for the long term to their own, one another' and the group's well-being. (p. 10)

Lave and Wenger (1991) described new learning that occurs within a community of practice as legitimate peripheral participation. Participants will initially observe and complete activities with low risk for error until they develop trust, mutual understanding, and become accustomed to the specific learning community and its structure. Participants within a community of practice will also actively seek out individuals with more experience and specific knowledge to help guide them towards helping improve their instructional repertoire and craft (Keung, 2009; Moore, 2003). In time, newcomers' participation increased to the point where they emerged as full, contributing members of the community of practice and developed personal

ownership of its learning. Further, as participants became experts in their respective field they began increasing their contributions and reaching out more broadly to those with less experience (Fallon & Barnett, 2009; Keung, 2009; Lave & Wenger, 1991; Moore, 2003; Plack, 2006).

Wenger (1998) expanded upon this initial research on communities of practice and incorporated aspects of Bandura's social theory of learning by dividing the concept of learning into four components: community (learning by belonging), practice (learning by doing), identity (learning as becoming), and meaning (learning through experience). Lave (1996) described the concepts of community and practice as learning by belonging and learning by doing through connecting the relationship between community as the teacher and practice as the students. This relationship is similar to an apprenticeship in which the community as a whole shares information and models instructional practices. In turn, the members of the practice engaged in learning transfer which has the potential to be more effective and rigorous than traditional forms of teaching and learning (Lave, 1996).

Wenger (1996) identified three elements of existence and seven principles of learning that take place within a community of practice. The domain consisted of a communal interest and knowledge of content that isolated participants from others not involved. The community consisted of its members which collaborate, communicate, and build sustainable relationships based on mutual interests. Lastly, the practice itself consisted of the participants who developed a shared community of resources developed over time (Bozarth, 2008; Wenger, 1996). These three elements helped unite members within the community of practice and helped develop its sense of purpose and cohesiveness through collaboration and a shared repertoire of knowledge and purpose. The elements also encouraged novice participants to embrace the practice and

gravitate from the fringe of participation towards the center of activities quickly and efficiently (Lave & Wenger, 1991; Wenger, 1998, 2000, 2000b).

Further, one of the essential principles within a community of practice is that learning among participants is inherent in nature and does not occur in isolation (Wenger, 1996; 1997). Socialization is an integral aspect of learning, as it enables learning to become relevant, meaningful, and engaging. Learning changes one's identity and one's relationships with others. It also influences one's participation in social activities and professional contributions to the community of practice. There are also boundaries that exist when learning takes place which are reflected within one's perspectives, experiences, and subtle characteristics. In addition, the learning that occurs within a community of practice balances localized knowledge with global, broader contexts (Wenger, 1997).

An online professional learning network that functions as a community of practice consists of participants with a common interest who use technology and the internet for learning, communication, and collaboration, without regard for specific time, setting, or location (Preece, 2010; Warschauer, 2003). More specifically, it enables teachers to collaborate on lesson planning, pacing, and best instructional practices without spatial and time restrictions. Teachers often learn best from one another in a setting where they can communicate, collaborate, and share rather than from attending professional development conferences or workshops presented by outside consultants (Schmoker, 2005). Training and professional development for teachers should include opportunities for participation and social interaction. Barriers to communication should be eliminated in favor of communication links which enable participants to negotiate and discuss differences (Wenger, 1996). Once these attributes are in place a community of practice

affords the opportunity for its participants to achieve a perception of increased professional growth, a sense of learning and a sense of community.

Adult Learning Theories

Two adult learning theorists, Mezirow (1991, 1995) and Knowles (1984), provided theories on how adults learn best and how adult learning experiences might need to be structured for maximum effectiveness. Elementary teachers participating in an online professional learning network as a community of practice are actively involved in enhancing their learning and professional development. One of the key reasons teachers decide to participate in online professional learning networks is to increase their learning, including the teaching of specific subject matter content and developing a better understanding of innovative instructional strategies (Beach, 2012; Bull & Buechler, 1996; Clary & Wandersee, 2009; Hsu & Wang, 2011; Hung, 2002; LaGarde & Whitehead, 2012; Miller, 2007; Perez, 2012; Thompson, Kitchie, & Gagnon, 2011; Tsai, Laffey & Hanuscin, 2010; Wang, Hsu, & Green, 2013).

Transformative theory of adult learning. Mezirow (1991, 1995) developed the transformative theory of adult learning which explains how adults create meaning of their lived experiences. Mezirow (1991) described the goal of transformative adult learning as assisting adult learners in developing an awareness of their learning experiences to include why they experience certain conditions such as perceiving, thinking, and judging and to create actions reflected upon their thoughts and perceptions. Further, Mezirow (1995) described three components of transformative learning, the centrality of experience, critical reflection, and rational discourse, as being interrelated. The starting point of transformative learning encompasses both the learner's experience and the subject matter to be learned. One's experiences are socially constructed which can be broken down and used as the basis of future

action. Experiences also provide the springboard for critical reflection, one distinguished characteristic of adult learning. Critical reflection involves questioning the integrity of beliefs and assumptions based on experience and often is in response to one's personal awareness of a potential contradiction among cognition, emotion, and actions (Meizrow, 1995). Meizrow (1995) described the third component of transformative learning, rational discourse, as the manner in which actual transformation occurs. Rational discourse is best utilized when one finds it necessary to question the validity, understanding, or truth of what is being asserted or to question the credibility of an assertion (Meizrow, 1995). Experience and critical reflection merge through rational discourse and is the means through which reflection becomes action and experiences are reflected upon.

Four principles of andragogy. Knowles' (1984) four principles of andragogy relate to teachers' participation in online professional learning networks and communities of practice. Learning should be structured to encourage a high degree of adult involvement, it should relate to adult learners' lived experiences, it should be relevant and potentially impact adult learners' lives, and it should be problem-centered. Teachers who participate in an online professional learning network are involved in the planning of their instruction through sharing and collaborating on instruction. They will also typically be most interested in those activities and learning experiences which they view as personally relevant to their students with a high level of impact on their classroom instruction.

Social Learning Theory

Social learning is created through participation and observational learning within one's environment (Bandura, 1977). Bandura (1977) cited three concepts that encompass his social learning theory: people learn through observation, a person's mental state is essential for

learning to take place, and learning does not always constitute a change in behavior. Further, there are characteristics that connect learning within social contexts such as figuring out exactly what others know, appreciating what others know and how it impacts their work, and figuring out how to gain access to other's knowledge (Borgatti & Cross, 2003). In addition, individuals learn based on their social experiences which in turn influence their behavior. Information is developed through social experiences such as communication and collaboration. The responses that follow these initial social experiences lead to response outcomes and self-efficacy (Grusec, 1992).

Teachers involved in a community of practice are often committed to not only their individual learning but also contributing to the learning of other participants through sharing information, collaboration, and frequent communication. The community of practice cannot sustain itself without ongoing, meaningful social interaction among participants (Lave & Wenger, 1991). The social learning that takes place within the community of practice is often informal in nature which lends itself to a flexible, evolving structure and social interactions that encourage ongoing discourse and reflective thinking (Allen, 2003). These social interactions, along with subsequent internal benefits such as increased pride and self-efficacy, are examples of intrinsic reinforcement and the importance of a person's mental state as it relates to learning (Bandura, 1984).

Related Literature

This study merges an examination of professional learning networks, communities of practice, and web-based social science software in developing a description of how elementary teachers use Edmodo as a community of practice. The review of literature focuses on the reasons elementary teachers chose to participate in professional learning networks to develop a

sense of community and professional learning. It also addresses how communities of practice are used to develop a perception of learning and sense of learning. Lastly, an understanding of how web-based social science software, such as Edmodo, is used to develop student engagement, collaboration, and professional development for teachers is presented.

Professional Learning Networks

Online professional learning networks such as Edmodo, Google +, Classroom 2.0, Twitter and Ning have been established by educators for two primary reasons: to share related information and increase personal learning for the purpose of better educating students. Technology enablers such as a continual flow of information, instantaneous access, communication, and ease of use assist users with participation and potentially increase their positive perception of professional learning networks (Davis, 2012). LaGarde and Whitehead (2012) cited four considerations many educators embrace when deciding to participate in an online professional learning network: consumption, connection, creation, and contribution. Consumption of new knowledge and instructional strategies from existing participants, establishing new professional connections, creating a useful strategy for oneself based upon someone else's original idea, and contributing to someone else's learning and professional growth are considerations that influence educators to participate in an online professional learning network (LaGarde & Whitehead, 2012). In many instances, professional learning networks have taken existing professional learning communities (PLCs) to the next level by creating opportunities for communities of educators with similar interests to collaborate without spatial, location, or time restrictions (Cordell, et al., 2012). Developing an electronic portfolio as a repository for online resources was another consideration (Barrett & Garrett, 2009; Gavigan, 2012). Teachers might then utilize these online portfolios for collaborating and sharing lesson

plans, pacing guides and instructional strategies. Further, establishing an online presence through tweets, blogs, and posting online content and instructional artifacts helps participants to build their own personalized learning network among similar participants which can enhance their professional growth (Utecht, 2010).

Reasons for participation. There are several reasons teachers choose to participate in an online professional learning network. Active involvement encourages participants to learn through socialization, visualization, and real-life problem solving. Participants have frequently indicated a positive impact with regards to their level of communication and sustained collaboration with colleagues. Saville (2013) cited the areas in which participants were most positively impacted as a broadening of the scope of communication, a convenience of connecting with other colleagues, and a means of professional dialogue between colleagues. Widening the scope of communication includes allowing for multiple perspectives from various sources beyond a participant's actual geographic location. Participants have expressed this impact as being most beneficial as a means of developing a comprehensive viewpoint (Saville, 2013). When the scope of communication broadens it allows participants to connect with colleagues within a larger organization or school district who might typically remain isolated.

In addition, the convenience of connecting with others provides extensive flexibility as to how frequently and at what times professional learning networks and social media are utilized (Saville, 2013). Participants remain in control when they have the flexibility to determine at what times and how often they connect and collaborate with members of their professional learning network. These connections benefit participants both personally and professionally, as they enable individuals to receive instantaneous information from a myriad of colleagues among a global scale at times when they are most desired and needed. They also enable individuals a

plethora of options for consideration such as recruiting new personnel to establishing a network of professional connections (Saville, 2013).

Further, as a means of professional dialogue among colleagues their participation within professional learning networks also leads towards a heightened positive culture as they dialogue with others whom they might not otherwise. As communication increases and improves, a positive shift in organizational culture is more likely to occur (Saville, 2013). Participation within a professional learning network also allows for focused communication and collaboration through establishing a particular context of discussion based on certain, relevant issues and factors. Focused, efficient communication allows participants to filter and eliminate irrelevant content, thus enhancing professional connections (Saville, 2013). In addition, a professional learning network allows its participants to manage resources and other participants in such a manner as to provide a quick and efficient method to receive information. This process is timely at the onset as communication begins and relationships are established but a worthwhile time-saving measure over the course of time. Further, being able to connect and communicate with other similar participants without time and geographical constraints is often a time saving measure and offers the convenience of global connectedness (Saville, 2013).

According to the social learning theory, individuals learn through participation within a social setting where common interests are shared (Bandura, 1977). Having a passion about a particular area of interest and the ability to share that passion with others instantaneously helps bound participants together in a professional learning network (LaGarde & Whitehead, 2012). Having immediate and continuous access to information, having the ability to pose questions and collaborate with colleagues, and being able to communicate future virtual events such as webinars are several reasons why school librarians, some of the first educators to do so, chose to

participate in a professional learning network (LaGarde & Whitehead, 2012; Perez, 2012).

Participation within an online professional learning network can also help develop and encourage authentic learning practices (Hung, 2002).

Many teachers also participate in online professional learning networks as a means to leverage online and digital resources. Teachers help their students to facilitate their technology skills and develop digital age literacy through identifying questions, synthesizing information, problem solving, and communicating (Hsu & Wang, 2011). Beach (2012) offered three suggestions that teachers should consider to enhance their understanding and use of online resources: teachers should consider frequent use of online resources, teachers should consistently communicate with other teachers who use online resources to gather ongoing ideas and teachers should collaborate with their colleagues and administrators to create a school-wide, comprehensive technology plan for the daily use of online resources to enhance classroom instruction and increase student engagement.

Beyond socialization, problem solving, and leveraging online and digital resources, many teachers participate in professional learning networks to prevent professional fatigue and stagnation. Teachers' interactions within their professional learning network often stimulate creativity and reenergize their professional interactions with colleagues (Kaldenberg, 2012). Further, many teachers may find it appealing and exciting that their participation within a professional learning network influences their own building administrators to embrace digital-age literacy and create their own professional learning network through blogging and Twitter.

Teaching content. Active participation in an online professional learning network also affords teachers the opportunity to enhance their teaching of instructional content (Miller, 2007; Thompson, Kitchie, & Gagnon, 2011; Tsai, et al., 2010; Wang, et al., 2013). Tsai, et al., (2010)

examined 49 elementary and middle school teachers who participated in the NETwork professional learning network to determine how they perceived their participation helped improve their overall teaching of science content. They also determined that evidence of several social constructs such as personal satisfaction, sense of community, learning satisfaction, and technology acceptance also had a positive impact on the participants and related to their teaching of science (Tsai, et al., 2010). Miller (2007) examined teachers' experiences of teaching math concepts while participating in a professional learning network and described their thoughts regarding sharing beliefs and strategies as well as their perceptions of the importance of participation in online discussions. Wang, et al., (2013) provided several suggested strategies for teachers' use of professional learning networks in teaching science content. They suggested reviewing teacher resources such as the Edmodo Teacher Rollout Resources (<http://help.edmodo.com/teacher-rollout-resources>) for effective implementation, organizing digital materials ahead of time, beginning with an activity relatively small in scope, using a rubric to remind students' of digital instruction expectations, and submitting work through multiple technological formats. Further, they suggest using a Promethean or SMART board to demonstrate how technology can be leveraged (Wang, et al., 2013).

Professional development. Participation in an online professional learning network also contributes to teachers' professional development, sense of professional growth, and desire to meet their educational and professional goals (Thompson, et al., 2011). For many teachers their participation in an online professional learning network meets their needs for personalized professional development. There are five principles of effective professional development that relate to teachers' participation in an online professional learning network. Bull and Buechler (1996) identified these principles as establishing professional development that is school based,

that uses coaching and mentoring by colleagues, that is collaborative in nature, that is job-embedded and utilized on a daily basis, and that focuses on enhanced student achievement. Online professional learning networks such as Edmodo and others are school based, have active participants who serve as coaches and mentors, and occur within the confines of normal job-embedded activities such as collaborating on instructional resources and planning for pacing and instruction (Bull & Buechler, 1996).

Often, teachers who participate in an online environment increase their knowledge of content, which in turn, reveals a personal perception that participation in a professional learning network allows them to better meet the diverse instructional needs of their students (Clary & Wandersee, 2009). They gain confidence in their personal knowledge achieved through collaboration and participation with others who may be considered master teachers and experts in their prospective fields. In addition, the opportunity to collaborate and establish a support network through sharing their own personal writing samples and those of their students is also a form of professional development that can be established through an online professional learning network (Dawson, Robinson, Hanson, VanRiper, and Ponzio, 2013).

Communities of Practice

A community of practice is a social structure grounded in a specific purpose whose focus is on creating knowledge and understanding (Snyder, et al., 2003). It is not a group of individuals who share a common hobby or interest or who necessarily reside in close geographic proximity with one another. Further, a community of practice is also not designed to complete a particular task or requirement through teamwork (Wenger, 1997; Bozarth, 2008). Often, the community of practice begins, evolves, and terminates depending on the timing, flow, and engagement level of its participants. Professional learning networks that function as

communities of practice also allow for learning opportunities that are not limited by participants' geographic location (Burns, 2013; Fulton, et al., 2010; Hur & Brush, 2009; Mackey & Evans, 2011). Communities of practice are distributed among a wide span of social groups and occur so frequently that most everyone is a member of more than one community of practice even if they do not blatantly realize it (Wenger, 1998).

Teachers who participate in online professional learning networks as a collective group for the sole purpose of improving the quality of their work as professionals through collaboration and shared, communal practices function as a community of practice (Wenger, 1997). Typically, every participant is highly committed to the joint enterprise and maintains a collective understanding of the community of practice's purpose and holds one another accountable for its success (Wenger, 2000b). Participants are often self-selected or encouraged to join the community of practice because they desire pertinent and relevant information and knowledge that only other members may have. Another consideration may be that the members themselves have a desire to share their knowledge and expertise with similar participants (Wenger, 2000b).

Administrators and leaders within an organization should recognize that communities of practice exist and therefore make a concerted effort to work within their confines and realm of responsibility to allow them to remain self-organized (Wenger, 1998). Attempting to control, manage, or redesign an existing community of practice can be detrimental to employee morale and a deterrent towards self-directed teacher professional development. Administrators should maneuver around the communities of practice, remain supportive of them, and allow participants an appropriate amount of time, space, and freedom in which to collaborate and learn (Wenger, 1998).

The knowledge that is created within the community of practice is often implicit and tacit, beyond that which can be directly expressed by expert practitioners (Wenger, 1997). Examples of tacit knowledge includes “the subtle cues, the untold rules of thumb, the recognizable intuitions, the specific perceptions, the well-tuned sensitivities, the embodied understandings, the underlying assumptions, the shared worldviews, which may never be articulated, though they are unmistakable signs of membership in CoPs” (Wenger, 1997, p. 38). This knowledge may often be used in conjunction with other types used to further enhance the learning and professional growth of participants.

Research studies indicate that teachers within a community of practice have a keen perception on student learning, sense of community, and sense of professional growth which are factors that encourage them to actively participate and collaborate to improve not only their own work but that of their fellow participants (Brouwer, et al., 2012; De Jong, 2012; Eller, 2012; Hur & Brush, 2009; I-Chun, 2012; Khalid, Joyes, Ellison, & Karim, 2013; Lane, 2012; Marken & Dickinson, 2013; Tsai, 2012; Tsai, et al., 2010). Participants in a community of practice can use their unique work related experiences to further develop and enhance their organization. Allowing a design for evolution, promoting open dialogue and communication between internal and external factions, and allowing various levels and degrees of participation are strategies that a community of practice should employ to help the organization maximize its human resource potential (Wenger, McDermott, & Snyder, 2002). Additionally, participants should consider developing a variety of both public and private events for collaboration and combining a sense of familiarity and excitement to establish a rhythm within the community of practice (Wenger, et al., 2002).

Perception on learning. The learning that takes place within a community of practice can be defined as collective learning that occurs among the community's participants, where each learns through the collective efforts of the community of practice (Garavan & McCarthy, 2008; Parsad, et al., 2001). Teachers within a community of practice often maintain a perception that their active participation and continual collaborative inquiry will enhance their own personal learning and that of their students (Nelson, et al., 2010; Parsad, et al., 2001). Parsad, et al. (2001) identified collaborative activities among teachers which positively influenced their perceived sense of learning. Approximately 69% of teachers surveyed identified collaboration with other teachers and 62% of teachers cited networking with others not assigned to their school as being two such collaborative activities (Parsad, et al., 2001). Teachers who engage in a community of practice have the potential to enhance their perception on learning through collaborating with other teachers within their own school and those at different schools either within the same district or elsewhere, without geographic or time limitations. An examination of high school teachers who participated in a community of practice to collaborate on blending instructional technology with subject matter content revealed that they perceive such participation further enhanced their instructional practices (Wilson, 2011).

Teachers and educational leaders who participate in an online professional learning network as a community of practice use instructional technology and social media, such as Twitter and Edmodo, to transform learning experiences for their students through increased personal learning, professional practice, and increased collaboration (Elias, 2012; Eller, 2012). Participation in a community of practice often lends itself to effective professional development opportunities. Learning within the context of job-embedded activities and sharing with other participants through professional learning networks and social networking sites expands potential

professional development into virtual communities beyond real-time and face to face interactions (Elias, 2012). Using social networking sites such as Twitter or Edmodo as a medium can assist teachers with expanding the community of practice and increasing both social and context knowledge in a manner that most school districts can potentially financially afford and easily establish and maintain (Elias, 2012). The possibilities for these social networking sites are nearly endless as participants have unlimited opportunities to collaborate with each other for professional growth in a manner that is virtually free and continuously accessible for all (Rutherford, 2010).

Sense of community. Enhancing a sense of community through collaboration and communication is another factor regarding the development and sustainment of communities of practice. It is imperative that the community of practice establish a clear vision and focus and actively involve participants in developing its purpose (Mageau, 2012). A collaborative effort among the participants further enhances sense of community since all would actively contribute regarding its inception. Further, the participants would also have a personal interest in ensuring that the community of practice fulfills its initial purpose. The sharing and exchanging of resources such as documents, lesson plans, pacing guides, videos, power points, spreadsheets, and instructional strategies help to create a sense of community by encouraging collaboration and communication (Allen, 2003). Teachers who actively participate in a professional learning network also frequently relate individual participant satisfaction to a perceived sense of community and sense of learning (I-Chun, 2012).

Brouwer, et al., (2012) examined teacher teams and Allen (2003) examined corporate teams operating as communities of practice to determine which aspects of community helped to enhance their working relationship. Further, Cox (2004) examined communities of practice

within higher education faculty learning communities as a means of enhancing sense of community to both increase individual professional growth and the use of innovative instructional practices. These types of communities of practice not only support participants' sense of community but also their sense of professional growth by providing them with an avenue in which to exchange ideas and information beyond that which is provided through traditionally structured corporate training workshops.

Participants recognize the importance of sharing both work experiences and resources as a benefit of the community of practice. Such benefits include sharing personal work experiences through conversations in which participants explain the manner they complete a given task or instructional activity or offering suggestions on how others might implement a similar type of activity or lesson plan (Allen, 2003). In turn, learning occurs through these shared, lived experiences in which participants transfer best practices and continuously improve existing ones. Sense of community develops as participants rely on one another through continuous collaborative efforts and discourse. However, if teachers believe they are supported through a strong sense of community within their own school they will be less inclined to seek out opportunities to connect with teachers at other school districts or search for additional professional development opportunities (Moore, 2003).

Some types of collaborative activities within a community of practice such as teacher networks, action research projects, and rational discourse groups have been considered by educational organizations such as the National Board of Professional Teaching Standards (1991) as mechanisms for professional development and school improvement. Interacting and learning from one another through networks, participating in action research on a mutually beneficial topic of interest, and communicating through rational discussion has the potential to enhance

participants' sense of community through the personal satisfaction that is derived through ongoing collaboration with other participants (Moore, 2003; Tsai, 2012).

Similarly, pre-service and beginning teachers also view the social constructs of sense of community, ease of use, and effectiveness as important when examining a specific online professional learning network as a community of practice (Tsai, 2012). Participating in a community of practice with more experienced teachers becomes even more practical for such individuals as they lack both experience and a large repertoire of instructional strategies and resources in which to utilize. Making connections with experienced teachers that are applicable to their classroom over time can also help them grow as professionals while decreasing their sense of isolation (Moore, 2003). Gathering from others while they learn and develop their craft affords them an opportunity to increase their involvement in the community of practice over time as they become more experienced and comfortable (Tsai, 2012; Wenger, 2000b).

Sense of professional growth. Professional growth in terms of enhancing retention rates, engagement in work, and professional motivation are additional factors regarding communities of practice. Participants have noted active participation and effort within the community of practice as having a positive influence on enhanced retention, engagement, and motivation, all factors which relate to an increased sense of professional growth (Marken & Dickinson, 2013; Allen, 2003). Further, participation in a community of practice benefits its participants through an improvement in their individual work performance, an increase in their personal motivation to complete their work, a desire to undertake more extensive or challenging work responsibilities, and an increase in sense of professional growth (Allen, 2003).

Allen (2003) identified several functions of a community of practice that relate to individual performance and sense of professional growth. A community of practice assists

participants with defining their role within the community of practice and their work responsibilities, establishes a forum for participants to share instructional resources and their individual work, and provides a means of both formal and informal professional development (Allen, 2003). In addition, it encourages socialization among participants, provides opportunities for collaboration on work-related projects, establishes a forum for members to refine school district processes, and facilitates camaraderie as it relates to working together for the betterment of students (Allen, 2003).

Teachers also acknowledge that often participating among a community of practice can be more beneficial in terms of professional growth and development than participating in structured trainings or workshops (Khalid, et al, 2013). Loucks-Horsely, Hewson, Love, and Stiles (1998) developed seven principles of effective professional development that are applicable to teachers who participate in a community of practice. The professional development should support effective instruction and student learning, it should provide an avenue for teachers to extend their instructional knowledge, it should act as a model for effective teaching strategies, it should develop and support a learning community, it should encourage teachers to act as leaders, it should help make connections to other aspects of professional development and learning, and it should promote a model of continuous improvement.

Web-Based Social Science Software

There exists a multitude of web-based social science software programs which are readily available and accessible for educators, used as a community of practice to enhance student collaboration, student engagement, collaboration among teachers, and professional development. Some of the more prevalent programs include Twitter, Classroom 2.0, Google +, LearnCentral, and Edmodo (Kupler, 2011). Twitter enables educators to pose a question regarding a particular

topic and receive a list of resources and related websites posted from followers. Using the hashtag #edchat allows Twitter users to receive potential information and content from thousands of fellow educators, despite not having a substantial following on Twitter (Whitby, 2010). Classroom 2.0, founded by Hargadon (2010), affords educators with a means to develop their own personal learning network through the use of Web 2.0 technologies in the classroom. Google +, like other web-based social science software, provides participants with a platform in which to collaborate and share. One significant advantage that Google + maintains is its ability to simultaneously link users with multiple Google applications to include Google Calendar and Google Chrome (Anderson & Still, 2011). Edmodo, with a platform that looks similar to Facebook, is an online professional learning network for educators in which its participants have the option of creating their own personalized professional learning network by choosing to participate in up to 12 different online communities, most of which are subject or content specific (Dobler, 2012; Edmodo, 2012).

Student engagement. Student engagement is an essential attribute of learning. Social media to include Classroom 2.0, Edmodo, Twitter, and Google + encourage active participation which leads to increased student engagement (Careless, 2012). It also provides indirect supports towards learning through providing an outlet for emotional stress, validating student work, and providing a social network for school-related activities (Greenhow, 2011). Each of these has implications for learning and provides a reason for students to remain engaged within the online network. The instantaneous nature of social media often provides students with quick feedback and a sense of community which enhances their level of student engagement.

Twitter promotes student engagement by providing a platform for shy students to communicate and express their thoughts in a safe and non-threatening environment (Purcell,

2012; Morgan, H., 2014). Because their work is published through Twitter, it encourages students to closely examine their writing and become more engaged (Morgan, 2014). Through developing intrinsic motivation and increased engagement Twitter also improve students' literacy skills and digital literacy. The 140 character limitation of Twitter also promotes student engagement as it requires students to become focused regarding clarity of thought (Morgan, 2014).

Edmodo, as a blended learning platform, provides endless “possibilities for listening, watching, evaluating, reflecting, thinking, collaborating, connecting, personalizing, planning, and finding a voice” (Scott, 2012, p. 54). It enables students to become personally engaged with not only their teachers but also with fellow students and provides opportunities for collaboration and development of 21st century skill sets. Through helping make learning personal and continuously accessible research suggests that Edmodo could potentially increase student engagement by offering a student centered digital learning ecosystem (Horn, 2012).

Student collaboration. Google + affords collaboration among students through promoting communication and planning related to group projects. The hangout feature of Google + provides a virtual location for students to create and brainstorm while waiting for team members to communicate and comment on projects and assignments (Kiel, Montenery, Perry, et al., 2013). Time is not wasted waiting for students to post, thus allowing for a more optimal collaborative online environment. Further, one area of student collaboration in which Google + has been particularly beneficial is writing. Emerging writers who share and collaborate with peers often become more engaged and improve by exchanging thoughts and editing one another's written work (Zheng, Lawrence, Warschauer, & Lin, 2014).

Encouraging and enhancing student collaboration is a key rationale for teachers to utilize Edmodo. Providing a safe and secure online environment where students can collaborate on projects and share information helps to build upon their learning and encourage positive relationships (Horn, 2012; Richardson, 2012). Group work, as structured through Edmodo, is also beneficial to the development of teams among students in which they assist each other and share new ideas (Chin, 2013). Students who work individually, with partners, or within a small group to complete an online collaborative project, such as a brochure and a video presentation are often found to leave the experience with an increased sense of engagement and motivation (Careless, 2012).

Collaboration among teachers. Google + promotes collaboration among teachers through its platform of user-created circles used to simultaneously send information and messages to individual users as well as multiple groups. Instructional content is saved automatically and can be edited by numerous participants. Information shared can also be streamlined by specific subjects and circle identification, thus promoting collaboration by interest as a potential time saving measure (Anderson & Still, 2011).

Learn Central provides the opportunity for teachers to collaborate both synchronously and asynchronously. Teachers can collaborate and connect with others in real time as well as review postings and material on their own time schedule (Hargadon, 2010). With its unique categorization system, Learn Central also provides teachers with the ability to seek others with common interests through searching by particular topics, grade levels, content area, or geographic region (Hargadon, 2010). Further, Learn Central's repository of portfolios allows teachers to store content such as lesson plans, videos, and documents and share those items

through a leveled system of sharing (Hargadon, 2010). Learn Central, with its combined features of educational networking, promotes an online environment for enhanced teacher collaboration.

Twitter has the potential to enhance social presence, support learning, and develop collaborative relationships among teachers (Dunlap & Lowenthal, 2009a; Lord & Lomicka, 2012). Teachers can collaborate through Twitter in a variety of means. Its regular use establishes collaboration which may evolve into a community of practice (Lomicka & Lord, 2012). Teachers who regularly participate in Twitter groups and chats experience a perceived sense of community and reduced isolationism (Wright, 2010). Further, tweeting during professional conferences using a specific hashtag will allow all tweets, including conference handouts and presentations, to be compiled and accessed for later use. Participants can communicate in real life and collaborate regarding their knowledge and specific expertise (Power, 2015). One potential downside of Twitter usage is its 140 character limit among postings; however, participants often readily adapt to this limitation and use it to craft postings which are succinct and focused (Power, 2015).

Teachers utilize Edmodo as a means to collaborate with each other in planning projects and sharing instructional materials (Boksz, 2014; Hammonds, Matherson, Wilson & Wright, 2013). Collaboration within Edmodo can potentially occur with relative ease as participants join one another's group via an online code and are able to access content and create online postings (Edmodo, 2012). Collaboration among participants has the potential to occur frequently, without regard for real time or geographic location (Dobler, 2012; Edmodo, 2012). Instructional materials and online resources such as power points, video clips, lesson strategies, pacing calendars, and additional artifacts are shared through the Edmodo library which contains free of charge unlimited storage capability. Participants may also engage in webinars through Edmodo

which discuss a number of relevant instructional topics. These webinars have the possibility to further enhance participants' sense of collaboration as they learn from others through viewing interactive presentations, asking relevant questions, and contributing to discussions (Dobler, 2012).

Professional development for teachers. Classroom 2.0 affords educators with the opportunity for professional development without geography and time constraints. Educators can participate in continuous learning, professional development offerings can continuously adapt as regulations and requirements change, and ultimately, they can more effectively meet the diverse educational needs of their students (Hargadon, 2010). An added bonus that Classroom 2.0 and other web-based social science software programs offer is decreased costs associated with professional development. Conducting professional development workshops online allows for scarce financial resources to be spent on more specific, meaningful training opportunities that are of potential greater benefit to students, since expensive overhead costs associated with traditional professional development such as travel, location rental fees, technology usage, and hospitality charges are non-existent (Hargadon, 2010).

Learn Central affords teachers with free professional development regarding best practices among a variety of course content, varying from math 2.0, problem based learning, digital storytelling, and creating common assessments (Lightle, 2010). Its professional development offerings often occur in virtual learning rooms during real-time activities. Membership in Learn Central includes a free virtual meeting room for three participants where they can connect, collaborate, and share instructional content and best practices (Anonymous, 2009). Learn Central, upon its inception, was considered by many educators as a leading social

network site through its online professional development events, user-created instructional resources, and topic-based forums (Gonzales & Vodicka, 2010).

A growing number of educators use Twitter as a means for self-directed professional development. Visser, Evering, & Barrett (2014) discovered that educators use Twitter as a means of learning through collaboration but also the personal benefit derived from contributing to the collective body of knowledge centered on best instructional practices. Educators, such as school librarians, who have begun to use Twitter within a community of practice for professional development have discovered that promoting its usage within traditional settings such as workshops and conferences is helpful. The experience they gain through tweeting during workshop sessions provides them with more confidence and knowledge of its use, which in turn helps develop their professional development through collaboration and participation (Dalton, 2013).

Edmodo can be utilized as an effective professional development tool for teachers through sharing and collaborating on content and instructional strategies, as well as a means of increasing student engagement, student motivation, creativity and sense of community (Lane, 2012; Sanders, 2012; Wendt, 2013). It offers a repository of unlimited personal storage through a personal library for documents, shared links, and instructional videos, all of which enhance participants' professional development (Barrett & Garrett, 2009; Trust, 2012). Furthermore, Edmodo as an online professional learning network provides unlimited access to multiple learning communities on various subjects and specialized interests. Participation in these groups allows teachers to collaborate, hold professional conversations, and share instructional resources through a shared library (Hammonds, et al, 2013). Enhanced sense of professional development, increased participant engagement, enhanced personal motivation, and increased sense of

community are all factors which lead to participants utilizing Edmodo's as an online platform for developing a community of practice. According to Storberg-Walker (2008) participants who use Edmodo as a community of practice consistently develop enhanced learning, create collaborative relationships, and establish a sense of community. The community of practice in turn assists its participants with becoming more effective practitioners through ongoing professional development achieved due to active collaboration and sharing with other teachers whose interests and needs are similar (Hammonds, et al, 2013). Research suggests that Edmodo's use as a community of practice might also increase teachers' self-efficacy towards technology and encourage more frequent use of instructional technology (Hammonds, et al, 2013). Such actions might further enhance teachers' experience as participants within an online professional learning network as a community of practice. Further, teachers who frequently use technology and have a strong personal belief in their ability to use it have the potential to increase their professional development. Once teachers have acquired professional development the potential also exists for them to collaborate and share their knowledge with their colleagues and other participants throughout the community of practice, thus benefitting the education profession as a whole.

Summary

An examination of the related literature revealed a substantial amount of research on the reasons teachers choose to participate in an online professional learning network (Barrett & Garrett, 2009; Beach, 2012; Bull & Buechler, 1996; Clary & Wandersee, 2009; Cordell, Rogers, & Parker, 2012; Davis, 2012; Dawson, et al., 2013; Gavigan, 2012; Hsu & Wang, 2011; Hung, 2002; LaGarde & Whitehead, 2012; Miller, 2007; Perez, 2012; Saville, 2013; Thompson, Kitchie, & Gagnon, 2011; Tsai, Laffey, & Hanuscin, 2010; Utecht, 2010; Wang, Hsu, & Green, 2013). Regarding how teachers used professional learning networks as communities of practice

a vast percentage of the research has been focused on enhanced sense of community, sense of learning, and sense of professional growth (Allen, 2003; Brouwer, et al., 2012; Cox, 2004; Elias, 2012; Eller, 2012; Garavan & McCarthy, 2008; I-Chun, 2012; Khalid, et al., 2013; Loucks-Horsely, et al., 2012; Marken & Dickinson, 2013; Nelson, et al., 2010; Parsad, et al., 2001; Rutherford, 2010; Tsai, 2012; Wenger, 2000b; Wilson, 2011). Further, there existed several studies and related literature that examined Edmodo and teachers' involvement with the instrument (Barrett & Garrett, 2009; Boksz, 2014; Burns, 2013; Careless, 2012; Chin, 2013; Dobler, 2012; Edmodo, 2012; Greenhow, 2011; Hammonds, et al., 2013; Horn, 2012; Lane, 2012; Richardson, 2012; Sanders, 2012; Scott, 2012; Trust, 2012; Wang, et al., 2013; Wendt, 2013). An examination of all the related literature revealed that there was an absence of phenomenological research regarding the shared experiences' of elementary teachers who participate in Edmodo grade level mathematics groups as a community of practice. This research study satisfied a gap within the body of literature on this topic. It also provided a detailed understanding of how teachers might use a social networking site, such as Edmodo, as a community of practice. Such understanding might encourage other teachers to create and participate in additional communities of practice, which may lead to an enhancement of the profession and increased use of web-based social science software and social media for teachers' professional growth.

CHAPTER THREE: METHODS

Overview

The purpose of this phenomenology research study was to describe the shared experience of ten elementary teachers and one elementary math coach who participated in an online PLN as a community of practice. This research study gave the participants an opportunity to describe their experience through a textural description (Creswell, 2013; Moustakas, 1994). This research was of importance to the profession as elementary teachers have recently struggled with teaching more rigorous mathematics content (VDOE, 2014). Participating in grade level specific mathematics groups within Edmodo, an online professional learning network, as a community of practice allowed teachers an opportunity to share and collaborate on instructional strategies (Boksz, 2014; Garavan & McCarthy, 2008; Hammonds, et al., 2013; Nelson, et al., 2010; Parsad, Lewis, & Farris, 2001). Further, participation in the community of practice provided teachers with an opportunity to develop an enhanced sense of professional growth through collaboration with colleagues (Allen, 2003; Marken & Dickinson, 2013).

This chapter included a description of the phenomenological research design and an explanation of why it was suitable. I provided a description of the technique used to select the research study's participants as well as a description of how they were best suited as participants. Further, I explained my personal role in this study as well as how the qualitative data was collected and analyzed. I also provided an explanation of the techniques used to ensure the trustworthiness of the research.

Design

Qualitative research examines research questions that seek to describe and explain meaning and explore how a particular experience or phenomenon occurs (Creswell, 2013;

Merriam, 1988). It also seeks to explain an experience through creating a rich description based on both the perception of the participants and the researcher's own experiences (Merriam, 1988). Transcendental phenomenology is based on the philosophy of subjective openness which examines the collective experiences of a particular phenomenon and seeks understanding by examining how the perception of its participants creates a reality (Creswell, 2013; Husserl, 1931; Moustakas, 1994). Husserl (1931, 1970) believed that understanding intuition and the essence of a phenomenon took precedence over scientific knowledge (Moustakas, 1994). Husserl (1931, 1970) developed the concept of epoche in which suppositions and doubt are eliminated by creating an inner understanding of the experience, its essence.

Research Questions

The research questions generated from the theoretical framework and related literature were:

RQ 1: How do teachers describe their lived experience of participation in Edmodo as a community of practice?

RQ 2: How does the presence of external factors influence elementary teachers' beliefs about participating in an online PLN as a community of practice?

RQ 3: How do elementary teachers describe their experience of teaching more rigorous mathematics instruction both before and after participating in Edmodo grade level math groups as a community of practice?

RQ 4: How do elementary teachers view the future of their profession based on their experience of participating in Edmodo grade level math groups as a community of practice?

Setting

The site for this research study was a public school district located in a county within Virginia. It is a large, suburban school district with 64 comprehensive schools, approximately 59,000 students and 7,700 teachers. The demographics of the county include a population of approximately 316,236 people comprising of a median household income of \$71,321 (Chesterfield County, 2012). Further, the population makeup consists of 215,954 Caucasians, 69,412 African-Americans, 1,210 Native Americans, 10,495 Asians, 8,363 of multiple races, and 22,864 Hispanics (Chesterfield County, 2012). The county's minority population grew by 66% since 2010, making up 31.7% of the total population (Chesterfield County, 2012).

The district has 38 elementary schools, with each one using Edmodo as its online PLN and each one with elementary teachers who participate in his or her grade level's math Edmodo group. The school district has used Edmodo district-wide for 4 years, with some elementary teachers being extensively involved within their assigned grade level math Edmodo group. The school district utilized Edmodo both as a blended learning platform to facilitate student engagement and 21st century skills and also as a top-down informal community of practice. Elementary teachers were instructed to join their grade level mathematics group and participate within it as a means of receiving pacing guidelines and instructional support. The degree to which teachers participated within these groups varied from school site, depending on school administrator expectations and instructional needs. Elementary teachers who were frequent and active Edmodo participants from various elementary schools and elementary instructional math coaches from the district's central office were asked to participate in this research study.

Participants

Phenomenological research is based upon describing the essence of a phenomenon through the experience and voice of its participants (Creswell, 2013; Moustakas, 1994;

Bloomberg & Volpe, 2012). The participants for this research study were chosen through the use of a purposeful, criterion sampling strategy based on the frequency of their postings in their assigned Edmodo grade level math group (Creswell, 2013; Polkinghorne, 1989). Participants who posted in their Edmodo grade level math group were considered active participants within the community of practice. The participants were elementary teachers and an elementary math coach who teaches and has both extensive knowledge and experience with the district's elementary math curriculum. Participants also had taught a minimum of 3 years and had completed all prior Edmodo training modules so that they were adequately familiar with both the elementary mathematics curriculum and Edmodo as an online professional learning network.

The required Edmodo training modules afforded all teachers the opportunity to complete a series of digital tasks in which they would acquire and apply knowledge. During some of the modules teachers were asked to watch a video or read an attachment then carry out an application of that knowledge. After completion of assigned tasks within Edmodo teachers would submit evidence of such digital activities to either their school-based administrators or in some instances, central office-based technology integrators (B. Sepelyak, personal communication, March 23, 2017).

A list of possible participants based on their frequency of postings and overall activity within their Edmodo grade level math group was provided by an elementary math coach. From the recommended list a total of 10 elementary teachers of various grade levels and one elementary math coach were asked to participate via email, all of whom had experienced the phenomenon of participating in an online professional learning network as a community of practice (Creswell, 2013; Polkinghorne, 1989).

I contacted the district's Department of Research and Planning to seek permission to conduct the research study. Prior approval by the Institutional Review Board (IRB) was solicited to ensure that risk to participants was minimal and complied with ethical research principles. Participants were asked to create a pseudonym to ensure their confidentiality (Moustakas, 1994). Participation in this study was voluntary and participants had the right to remove themselves from the research study at any time.

Procedures

The procedures for this phenomenological research study were based upon the research of Creswell (2013), Moustakas (1994), and Polkinghorne (1989) in which the shared experiences of the phenomenon that elementary teachers experienced through participation in an online professional learning network as a community of practice were analyzed and described to develop a thorough understanding. Permission and approval for this study was sought through both the Institutional Review Board (IRB) and the district's Department of Research and Planning. Once approval was finalized I asked elementary teachers and math coaches to participate in the study based on their level of teaching experience and activity within the district's grade level math Edmodo groups. Participants must have taught a minimum of 3 years, have completed all required Edmodo training modules, and participated within his or her grade level mathematics group in order to participate in the research study. Once potential participants were identified they were asked to sign an informed consent form which explained the purpose and methodology for the study and stated they may withdraw from participation at any time. A description of the phenomenon was generated through semi-structured interviews, a focus group interview and an examination of online artifacts. I asked three elementary teachers who were familiar with using Edmodo as a community of practice to review the interview questions and

then pilot the interview with a small sample of participants outside of the research study to ensure appropriate wording of the questions (Creswell, 2014). I was forthcoming regarding my own personal experiences and biases as well as included my curriculum vitae to potentially eliminate any research bias (Creswell, 2014).

The Researcher's Role

Presently, I serve as an elementary principal in a small, rural school district in Virginia, with 22 years of experience as a public school educator. I am in my third year as an elementary principal. Prior to becoming an elementary principal I served as an assistant principal for 11 years in a neighboring school district which is the actual site for this research study. Additionally, I have previous experiences as both a middle and high school teacher specialist and a 7th grade teacher. During the 2012-2013 and 2013-2014 school years I was actively involved within the school district's Edmodo grade level math groups. I frequently visited the groups to monitor the district's math pacing guides and suggested instructional activities on a weekly basis. I used this information to gather prior knowledge in preparation for observing classroom instruction and planning with my former principal for grade level math professional learning community meetings.

Many elementary teachers within my previous school district had a difficult time integrating the increased rigor of state math SOLs into their daily grade level math instruction. The amount of new mathematics content to be taught along with the need to align formative assessments with daily instruction proved to be a daunting task. The school district created elementary grade level specific math groups within its Edmodo site and encouraged all elementary teachers to join and actively participate. These groups provided math content information, weekly pacing guides, and a forum for teachers to share and collaborate on math lessons and instructional strategies. A number of elementary teachers embraced these groups by

actively participating and interacting with one another as a community of practice. Participating in these math grade level Edmodo groups enabled elementary teachers to collaborate across the district on best practices and common assessments. This type of activity within the community of practice possibly helped teachers develop as professionals, specifically in the areas of perceived learning and sense of community.

As an elementary principal instructional leadership is my primary work responsibility. I desired to examine elementary teachers in a community of practice so that the structural and textural description I generated from the participants' description of the phenomenon might be used to possibly replicate communities of practice within other district-wide subject areas such as elementary language arts or in smaller learning communities within my own present elementary school or other school sites.

Data Collection

Qualitative data collection consists of several related activities established to provide information and explanation regarding particular research questions (Creswell, 2007). Through this research study I collected data via semi-structured interviews that provided a thorough description of the essence of the phenomenon that elementary teachers experienced when they participated in Edmodo, an online professional learning network, as a community of practice (Creswell, 2013). Secondly, I conducted a focus group interview to examine the degree in which the group of participants functioned as a community of practice. This data allowed perception of the phenomenon to emerge since individual realities may not be thoroughly described through a one to one interview setting (Creswell, 2013; Morgan, 1988). Further, I conducted a document analysis of the postings in Edmodo conducted by participants within their assigned mathematics grade level group as a means of establishing a non-threatening environment and eliminating

barriers to personal communication such as time constraints (Creswell, 2013; James & Busher, 2007). The goal of data collection was to determine the shared essence and experience of elementary teachers who participated in an online professional learning network as a community of practice. Data collection began after approval from the school district's Department of Research and Planning, from IRB, as well as from both my dissertation chair and committee members.

Semi-Structured Interviews

A semi-structured interview with participants is the primary method of collecting qualitative data within transcendental phenomenological research (Creswell, 2013; Hatch, 2002; Kvale & Brinkmann, 2009; Lincoln & Guba, 1985; Merriam, 1988; Moustakas, 1994). According to Moustakas (1994) interviewing is critical to phenomenological research as it allows the researcher to gather information regarding past experiences and information. The interview serves to reveal the unique and personal reality of each participant with the understanding that his or her perception is relevant and meaningful towards creating an understanding of the phenomenon (Patton, 1980, 1990). A phenomenological interview consists of an informal interaction between the researcher and participant grounded in semi-structured and open-ended questions which focus on a collaborative approach (Creswell, 2013; Kvale & Brinkmann, 2009; Moustakas, 1994).

I followed Kvale and Brinkmann's (2009) seven stages of an interview report as the foundation for the interviews. The interview report allowed me to conduct each interview in such a manner that each participant was asked the same series of questions in identical order (Kvale & Brinkmann, 2009; Patton, 1990). Prior to conducting the interviews I obtained written consent from the district's Office of Research and Planning and from each participant. A copy

of the interview questions was submitted to the district's Office of Research and Planning prior to interviewing. Each of the interviews lasted approximately 60 minutes and were conducted by me. Open-ended, general, and focused questions were asked in a one-on-one setting at each participant's school site to minimize inconvenience. I utilized recording procedures using iPhone 6 voice memo, and assigned a number and pseudonym for each participant when labeling each recording by date. I sent each voice recording to my university email for secondary safe keeping. An interview protocol form was used to record responses to open-ended questions and solid interviewing procedures were used to include using allotted time wisely, being respectful and courteous to all participants, and using active listening skills (Creswell, 2013; Kvale & Brinkmann, 2009).

Eleven participants to include ten elementary teachers and one elementary math coach were asked to participate in the research study. Time and effort was given towards developing a positive and trusting working relationship between each participant and myself to ensure honest and comprehensive responses to interview questions (Moustakas, 1994; Stake, 2005). I followed established interview etiquette to include introductions, a selection of the participants' pseudonym, and the reason why it was needed (Creswell, 2013).

The interview questions were created from the review of literature on how elementary teachers participate in an online professional learning network as a community of practice. A list of standardized, open-ended interview questions that were asked of each research participant was as follows:

Standardized Open-Ended Interview Questions

1. If money were no object, please describe your dream vacation. (ice breaker)

2. Please describe your teaching experience, to include how many years you have taught and what grade levels? (Please do not state any specific school district or elementary school locations)
3. What is your current teaching assignment? (Please do not state your elementary school location)
4. Please describe all of your educational experiences, including degrees and specialized trainings, which have prepared you for your position as an elementary teacher.
5. Which PLNs do you actively participate in within your role as an elementary teacher?
6. How would you describe your level of participation, if any, in professional learning networks as an elementary teacher?
7. What are some specific reasons you chose to participate in a professional learning network as an elementary teacher?
8. How does your participation, if any, in a professional learning network impact your scope of communication with other elementary teachers?
9. How does your participation, if any, in a professional learning network impact the convenience of connecting online with other elementary teachers?
10. How does your participation, if any, in a professional learning network impact the professional dialogue you maintain between yourself and other colleagues?
11. What specific instructional techniques, if any, have you learned about or refined through your participation in a professional learning network to teach elementary instructional content?
12. What subjects, if any, have you felt more successful teaching due to your participation in a professional learning network?

13. What types of professional development, if any, have you received through your participation in a professional learning network?
14. What are some of the reasons, if any, you participate in a professional learning network for professional development?
15. How does your participation, if any, in a professional learning network for professional development focus on student achievement?
16. How has your participation, if any, in an online professional learning network as a community of practice transformed your learning experiences?
17. How have you used social media such as Twitter or Edmodo, if any, to transform your learning experiences?
18. How has sharing and exchanging electronic resources, if any, helped to create a sense of community within your community of practice?
19. How has your participation in a community of practice, if any, encouraged collaboration and communication between yourself and your colleagues?
20. How has your participation within a community of practice, if any, created a sense of professional growth for yourself?
21. How has your participation within a community of practice, if any, positively influenced your engagement, motivation, and enhanced retention of new information?
22. How do you view Edmodo, if any, as influencing your students' level of engagement during your instruction?
23. How does using Edmodo, if any, enhance your students' engagement with you as well as their peers?

24. How does using Edmodo, if any, influence your students' level of collaboration with one another?
25. How does using Edmodo, if any, influence your students' level of collaboration with you?
26. To what degree do your students, if any, have access to Internet and Edmodo usage at home?
27. How do you use Edmodo, if any, to collaborate with other elementary teachers?
28. What types of instructional materials and online resources, if any, do you share and collaborate with among other elementary teachers?
29. How does your use of Edmodo, if any, allow you to collaborate frequently, without regard for specific time or location?
30. How do you use Edmodo, if any, for professional development purposes?
31. What types of professional development, if any, have you received or accessed through your use of Edmodo?

The purpose of interview questions one through four regarding the educational background and teaching experience of each participant was to gather background information and to develop rapport during the interview. These questions also laid the groundwork for possibly more open and detailed interview responses (Moustakas, 1994).

There were many reasons why teachers chose to participate in an online professional learning network. Continual flow of information and communication without regard to time and space, the need to create information and contribute to others learning, the need to develop an online electronic portfolio of resources, the need to create authentic learning practices, and a desire to maintain an online presence through blogs or tweets were several considerations

(Barrett & Garrett, 2009; Cordell, Rogers, & Parker, 2012; Davis, 2012; Gavigan, 2012; Hung, 2002; LaGarde & Whitehead, 2012; Saville, 2013; Utecht, 2010). Because Edmodo is an online professional learning network, questions five through 10 were developed to assess the reasons why the participants chose to participate in an online professional learning network.

Participation in an online professional learning network had the possibility of assisting elementary teachers with teaching instructional content (Miller, 2007; Thompson, Kitchie, & Gagnon, 2011; Tsai, et al., 2010; Wang, et al., 2013). Tsai, et al., (2010) cited satisfaction of learning and acceptance of technology as two ways that participation in an online professional learning network assists teachers with the teaching of specific content, such as science and mathematics. Miller (2007) examined the importance of online discussions when teaching mathematics while Wang, et al., (2013) suggested using online resources to organize content and to provide instruction through a Promethean or SMART board. Questions 11 and 12 were developed to determine which instructional techniques the participants have learned through participating in a professional learning network and which subjects they felt more successful teaching due to their participation in a professional learning network.

Enhancing one's sense of professional growth, professional development, and meeting educational goals also contributed to teachers' desire to participate in an online professional learning network (Bull & Buechler, 1996; Clary & Wandersee, 2009; Dawson, et al., 2013; Thompson, et al., 2011). Participating in an online professional learning network assisted teachers with increasing their level of content knowledge and enhancing their perception that they are better equipped to meet their students' instructional needs (Clary & Wandersee, 2009). Questions 13 through 15 were designed to determine the types of professional development the participants have received through participation in a professional learning network, the reasons

why they choose a professional learning network to meet their professional development needs, and how they view their participation in a professional learning network for professional development as helping to focus on increased student achievement.

A community of practice was made up of participants who were primarily focused on learning and enhancing their profession through their collected efforts (Elias, 2012; Eller, 2012; Garavan & McCarthy, 2008; Nelson et al., 2010; Parsad, et al., 2001). Wilson (2011) examined teachers who perceived enhanced learning through the blending of instructional technology with subject matter content. Questions 16 and 17 were designed to ask participants how their participation in a professional learning network as a community of practice, such as Edmodo, has transformed their learning experiences.

Sense of community within a community of practice was often enhanced through the collaboration and communication of its participants (Allen, 2003; Brouwer, et al., 2012; Cox, 2004; I-Chun, 2012; Mageau, 2012; Moore, 2003; Tsai, 2012). Mageau (2012) examined having participants actively involved in developing a vision and purpose of a community of practice as a means of enhancing sense of community. Collaboration and communication was also necessary for teachers to share instructional practices and resources which in turn may lead to an enhanced sense of community and learning (Allen, 2003; Cox, 2004; I-Chun, 2012). Questions 18 and 19 were devised to determine how participants were able to create a sense of community within a community of practice through the sharing and exchanging of electronic resources, and further, how their participation in a community of practice encouraged collaboration and communication among its participants.

Professional growth as it related to enhanced retention rates, engagement in work, and motivation also contributed to communities of practice. Participants within a community of

practice have noted enhanced retention, engagement, and motivation (Allen, 2003; Marken & Dickinson, 2013). Allen (2003) identified functions of a community of practice such as defining roles, establishing forums, providing professional development, encouraging socialization, providing collaboration, and facilitating comradery. Teachers also indicated that participating within a community of practice can possibly be more beneficial to their professional development than workshops or specific trainings (Loucks-Horsely, et al., 1998; Khalid, et al., 2013). Questions 20 and 21 addressed how participation in a community of practice created a sense of professional growth for participants and whether such participation positively influenced their engagement, motivation, and retention of information.

Edmodo, an online professional learning network that functions as a community of practice, provided an avenue for teachers to enhance student engagement. Edmodo, like other social media such as Twitter, encouraged a high level of participation and emotional validation regarding student work which may lead to increased student engagement (Careless, 2012; Greenhow, 2011; Horn, 2012; Scott, 2012). Questions 22 and 23 were developed to determine how participants view Edmodo as influencing their students' level of engagement during instruction as well as interactions with both them and their peers.

There were several instances in which Edmodo has been used as a method to enhance student collaboration such as through the use of collaborative teams (Graham & Ferriter, 2010; Horn, 2012; Richardson, 2012). Graham and Ferriter (2010) examined the establishment of a comprehensive communication system and creating a culture of collaboration where students learn from each other. Creating a safe online environment through Edmodo where students can collaborate and share information through group work encouraged positive relationships and helped develop shared learning experiences (Chin, 2013; Horn, 2012; Richardson, 2012).

Questions 24, 25, and 26 were devised to gather participants' perceptions on how using Edmodo both at school and at home influenced their students' level of collaboration with both them as well as their peers.

Similar to students, teachers used Edmodo as a collaborative tool in sharing resources such as video clips and lesson strategies as well as planning instructional projects (Boksz, 2014; Hammonds, Matherson, Wilson & Wright, 2013). Collaboration among teachers within Edmodo had the potential to occur frequently with relative ease, without regard for time or geography constraints (Dobler, 2012; Edmodo, 2012). Further, informal professional development among teachers within Edmodo also occurred through blogs and participation in content or grade level specific groups (Burns, 2013; Dobler, 2012; Edmodo, 2012). Questions 27 through 29 addressed how participants used Edmodo to collaborate with other teachers, what types of instructional resources were shared within Edmodo, and how participants were able to collaborate with others without time or geography constraints.

In addition to collaboration, teachers also used Edmodo for professional development through using its repository of shared video links, instructional videos, and online documents (Barrett & Garrett, 2009; Lane, 2012; Sanders, 2012; Trust, 2012; Wendt, 2013). Edmodo also provided its participants with access to numerous learning communities based on specific subjects and topics as a means of professional development (Hammonds, et al., 2013; Storberg-Walker, 2008). Further, Edmodo, as a community of practice, allowed participants to become more effective practitioners through professional development achieved based on sharing resources and collaboration among teachers with similar interests (Hammonds, et al, 2013). Questions 30 and 31 sought to determine how participants viewed their use of Edmodo for professional development, specifically what types they received.

Focus Group

I conducted a focus group interview with several participants to provide an avenue for participants' description of the phenomenon of participating in an online professional learning network as a community of practice to emerge. Further, participants' individual beliefs and reality might not be adequately expressed through responding to direct one-on-one questions but instead through discussion and group interaction with other similar participants (Creswell, 2013; Morgan, 1988). Focus group questions were as follows:

1. Please tell us your name, what grade you teach, at what school you teach, and how many years you have been teaching.
2. Explain some of the challenges, if any, you have faced when planning for the teaching of the more rigorous mathematics SOL curriculum.
3. How has participating in Edmodo grade level mathematics groups, if any, influenced your sense of community?
4. How has participating in Edmodo grade level mathematics groups, if any, influenced your sense of perceived learning?
5. How has participating in Edmodo grade level mathematics groups, if any, influenced your sense of professional growth?
6. How do you believe participating in your assigned grade level mathematics Edmodo group, if any, has assisted your ability to collaborate and share with other teachers regarding grade level mathematics instruction?
7. How has participation in your Edmodo grade level mathematics group, if any, provided you with professional development opportunities?

8. How has your perception of the teaching profession, if any, changed since participating in Edmodo as a community of practice?

Similar to the semi-structured interview questions, the focus group questions were developed from an analysis of the related literature. Question one provided an opportunity for participants to meet each other and develop an understanding of each one's professional background. Question two provided an avenue for participants to discuss some of the challenges faced when planning for the teaching of the more rigorous mathematics SOL curriculum. Research demonstrated that participation in an online professional learning network such as Edmodo assisted with teaching curriculum (Miller, 2007; Thompson, Kitchie, & Gagnon, 2011; Tsai, et al., 2010; Wang, et al., 2013). Questions three, four, and five sought to understand how participants viewed their participation in Edmodo grade level mathematics groups as influencing their sense of community, sense of perceived learning, and sense of professional growth. Elementary teachers who shared best practices and instructional resources with colleagues developed an enhanced sense of community (Allen, 2003; Cox, 2004; I-Chun, 2012). Further, participants enhanced their perception of learning through collaborating with other colleagues in a community of practice (Elias, 2012; Eller, 2012; Garavan & McCarthy, 2008; Nelson, et al., 2010; Parsad, et al., 2001). Participants within a community of practice have demonstrated an enhanced sense of professional growth through retention, engagement with colleagues, and personal motivation (Allen, 2003; Marken & Dickinson, 2013). Question six examined how participants believed participating in Edmodo assisted their ability to collaborate and share with other teachers. Elementary teachers have demonstrated the benefits of using Edmodo for lesson strategies and instructional projects (Boksz, 2014; Dobler, 2012). Question seven sought to determine how participants viewed participation in their Edmodo grade level mathematics group

as professional development. Edmodo provided professional development for elementary teachers through its shared video links, repository of online documents, and use of online learning communities (Barrett & Garrett, 2009; Sanders, 2012; Hammonds, et al., 2013). Lastly, question eight examined how participants viewed their perception of the teaching profession as changing through participating in Edmodo as a community of practice.

Document Analysis

I examined postings by participants in their grade level mathematics Edmodo group to establish a non-threatening environment and to increase the comfort level for participants. Additionally, I examined the instructional content uploaded and shared by participants within their grade level specific mathematics Edmodo group due to time constraints and other barriers to personal, face to face communication (Creswell, 2013; James & Busher, 2007). Examination of participants' postings in Edmodo and math content shared such as mathematics pacing guides, lesson plans, and math instructional strategies with colleagues and other grade level teachers allowed me to visualize the textural description generated through semi-structured and focus group interviews.

Data Analysis

A phenomenological analysis of the data collected was conducted based upon Moustakas' modification of the van Kaam method (Moustakas, 1994; van Kaam, 1959, 1966). Semi-structured interviews with participants were an integral component of this research study's data collection. After the completion of each interview I listened to the recorded interviews, transcribed the content verbatim, and read each corresponding interview transcription to ensure its accuracy and quality. As I repeatedly listened to each interview and read each transcription numerous times I made note of important statements and phrases (Creswell, 2014). The

document analysis included a sample of the participants' postings in their Edmodo mathematics grade level group which were used to gauge their participation as a community of practice. Some of these postings included instructional content, pacing guides, lesson plans, and assessments shared among other participants in the mathematics grade level group.

Following Moustakas' (1994) guidelines, I used the transcription of each interview to complete a horizontalization of the data by listing each expression that was relevant to the phenomenon. The invariant constituents of the data were determined based upon analyzing whether each expression contained aspects of the phenomenon that was necessary for better understanding it as well as whether a certain expression could be coded and labeled. Expressions that were repetitive or vague in nature were eliminated, thus allowing the invariant constituents of the phenomenon to remain. The invariant constituents were then clustered into themes used to generate the most integral themes of the phenomenon. I then validated each invariant constituent and subsequent theme by comparing them against each participant's interview transcription. Once the invariant constituents and themes were validated I used them to construct a rich textural and structural description for each research participant. Lastly, I generated a composite description of the meaning and essence of the phenomenon which represented the participants as a community of practice (Moustakas, 1994).

Trustworthiness

The external validity of this research study was upheld through a process of ensuring its credibility, dependability, confirmability, and transferability. The use of member checks, triangulation of the data, as well as a rich textural and structural description of the experience was employed to insure trustworthiness of the research study. Lincoln and Guba (1985) noted that establishing trustworthiness within a research study is necessary to ensure its findings are

worthy of valid consideration. Further, trustworthiness extended beyond incorporating specific strategies to ensure validity and credibility. As the researcher it was my responsibility to provide an honest representation of the participants' reality and the description of the phenomenon being examined (Creswell, 2013).

Credibility

Credibility of the research study referred to the extent that its findings accurately generate a true description of the phenomenon (Liberty, 2014). I used member checking to ensure that the collection of data, its analysis, my interpretations of the data, and my conclusions accurately reflected the participants' reality and experience (Creswell, 2013; Lincoln & Guba, 1985). Participants were asked to thoroughly review and rate the transcriptions of their personal interviews as well as the analysis and results of the research (Creswell, 2013; Lincoln & Guba, 1985; Stake, 1995). All documentation created through the member checking process was electronically stored and available for all participants' viewing upon request.

Dependability and Confirmability

Dependability of the research study was similar to consistency in which a triangulation of the data occurred as a means of establishing an additional check of external validity of the research study (Creswell, 2013). I used a variety of different sources of data collection and methods to create evidence in support of certain themes discussed through personal interviews or focus groups (Creswell, 2013; Merriam, 1988; Lincoln & Guba, 1985). Evidence that was collected such as through an examination of online artifacts helped provide validity to the themes generated (Creswell, 2013).

Confirmability of the research study ensured that its findings pertained to the lived experiences and thoughts of the participants instead of the thoughts and personal bias of myself

as the researcher (Shenton, 2004). It is difficult for a researcher to ensure legitimate objectivity due to his or her biases and predispositions (Patton, 1990). Maintaining reflexivity involved remaining conscience of my own personal awareness and beliefs regarding the phenomenon and continuously exhibit a self-reflection effort in ignoring my biases and prejudices (Husserl, 1913, 1970; Moustakas, 1994). To assist with ensuring confirmability of the research I recorded the personal narratives of the research participants in a concerted effort to express their story and lived experience of the phenomenon (Moustakas, 1994).

Transferability

A rich description of the phenomenon was provided to allow the reader to affirm that the reality of the experience among the participants could be applicable within other contexts (Creswell, 2013; Lincoln & Guba, 1985; Merriam, 1988; Stake, 2010). I presented a comprehensive picture of the phenomenon, complete with textural descriptions and direct quotations to help the reader transfer information to other contexts through similar characteristics (Creswell, 2013). Verbatim quotations and descriptive phrases were documented through a transcription process which helped describe the essence and reality of each participant (Creswell, 2013).

Ethical Considerations

Participants might be hesitant to share what they perceived as negative impressions on participating in an online professional learning network, such as lack of time, lack of support from administration, or lack of satisfaction with the math content and pacing that is shared. This concern was addressed by ensuring that all participants were assigned numbers or pseudonyms to preserve their anonymity. Participants might also not be completely honest with the researcher for fear of being perceived as negative or uncooperative. They may answer interview questions

in a manner which might be perceived as socially acceptable. This consideration was addressed by reiterating that participants should answer interview questions truthfully and completely. Lastly, participants may be hesitant to fully participate in the research study due to a perceived lack of time and other professional commitments. This factor was addressed by offering a small amount of compensation such as a gift card to a local business for participation in the research study and a thank you letter written to them and their principal or supervisor for their personnel file.

Summary

This study described the shared experience of elementary teachers who participated in Edmodo, an online professional learning network, as a community of practice. A phenomenological research method was utilized to investigate the experience. This research study was significant to the body of literature because elementary teachers struggle with teaching more rigorous mathematics SOLs and participation in Edmodo grade level mathematics groups as a community of practice could potentially influence their perceived sense of learning, sense of community, and sense of professional growth (Brouwer, Brekelmans, Nieuwenhuis, & Simons, 2012; Eller, 2012; I-Chun, 2012; Khalid, Joyes, Ellison, & Karim, 2013; Marken & Dickinson, 2013; Tsai, 2012; Wilson, 2011). These factors might all further develop the contributions participants make towards the elementary teaching profession. Further, a review of the current and related literature revealed there is a lack of research on elementary teachers' participation in an online professional learning network as a community of practice. This research study was limited to elementary teachers and an elementary math coach within a suburban Virginia school district who were active participants within Edmodo, an online professional learning network, which functioned as a community of practice.

CHAPTER FOUR: FINDINGS

Overview

The purpose of this transcendental phenomenological study was to describe what elementary teachers experienced when they participated in Edmodo, an online professional learning network, as a community of practice within a large suburban school district in central Virginia. Data was collected and analyzed from research participants through the use of semi-structured interview responses, focus group interview discussion, and research participants' postings within their Edmodo grade level mathematics groups. This chapter outlined the results of data collection, focusing on coding and the emergence of themes. A detailed description of each research participant, results of data collection and analysis, a description of identified, common themes and a discussion of how the data addresses each of the four research questions was included within this chapter.

Participants

I assigned each of the 11 research participants a pseudonym they created in order to preserve their anonymity. Each research participant met all criterion for inclusion in the research study, including having taught at the elementary level a minimum of three years, having completed all Edmodo online training modules offered by the school district, and having actively participated in their assigned Edmodo grade level math group. Five of the research participants exclusively taught elementary math, serving as either an elementary math coach or an elementary Title I math teacher. Table 1 provides a brief summary of each participant, including participant number, pseudonyms, years of experience, and type of education position held.

Mary

Mary (pseudonym) is an elementary math coach with 20 years teaching experience, 13 of those as an elementary math coach. She has a Bachelor of Arts with majors in sociology and American studies with a specialization in early childhood education. She also has a master's degree in curriculum and instruction with a focus in elementary mathematics as well as an endorsement in administration and supervision. Her professional repertoire also includes several one to two week courses on specialized aspects of elementary mathematics. Mary's work as an elementary math coach includes assisting both elementary school administrators and elementary math teachers with planning for math instruction, modeling best practices, providing professional development, and creating pacing guidelines. She views participating in a PLN as a community of practice as transforming her learning experiences by providing her an opportunity to view and consider a wider range of ideas. According to Mary,

The online communities in particular I can hear so many different ideas that I might not have thought of on my own and its really... it's helped me to start thinking about how we as a county can provide more online learning opportunities for teachers beyond just the discussions that happen in the more informal learning network.

Grace

Grace (pseudonym) is an elementary special education teacher with 18 years of experience among three different elementary schools. She has taught all elementary grades, kindergarten through fifth grade, including students with Specific Learning Disabilities, Other Health Impairment, Autism, and Developmental Delays in both a self-contained and collaborative classroom setting. Grace has a Bachelor of Arts in psychology and a Master's

degree in Special Education, with specialized trainings in multi-sensory instruction, mentoring and technology leadership.

Grace views her participation within a community of practice as creating a sense of professional growth for herself. She presently works with both 2nd and 4th grade students with disabilities and actively participates in professional learning communities with the 2nd and 4th grade regular education teachers. She revealed,

I'm not the teacher I was before I had this greater access to um... these resources and these other professionals... You know you kind of felt like it was... you were reinventing the wheel constantly. I'm not the teacher I was before I had this and now I don't feel that anymore.

Lynn

Lynn (pseudonym) is an elementary Title I math teacher with 12 years of experience, where she has taught third, fourth, fifth, and sixth grade as a classroom teacher. In her present role she primarily works with small groups of students in grades Kindergarten through fifth. Lynn has a Bachelor's degree in elementary education, a Master's degree in teaching, and an Ed.S. degree in curriculum and instruction, in addition to holding both math specialist and middle school math endorsements.

Lynn believes her participation in her Edmodo grade level math groups as a community of practice encouraged collaboration and communication between herself and her colleagues. She stated,

It has encouraged collaboration and communication...in a positive way, like I said with those face to face meetings that we have monthly. Between those meetings we have questions from one another, we can seek out advice and information via email usually

and sometimes through our Edmodo groups... we will communicate and collaborate more... more so than if we were limited to just the face to face meetings.

Catherine

Catherine (pseudonym) has a unique professional background in comparison to the other research subjects. Catherine worked for two years as an instructional assistant prior to becoming a second grade teacher in 2005. After teaching a number of years in second grade she transitioned to her present position as a Title I reading teacher where she works with students and teachers in grades Kindergarten through fifth grade. Catherine has a Bachelor of Arts degree and is certified to teach grades pre-kindergarten through fifth. She has attended many trainings throughout her time as a teacher on a variety of different topics and constantly seeks new training opportunities.

Catherine, an Edmodo Ambassador with multiple Edmodo certifications, participates in Edmodo as a community of practice on a daily basis with teachers all around the world. When asked how her participation in a professional learning network such as Edmodo impacts the professional dialogue she maintains between herself and other colleagues, Catherine responded,

Well, I think it impacts it greatly. We have great discussions about best practices in education. I can go on to my networks right now and say ‘Hey, I’m starting a PBL. I’m new at this. Do you have any ideas for me?’ and I’ll get flooded with information, probably within an hour. I’ll probably have 25 replies back.

Mandy

Mandy (pseudonym) has taught second, third, and fourth grades for a total of nine years. She is presently preparing to transition into a new role as her school’s Title I math teacher, in which she will work with all grade levels, kindergarten through fifth grade. Mandy completed a

five year combined Bachelor's and Master's degree program and also worked in a collaborative special education program for several years.

Mandy views sharing and exchanging electronic resources, such as through her participation in her Edmodo grade level mathematics groups, as creating a sense of community within her community of practice. She stated,

I think professionals such as ourselves in education sharing resources with each other um provides learning for teachers. It also allows us to... it's like a springboard for new ideas. A lot of times I will see other people's ideas and that will spark an idea in my head and then I can go create something or tweek it just a bit to... and I think that brings people together and creates unity.

Nicole

Nicole (pseudonym) is an elementary teacher who has taught at the primary level for a total of eleven years, three years in kindergarten and eight years in first grade. She is excited about making the transition to third grade during the coming school year. Nicole has a Bachelor of Arts in Interdisciplinary Liberal Arts as well as a Master of Arts in Elementary Education and she actively participates in all of the content grade level professional learning networks through Edmodo that are offered by the school district.

Nicole sees herself as having developed a sense of professional growth through her participation in a community of practice among the various Edmodo grade level groups, especially mathematics. She views being able to answer a colleague's question or offer suggestions as developing her own professional growth. She responded after a thoughtful pause, "A sense of professional growth I guess comes from when somebody poses a question or asks for

ideas and when you're able to answer them or contribute to them and use your expertise, your experience to answer them it does give you that sense of professional growth."

Truly

Truly (pseudonym) began teaching in 1990 in a group home for women with mental disabilities. After taking off several years from work she eventually transitioned into the roles of substitute, technology resource assistant and teacher. She has six years of experience teaching fourth, fifth, and first grades. Truly has a Bachelor of Science in elementary education with certification in pre-kindergarten through eighth grade. She participates in professional development through the county where she teaches and won a grant with two colleagues that grant was offered by the Partners in the Arts.

Truly's participation in a community of practice encourages her collaboration and communication between herself and her colleagues. She remains positive in that there are more people who are willing to collaborate and communicate within their Edmodo math grade level groups than the previous year. She stated,

And what's been happening is it's still playing in my mind so it has encouraged me to reach out to all of our department Edmodo groups, 1st grade level in the county, in a request to possibly have a personal meeting, like you and I are having now, to build a real relationship in hopes that it will carry through digitally on Edmodo.

Michelle

Michelle (pseudonym) spent six years teaching first grade, beginning in 1993, before taking several years off. When she returned to teaching she taught first grade for an additional five years before transitioning into the role of education consultant for Head Start, which covered nine counties in the greater metro Richmond area. Upon returning to the classroom Michelle

substitute taught in various grade levels for three years and also taught five years at a private pre-school. Michelle presently teaches kindergarten in the school district, where she holds a Bachelor of Arts and Master of Arts in curriculum and instruction.

Michelle values participating in a professional learning network for her own professional development. She believes she is compensated not necessarily through monetary means but through learning ideas from other teachers. Michelle also makes a connection between learning between teachers and that of learning among students. She pointed out,

And so that whole learning is what we want our students to do so I feel like why wouldn't teachers do what we want our student to do? So that sharing and collaboration is... only going to make me better at doing the job I need to do...and so I can't just take, take, take. That's why I actively participate in them because I feel like I owe it back to give.

Faith

Faith (pseudonym) has taught for ten years total in three different states. In Virginia, Faith taught fifth grade prior to transitioning into her position as a Title I math teacher. She cites having many college credits from various different universities due to being a military wife. After a number of years she eventually completed her Masters of Arts in elementary reading and mathematics to accompany her Bachelor of Science in psychology.

Faith believes her participation in a community of practice encourages collaboration and communication between herself and her colleagues as well as a sense of professional growth. Sharing back and forth among colleagues encourages others to participate, according to Faith. She also revealed the impact participating in Edmodo has had on her own professional growth, "participating in Edmodo and ...the trainings have given me more experience and I feel like I'm a more effective teacher that is up to date with the latest strategies to help others."

Savannah

Savannah (pseudonym) is a Title I math teacher who has a Masters of Arts in teaching and previous experience teaching both fourth and fifth grade. As a Title I math teacher she works with students in grades kindergarten through fifth and also coaches and models lessons for teachers in various grade levels. In addition to her math experience, Savannah has a two year photography degree which enables her to work as a professional photographer as well as previous experience in social work.

Savannah uses Edmodo extensively, not so much as an interactive participant within a community of practice, but as a means of storing and eventually sharing a myriad of online resources in its library such as videos and documents, organized by SOL strand and grade level. Savannah views this sharing and exchanging of electronic resources as helping to create a sense of community within her community of practice. Savannah stated,

So anything that the county sends out I have put in a grade level folder in Edmodo and each grade level folder has materials that the county sends out so when I go meet with grade levels I am able to quickly pull up the folder and share with them.

Savannah views these electronic resources through Edmodo as a means of working more efficiently, as it allows her to look up multiple topics at one time, as well as read and analyze what others may think about a particular online resource.

Pam

Pam (pseudonym) has taught second, third, fourth and fifth grades for a total of 12 years. She is presently teaching her first year in second grade at a new school location, so she is in the midst of a transition year. Pam holds a Bachelor of Science degree in biology and a Master of

Arts degree in curriculum and instruction. She holds a certification to teach kindergarten through eighth grade and held an expired certification to teach secondary biology.

Pam describes one of the specific reasons she chose to participate in a professional learning network is that it provides her with inspiration. She elaborates that this inspiration comes in the form of finding visual, fun ideas and motivating her to try new things. Pam stated,

I definitely am more motivated. I think the last couple of years, having the Teachers Pay Teachers and the social networks and your um... seeing so many fun ideas. It's very visual. I'm a very visual person um... and I... it's just more motivating I think... learning more ideas.

Despite describing the experience as “inspiration,” Pam believes that professional learning networks, such as her county’s Edmodo grade level math groups, are lacking in terms of professional dialogue and true collaboration. She revealed, “So people will create a group and people will be added and then it kind of goes by the wayside unless there is somebody that is managing and is running it kind of in charge I think it just gets underused.”

Table 1

Summary of research participants

<u>Participant name</u>	<u>Years of experience</u>	<u>Position</u>
(P1) Mary	20	Elementary math coach
(P2) Grace	18	Elementary special ed teacher
(P3) Lynn	12	Title I math teacher
(P4) Catherine	11	Title I reading teacher
(P5) Mandy	9	Title I math teacher
(P6) Nicole	11	Elementary math teacher
(P7) Truly	6	Elementary math teacher

(P8) Michelle	15	Elementary math teacher
(P9) Faith	10	Title I math teacher
(P10) Savannah	19	Title I math teacher
(P11) Pam	12	Elementary math teacher

Results

Data collected from participants' semi-structured interview responses, focus group interview discussion, and participant postings within their Edmodo grade level math groups was coded for significant themes. An analysis of data from all sources was conducted to generate a description of the lived experience of elementary teachers' participation in a community of practice. The themes that emerged from the data analysis, along with direct quotations from each research participant, formed the foundation of this research study's results. Table 2 illustrates the codes from each research participant in addition to their frequency, which was used as a pivotal component of the study's data analysis.

Table 2

Codes Generated from Data Analysis

<u>Identified Code</u>	<u>Participants</u>	<u>Frequency</u>
County mandate	P1; P7	2
Professional Learning Community (PLC)	P1; P5	2
Dispense information	P6	1
PLN helps one another	P2	1
Networking with professionals	P1, P2, P4, P5, P7, P8	6
Data analysis	P5	1
Pacing for instruction	P1, P2, P3, P5, P6, P7, P9	7
Getting questions answered	P2, P6	2

Communication with outside staff	P1, P3, P4, P5, P6, P7, P8	
	P9, P11	9
Convenience of instant communication	P2, P3, P7, P8	4
Encourage collaboration	P1, P3, P5, P6, P8	5
“Work smart, not hard”	P6, P8	2
Use Google docs for collaboration	P8	1
Scaffolding instructional strategies	P3	1
Utilizing new technology	P5, P8	2
Develop consistency with pacing	P2	1
Questions about curriculum addressed	P1, P4, P5, P6, P11	5
Sharing resources and ideas	P2, P3, P4, P5, P6, P8, P9,	
	P10, P11	9
Student achievement	P1, P5	2
Access to instructional videos	P7, P8, P10, P11	4
Professional development through PLN	P2, P3, P4, P7, P8, P10	6
Same struggles with other educators	P2	1
Collaboration to help Tier 2 instruction	P2, P3, P4, P8	4
Access resources from district	P5, P6, P7, P8	4
Sense of professional growth	P1, P2, P4, P5, P8	5
Personal validation	P2, P4, P6, P7, P8	5
Positively influenced teacher engagement	P3, P4, P5, P10	4
Edmodo use-student engagement	P4, P5, P7, P8, P9, P10	6
Edmodo use-student differentiation	P4, P8	2
Edmodo use- student communication	P4, P5, P6, P7, P9, P11	6
Edmodo use-student collaboration	P8, P9	2
Edmodo use-teacher communication	P4, P5, P9, P1, P2, P3, P4	7
Edmodo use-pacing suggestions	P5, P6, P7	3

Edmodo use-teacher online library use	P1, P8, P9, P10	4
Edmodo use-teacher survey instrument	P4, P8	2
Edmodo use-provides digital footprint	P8	1
Communicate without regard for time or location	P1, P2, P4, P5, P7, P8, P9 P10, P11	9
Horizontal and vertical articulation	P10	1
Teacher use of Edmodo apps	P4, P10	2
Edmodo use-efficiency	P10	1
PLN use provides inspiration	P11	1
Improving my craft	P11	1
Implementing SMART goals	P8, P11	2
Use Teachers Pay Teachers	P7, P8, P9, P11	4
Use Google Classroom	P10, P11, P6, P9, P11	5
Use of I-Can statements	P7	1
Use of Power My Learning	P8	1
Kagan strategies and training	P1, P8, P8, P11, P6	5
Participation in iLearn trainings	P7, P10, P2, P8	4
Use of Facebook learning community	P11	1
Use of Youtube videos for instruction	P11	1
<hr/> Total number of identified codes		51

There were 51 codes identified from the analysis of the semi-structured interviews. The codes stated most frequently were discussed in detail along with the emergence of their subsequent themes. The codes were repeatedly examined and combined into broader categories which eventually emerged as three themes. Because this research study was qualitative, not quantitative, in nature statistical significance was not determined based on the data. A rich

description of the lived experience of participants in a community of practice provided a detailed portrayal into their personal thoughts and beliefs.

Theme Development

Three major themes emerged as a result of the data analyzed from the 11 participants regarding their participation in Edmodo as a community of practice: communication and networking with outside staff without regard for time or location, sharing pacing guidelines and instructional resources, and using Edmodo as a communication tool. Table 3 illustrates the most frequent codes from the data analysis and their subsequent themes.

Table 3

Theme emergence from code analysis

Theme 1: Communication and networking with outside staff without regard for time or location

<u>Codes</u>	<u>Frequency</u>
Communicate without regard for time or location	9
Communication with outside staff	9
Networking with professionals	6

Theme 2: Sharing pacing guidelines and instructional resources

<u>Codes</u>	<u>Frequency</u>
Sharing resources and ideas	9
Pacing for instruction	7
Questions about curriculum addressed	5
Professional development through PLN	6
Kagan strategies and training	5
Use Google classroom	5

Theme 3: Using Edmodo as a communication tool

<u>Codes</u>	<u>Frequency</u>
Edmodo use- teacher communication	7
Edmodo use- student engagement	6
Edmodo use- student collaboration	6

Communication and networking with outside staff without regard for time or location. Teachers who participated in their Edmodo grade level mathematic groups as a community of practice were afforded the opportunity to communicate with other educators outside of their physical building without regard for time or location. The communication with educators from other schools was an initial first step in helping enhance participants' knowledge of instructional techniques as well as developing participants' own sense of professional growth. Mary viewed communication with outside staff as vital to her role as a central office mathematics coach. She was able to provide coaching guidance from a distance to schools while simultaneously supporting others who need enhanced support. Mary stated,

So as a coach I routinely only get into three buildings on a regular basis. I have three other buildings that I hit every now and then but I can reach all 38 of our elementary schools with my Edmodo posts. I've now been able to even if I can't coach all the teachers in our 38 buildings I'm having a direct impact on their planning in most of those schools at the 3rd and the 5th grade level.

Lynn, a Title I elementary math teacher, also saw the positive impact on the scope of communicating with others outside of her building. Receiving information initially then

discussing during monthly face to face meetings with central office math coaches like Mary and other Title I math teacher was beneficial to Lynn. Lynn commented, “When we’re sharing things in between our meetings and then we come back together... we can clarify things or we can take it further. We can um build on what we have already learned from one another.”

Catherine, a Title I reading teacher and former 2nd grade teacher and Truly, an elementary teacher, both viewed the ability to communicate with others outside their building as an opportunity to discuss best practices in education and gather useful data. Having the ability to communicate with other educators outside the building when implementing a new initiative such as problem based learning or disseminating data for use later on was extremely beneficial.

Catherine revealed,

We have great discussions about best practices in education. I can go on to my networks right now and say “Hey, I’m starting a PBL. I’m new at this. Do you have any ideas for me and I’ll get flooded with information, probably within an hour. I’ll probably have 25 replies back.

Truly viewed her level of communication with others as that of a taker, where she gathers data and then processes it for her own teaching purposes. Truly revealed,

I feel like I am gathering data usually on those and I’m thinking that other teachers as well are gathering that same data and in my mind we are trying to disseminate what we’re processing in our own teaching. Of course we’re not all there at the same time, pop in and out, and we see what messages are left. That’s really the only way I’ve been able to communicate with other elementary teachers outside of my school.

Having honest and open conversations as well as the opportunity to speak up and ask questions also related well to participants’ views on communication with others outside of their

building. Mandy, a Title I elementary math teacher felt it was important in her role to “be greatly involved, very proactive and um speak up and...ask questions. I like to learn from others and ask for feedback um and suggestions.” As a Title I math teacher, she is the math lead teacher for her school and thus, many of her colleagues depend and rely on her to be open and honest when providing information, clarification, and instructional expertise. Michelle, an elementary teacher, viewed communication as an opportunity to extend beyond the walls of her school and make connections with educators similar to those she experienced within her grade level team. Michelle stated that when she is using her grade level Edmodo math group,

You can see their little face off in the school from where they are teaching and I’ll tend to follow up with those people, maybe in an aside email or offer them my email if they want to learn more.

Finally, Nicole, an elementary teacher transitioning from first to third grade, readily admitted that she would not be communicating with teachers outside of her building in other schools if it were not for her Edmodo math grade level group. Nicole stated, “It is a way we can communicate with teachers in our grade level across the county otherwise we would not be communicating with those people on a regular basis.” Having the ability to readily communicate with others in her grade level is convenient and therefore, Nicole was more willing to respond to a colleague’s question, such as what numbers should be assessed in sequence when using the county’s first grade hidden number assessment.

Having the ability to communicate with colleagues without regard for specific time or location was significantly important, as nine out of eleven research subjects made mention of it during their interviews. Most every research subject discussed the importance of having flexibility when communicating with others within their Edmodo math grade level groups. Some

took a more personal approach in their description through connecting their own family responsibilities or role as a mother to having flexibility when communicating.

Grace took a practical approach when describing the convenience of communicating without regard for time or location. She stated, “Oh, it’s extremely convenient. The online aspect is phenomenal. There’s no other way with the demands on teachers today for time that I would be able to connect with.” Grace described it as transforming her personal time management and accessibility to her own family commitments. Mandy also mentioned family obligations when discussing the convenience of communicating on her own time. Mandy stated, “Um I love it because having a young child, I work either early in the morning or late at night, and I don’t have to worry about bothering anybody.”

Mary has the responsibility of sending out weekly pacing guide posts within her school division’s Edmodo grade level math groups to both third and fifth grade teachers. She cited being able to communicate without regard for time or location as making her job much easier. Mary revealed,

Because my posts go out usually at 6:00 AM on Friday. I schedule them to go out on Friday morning so anybody can have them on any point on Friday. Instead of me having to set a meeting time and hope that we can meet and if somebody can’t be there then we have to reschedule. They can use my post and they can use them and if they ask a question I get an email update saying that somebody has replied or asked a question so then we can respond as soon as possible.

Other research participants such as Catherine, Truly, Faith and Savannah mentioned various ways in which having the convenience of communicating without regard for time or location positively impacted their work as educators. Catherine discussed being able to

communicate with a colleague across the state about their work through Edmodo at various times of the day and night. She stated,

Well, just before we met I was in the car on my phone replying back to the teacher that's in Wise about on a meeting hook up they were doing through Edmodo because I'm not linked to you know textbooks in the classroom. I have everything on line. I do it late, late, late at night. I'm a night owl.

Savannah, like Catherine, mentioned being able to access the resource even while on her summer vacation. She revealed with slight laughter, "It's at your fingertips, anytime of the day, even when you're on vacation." Truly viewed her participation in her Edmodo grade level math group as a resource she can refer back to over time. She can log into Edmodo using CNet and view instructional videos for professional development at any time. Truly commented, "It's not just one professional development opportunity. It's a resource to go back to so I could pull it up on the computer if my battery wasn't dead right here at Panera. But that's also a curse."

Michelle and Pam elaborated on the time saving measure aspect of communicating without regard for time or location. Michelle described the online aspect of communication as being instantaneous and very reliable. She commented,

I can reference something any time of day that is convenient for me, even if my break is not when someone else's break is. The other instant part is if someone posts something I can instantly click and get to where they were. I don't have to look for it or wait for them to send me something through the pony.

Michelle also described the time stamped, running log in Edmodo where she can refer back to postings even months later as a great organizational reference which saves her time. Pam, like Michelle, believed her work is much easier now than in the past because she can access her

Edmodo grade level math group at any time, whether it be at night or in the morning. Pam elaborated,

I guess it's nice because we have access to it at any time. We can... I can get to it at school, we can access it at home. If I have any questions I know that that's a place I can go to right away. So a lot of times for our county specifically because Edmodo is... it's all connected through our county.

Sharing pacing guidelines and instructional resources. Sharing pacing guidelines, resources, and ideas through their Edmodo grade level math group was mentioned by almost every research participant. Appropriate pacing for elementary math instruction was an essential component tied directly to student achievement and one that was mentioned by seven out of eleven research participants. The majority of them discussed pacing guides in general as the primary reason they actively participate in their Edmodo grade level math group. Mary, in her role as elementary math coach, has a responsibility to upload pacing guides to both the third and fifth grade Edmodo math groups each week. Mary did not view uploading math pacing guides as a menial task. Instead, she used these weekly posts as an opportunity to discuss student misconceptions, mistakes, and big instructional ideas to prevent teachers from veering off course. Mary stated,

And our weekly posts are more like here's the topic, here's the student misconceptions, here's their mistake and where they tend to go wrong. Here's the big idea, here's what you are really trying to get across and sometimes we share activities, but it's more about just making sure that this is what you get out of this unit because lots of times teachers tend to go off on side, little side trips and miss the big picture.

Because this time each week is important, Mary believed her responsibility is to focus on key ideas and what she wanted teachers to do, as well as what she considered the most important parts of each instructional unit. Over time this work has helped Mary to refine her thinking on various elementary math topics, and in essence, helped make her a more effective math coach.

Title I elementary math teachers such as Lynn and Mandy serve as a bridge that helps connect Mary's work with weekly instructional pacing guides to the elementary teachers within their schools. Mandy used Edmodo each week to follow the pacing and asked clarifying questions within the community of her school division. Mandy recognized the importance that she join each of the Edmodo grade level math groups, Kindergarten through fifth grade, so that she could receive information and assist teachers. Mandy commented,

The content area Edmodo groups for my school system are a way for the central office people to get messages out to our grade levels and so it's good for us to be in those groups so that we are getting all the information.

Lynn described her use of pacing in the Edmodo math groups as a means to figure out how to get the "biggest bang for my buck." She often would communicate with other teachers regarding pacing to make sure that both she and the classroom teachers are spending enough time on certain topics while simultaneously not spending too much time on other topics. Lynn would often reach out to others just to receive feedback and clarification as to what they had seen the best results from the pacing guides.

Nicole, Truly, Faith, and Grace rely heavily on the weekly pacing guides posted within their respective Edmodo grade level groups. Nicole viewed the importance that all teachers receive the same information, using common language, as a means to keep everyone on track. Consistency is the key, according to Nicole. She stated, "It keeps us on the same pacing, we're

using the same language to describe what we're doing, what we're teaching and how we're teaching it." Grace concurred with Nicole with regards to the importance of consistency with pacing. Grace mentioned,

I think it helps us all to talk the same language, especially with pacing guides and curriculum supports that are put on there electronically. It helps us all to know what we're talking about on the same page and so everyone is not calling different things, different things.

Faith looked forward to when her school division rolls out their pacing guides and provides plans on what she is supposed to teach. She admitted that her participation within her Edmodo grade level math group has decreased somewhat this past year, since she had already taken the time to download instructional resources when Edmodo first started. Faith revealed,

Pacing, um, usually like now that I have everything mapped out now that I have everything up and running we usually just go to the folder. But when Edmodo was first started, I would go to the pacing guide to see what was coming up next and put the resources there.

Truly shared her colleagues sentiments but expanded her thoughts as to how pacing in her school division relates to the curriculum framework. She saw the importance of having the pacing guides as well as links to the essential learnings and the curriculum framework, in addition to instructional strategies and assessment ideas.

In addition to pacing guides, there were many different types of sharing of resources and ideas discussed among the research participants. Grace affirmed that she definitely collaborated and shared electronic resources within her Edmodo grade level group. She discussed learning several different visual procedures, instructional supports, and techniques through other teachers

who shared them during online professional learning communities. Grace also brought up an important point that it is important to know what to purge from your instructional repertoire as much as it is to know what to embrace. She stated, “You know, a lot of people have been able to share what’s worked and what hasn’t. Um... It’s important to know what to get rid of as much as it is to add to your collection.” Grace also believed that most of her successful teaching strategies have come from other colleagues and sharing ideas with one another brought an important level of consistency and background knowledge when planning for instruction. She reflected on a recent experience she had regarding sharing a visual support within her Edmodo grade level math group. Grace revealed,

When I realized my students needed visual supports a math specialist contacted me, you know... and said, “Hey! That’s great but you need to look at this part of it, you need to look at this part of it, and maybe... you know I don’t think it’s showing what you want.” Even those instructional materials do need some tweeking sometimes and you can’t be, um... you can’t think that people are bashing what you did. You have to take the constructive criticism.

Having experienced constructive criticism on a strategy she posted, Grace most definitely understood why other teachers might be hesitant to share strategies and ideas within their own Edmodo grade level math group. She explained how some teachers might be afraid to share something for fear of criticism or that they might not receive the proper credit and recognition for a strategy or idea they created on their own.

Lynn, in her role as a Title I math teacher, believed sharing ideas was very helpful because she works with students throughout grades kindergarten through fifth grade and has six different curriculum to teach. She recognized there is much instructional material available

already and so networking with one another and sharing ideas was important. For example, Lynn stated,

Being able to take one strategy and scaffold it so that it meets the needs of students in grades kindergarten through five, specifically with problem solving activities. Being able to take one question or one problem solving activity and adjust it so that it meets the standards of every grade level and so that it helps our struggling learners.

In Lynn's particular school there were a number of students who struggle to understand challenging math concepts. Sharing not only strategies and ideas but also teaching philosophies was beneficial to her students who struggled academically.

Catherine admitted to sharing more than most of her colleagues, whether it be through her work as an Edmodo Ambassador and Edmodo Luminary or on her school webpage. While laughing, Catherine stated, "I share a lot, probably more than they want me to. I share my webpage freely with anybody that, that is interested. It really works good for primary. It's geared for second." Catherine explained how finding a best practice or a different approach to teaching benefits her students which led to them achieving academic success. She elaborated how she shared information through Edmodo's spotlight program where she can upload resources and then tag them with grade levels for easy access.

Mandy and Michelle expressed passion towards sharing of instructional resources and the opportunity for continued learning among educators. Mandy mentioned that sharing resources acts as a springboard for new ideas that eventually creates a sense of community. She stated,

A lot of times I will see other people's ideas and that will spark an idea in my head and then I can go create something or tweek it just a bit too. And I think that brings people together and creates unity.

Michelle cited specific examples of how she shared resources and provided reflection on why she felt sharing among educators was critically important. She first discussed how she gathered ideas at a teaching excellence expo then shared her learning in which she made additional connections to help build a professional learning community. Overall, Michelle considered her level of sharing as moderate. Michelle referred frequently to sharing resources as give and take, which was very important to her. She recognized that one of the best resources educators have are one another so she frequently encouraged others to share and also modeled the practice herself. Modeling also extends to what she would expect to see in her students. Michelle asked an insightful rhetorical question during her interview, “Why wouldn’t teachers do what we want our students to do?” She believed that we want our students to share and collaborate so it was important that teachers model what that looks like for them. Michelle did not expect others to give her strategies and ideas and she not be willing to reciprocate. She commented,

I rely on it every day for all functioning but I share what I can and gather what I can because I do feel that’s important as a professional. So that sharing and collaboration is only going to make me better at doing the job I need to do and so I can’t just take, take, take. That’s why I actively participate because I feel like I owe it back.

Nicole and Faith viewed sharing resources and ideas as helpful to their own planning as well as that of their colleagues. Time is limited and sharing resources definitely assisted them with planning for instruction, although Nicole did mention that she wished teachers shared more on Edmodo. Nicole stated, “I think people share resources occasionally. I know it could be used more. It is nice when somebody shares like this is a game I made. It kind of helps out to share the workload.” Both Nicole and Faith also recognized that the resources shared on Edmodo are

always there, readily available. Faith believed sharing resources not only helps with the workload but also ultimately helps the students. She revealed,

Well, just to learn more strategies on how to teach the children more effectively and being able to share those strategies with my colleagues. Like I said, we don't have enough time in the day to learn all the strategies. People have great ideas and now we need to share those ideas for the kids.

Using Edmodo as a communication tool. Edmodo, when used as a communication tool, affords teachers the opportunity to communicate with colleagues outside of their own school. Teachers can post questions and responses as well as upload and share digital instructional resources. Seven research participants mentioned using Edmodo for teacher communication during their semi-structured interviews. This theme related closely to communication with outside staff, hence it should be interpreted with significance to this study.

Catherine, who serves not only as a Title I reading teacher but also as an Edmodo Ambassador and Edmodo Luminary, communicated frequently using Edmodo. Her use of Edmodo as a communication tool with teachers was extensive and spans globally. For example, Catherine has made global connections for postcard exchanges related to a Flat Stanley project. Catherine referred to the impact Edmodo has on communication among teachers as “huge.” She stated, “The Edmodo Ambassadors program, there’s almost a thousand of us there where we connect and share ideas. I feel like I’m more globally connected because of the online experience.” Her work as both an Edmodo Ambassador and as an Edmodo Luminary allowed her to share the great attributes of Edmodo that are available for teacher use as well as connect with other teachers through the Edmodo program. Her extensive work within Edmodo inspired

her to create a second grade group of just under 400 members within her school division, as a means to share content and ideas.

Mary, like Catherine, communicated extensively with teachers within Edmodo; however, her communication is limited locally to teachers within her school division. Mary's initial reason for joining Edmodo was so that she could provide coaching support from a distance to elementary schools and teachers whom she would not normally be able to communicate with in person. Mary also found benefit in communicating with teachers on Edmodo where discussions and specific questions regarding math concepts were addressed, which often ended up challenging her thinking on elementary math. Mary participated weekly within both the third and fifth grade elementary math groups and also helped to monitor other grade levels, Kindergarten through fifth grade. She was particularly impressed with the number of elementary teachers who used her department's Edmodo posts to help support their mathematics teaching. As stated previously, Mary used Edmodo weekly to share updates on both third grade and fifth grade math. She explained her key role in reinforcing her district's instructional model for elementary math,

You need to be doing basic fact review, here's an idea. You need to be doing number talks, here's an idea. You need to be doing spiral review or cumulative review, here's an idea that you can use and then here's our instructional unit. Here's the big picture. Um but it also helps because we've had teachers sharing materials so then I get new ideas and sometimes I'm able to take what the teachers share and use them right as they are and sometimes I will take what teachers share and tweak them and then put them out to the whole county on our internal curriculum framework. So it's really, really it's been great.

Elementary teachers such as Grace, Nicole, and Truly admitted that they have communicated and shared electronically through Edmodo within a variety of content groups, including math and language arts. Most of the communication within Edmodo was centered on pacing guides and instructional enhancements to the curriculum. Grace revealed,

You know, somebody will post ‘Hey I went to this link that was on the pacing guide, it didn’t work. Can someone help?’ You know that kind of thing. So even it’s a trouble-shooting thing that sometimes helps the collaboration with other teachers.

Nicole credited her division’s math department with doing an excellent job of communicating specific activities and number talks that elementary teachers like herself should be implementing. Nicole also mentioned a particular time in which she communicated with teachers at another school as part of a professional learning community. She commented,

There was one time where we did a PLC with some teachers from another school and it gave us a way for that first grade team and our first grade team to. It was about something about brain research, a way for us to share ideas with each other.

Truly admitted that she does communicate with other teachers through Edmodo but found the process somewhat frustrating, as the names of math department staff members were not listed when responding to teacher questions or comments. She stated, “Yes, and they don’t list their names either and that is frustrating. They just list the math department. I really never know. Okay, again, that’s a trust issue.” Truly was encouraged that there were more teachers willing to communicate through Edmodo than there were a year ago. Because of this initial communication, Truly felt willing to reach out to all of her division’s first grade Edmodo groups in hopes of further communicating and collaborating with teachers.

Title I elementary math coaches Lynn and Mandy also viewed using Edmodo to communicate with teachers and division math department staff as beneficial. Lynn found it helpful that she could ask a question on Edmodo and have a response from someone usually within a couple of hours. Lynn admitted, “For me it has been very helpful because I know that other people are teaching the same content and I know I’m not the only one with students who are struggling.” Mandy took a more personal approach to her own communication with other educators on Edmodo. She described her participation as learning and becoming further exposed to other educational opportunities. Mandy mentioned,

I think that in participating in Edmodo I’ve um learned about different avenues in education um certainly by becoming the Title I math teacher this year I’m now considering going back to get my math endorsement and I think being able to communicate with people electronically and online has allowed me to consider that option.

Research Question Responses

The overall summaries of each research participant’s statements during both the semi-structured interviews and focus group interviews were used as the basis to address the research questions which anchored this study. Each research question was discussed based on a review of the data collection and analysis. Direct quotations from research participant statements also helped answer each research question.

Research question 1. How do teachers describe their lived experience of participating in Edmodo as a community of practice? Throughout the semi-structured and focus group interviews several research participants discussed the benefits of sharing pacing guidelines and instructional resources and the need for further sharing to take place. Four research participants

also mentioned a lack of professional development being offered through their Edmodo groups, which could be considered as new learning opportunities.

With regards to learning new strategies and ideas through sharing, nine out of eleven research participants made mention of such within their semi-structured interviews. This theme also carried over into the focus group interview. Grace and Savannah both mentioned several times the importance of sharing resources. They also both believed they were either learning or helping their colleagues learn through this process. Grace stated, “Sharing ideas with one another brings an important level of consistency and background knowledge when planning for instruction.” Savannah often shared through her own Edmodo library, which she then shared with grade level teachers at her school. Savannah explained,

So anything that the county sends out I have put in a grade level folder in Edmodo and each grade level folder has materials that the county sends out so when I go meet with grade levels I am able to quickly pull up the folder and share with them.

Pam and Truly reflected on the level of sharing taking place within their Edmodo grade level math groups both personally as well as observing others. Truly admitted that for her own learning, her math group “is a place to tread water or to test the waters” in an environment in which she does not fully feel completely comfortable sharing yet. Pam believed that sharing is beneficial and that she herself has benefitted greatly from receiving new and fun ideas to share with her team. However, she classified herself as an observer and a taker rather than a sharer of resources herself.

Other research participants mentioned that they wish more teachers would outwardly share. Grace amazed her fellow research participants during the focus group interview by stating that many may be hesitant to share resources for fear of being embarrassed by curriculum

specialists who provide constructive criticism. She also revealed that at her own school there were a few teachers who do not want to share their resources due to their own competitive nature. These teachers wanted to be considered exemplary, and they believed that if they shared, they were helping others to also become exemplary; therefore, what set them apart from other exemplary teachers? The researcher and fellow research participants in the focus group interview listened but did not necessarily all agree with Grace's perspective. The consensus of the group was that one of the ways teachers could be considered exemplary is by developing their own sense of leadership. Sharing resources and helping their colleagues were two ways in which teachers exhibited leadership characteristics.

A lack of professional development opportunities through Edmodo was an issue with several research participants, especially Nicole and Mandy. Nicole stated, "I don't really see a whole lot of professional development stuff coming through our Edmodo groups. It's more just information that needs to be broadcast to us." Mandy had almost the same sentiment as Nicole. Mandy was brutally honest when asked about what types of professional development she received through her Edmodo grade level math group. Mandy admitted, "I wouldn't say very much to be honest with you. Most of our professional development is live and face to face. Not much of it is happening through Edmodo or anything like that."

Research question 2. How does the presence of external factors influence elementary teachers' beliefs about participating in an online professional learning network as a community of practice? One identified theme, communication and networking with outside staff without regard for time or location, was an external factor which possibly influenced elementary teachers' beliefs about participating in an online professional learning network as a community of practice. Nearly every participant discussed the importance of being able to communicate

with their colleagues without regard for specific time or location. Having flexibility, whether it be through location or time, was mentioned by the research subjects as integral to their overall communication within their Edmodo math grade level groups. Family commitments were also mentioned as external factors which might inhibit communication. However, being able to communicate without regard for time or location allowed teachers the flexibility to communicate either later at night or earlier in the morning, at more flexible times.

Teachers with family responsibilities such as Grace and Mandy described the convenience of communicating online. Both of them discussed the importance of being able to communicate at all hours of the day, especially late at night or early in the morning. Having flexibility through an online format also afforded teachers an opportunity to manage their own commitments along with the ever increasing demands placed on them. Being able to transform ones' personal time allowed more accessibility for family commitments.

Being able to communicate and network with outside staff without regard for time or location also positively impacted the ease in which teachers performed their work. Mary discussed being able to communicate with teachers early in the morning through her weekly posts. Teachers could view her posts any time of day and reach out to her later on for clarification or questions. Catherine described her communication with a colleague across the state and how they are working on an Edmodo project together which transcended their ability to meet face to face or at a set time. Truly saw the benefit of being able to refer back to postings within her Edmodo grade level math group over time. She viewed it as a continual professional development opportunity. Michelle enjoyed that she can receive information instantaneously without having to wait for a teacher to send her an email or through the pony mail system. Finally, Pam summarized the convenience of communicating without regard for time or location

as this, “We can, I can get to it at school we can access it at home. If I have any questions I know that that’s a place I can go to right away.”

Research question 3. How do elementary teachers describe their experience of teaching more rigorous mathematics instruction both before and after participating in Edmodo grade level math groups as a community of practice? One theme revealed during semi-structured interviews, sharing pacing guidelines and instructional resources, was integral to how elementary teachers described their experience of teaching more rigorous mathematics instruction both before and after participating in Edmodo grade level math groups as a community of practice. Several research participants, such as Mary, Mandy, Lynn, Faith, and Pam revealed how sharing resources and maintaining common pacing for instruction impacted the teaching of rigorous math instruction. Mary commented, “And our weekly posts are more like here’s the topic, here’s the student misconceptions, here’s their mistake and where they tend to go wrong. Here’s the big idea, here’s what you are really trying to get across.” Mary’s work was the catalyst in helping prepare teachers for the teaching of more rigorous math instruction in which she has placed pacing guidelines and suggested strategies within the Edmodo grade level math groups.

Title I math teachers Mandy and Lynn recognized that one of their primary responsibilities is to help teachers follow the pacing guides, ask clarifying questions to Mary and other math coaches, and share strategies and instructional information. These activities ultimately assisted not only themselves but also teachers with meeting the needs of struggling learners as they taught more rigorous math instruction. Lynn explained, “Being able to take one question or one problem solving activity and adjust it so that it meets the standards of every grade level and so that it helps our struggling learners.” Teachers at their schools often looked to

them for guidance in how to best differentiate their instruction and teach more rigorous standards.

As teachers, both Faith and Pam understood that having more strategies helped them teach their students more effectively and also helped their teams with planning for more rigorous math instruction. Faith stated, “Well, just to learn more strategies on how to teach the children more effectively and being able to share those strategies with my colleagues. People have great ideas and now we need to share those ideas for the kids.” Pam’s approach was geared more towards benefitting her grade level team with regards to pacing and sharing instructional ideas. Pam admitted,

I think it’s been beneficial to come to team, our team meetings and have new, fun ideas to share, new strategies to teach children. I think there’s that openness of being a learner as well and then being able to share with others.

Research question 4. How do elementary teachers view the future of their profession based on their experience of participating in Edmodo grade level math groups as a community of practice? All five research subjects who participated in the focus group interview responded favorably to the future of their profession based on their experience of participating in the Edmodo grade level math groups as a community of practice. However, they did share a variety of thoughts and reflections on the issue. Grace, in particular, presented her reflection in which most, especially Mary, seemed to agree. Grace stated,

I think it, my perception of the teaching profession is, is all encompassing now. It’s not just me and my kids in my room, following a plan. That it’s everybody’s in this, doing the same thing, having the same struggles, having the same successes.

Mary responded to Grace’s comment,

It's like you said earlier. We are all in it for the kids and that's the tricky part about getting new teachers just to see that it's not all about what's going on in your room and if you share that you're actually more of a leader.

This notion of having the same struggles and successes also carried over into the thoughts of both Savannah and Mandy. According to both of them, participating in their Edmodo math grade level groups as a community of practice provided a sense of continuity and cohesiveness as well as united the school division. Savannah mentioned, "I think when you're talking about the same thing and you've looked at the same thing it provides some sense of continuity." Mandy viewed the continuity and cohesiveness that participating in Edmodo as uniting because teachers would be able to look back in the future and reflect on how it has evolved and ponder as to what technology will arrive next. Mary guaranteed that she did her part to ensure continuity and cohesiveness within the Edmodo grade level math groups. Her work was to ensure that every teacher at every school received the same information and messages concerning math pacing and instructional expectations. Mary admitted,

I can't guarantee every school is reading it and I can't guarantee they're doing it but I can guarantee they're getting the same message between Edmodo and then this CNet resource group. I can guarantee everybody has access to the same materials. What they chose to do with it, I still can't guarantee it's happening, but I know they have the opportunity.

Summary

The research participants shared a variety of experiences within their own Edmodo grade level math groups which gave a perspective of how they are using it as a community of practice. Stories such as how they communicated with others outside of their building, how they shared electronic resources and strategies, and how the convenience of communicating online with

others educators emerged. The research participants also held pacing for instruction and having the ability to communicate within Edmodo in high regard when discussing how their participation positively influenced their own sense of learning and sense of community. While these themes illustrated how teachers described some of the more positive attributes of participating in their Edmodo grade level math groups, a few considerations for future study and development emerged which warrant discussion.

Several research participants described their participation in their Edmodo grade level math groups as a community of practice as being somewhat limited. They viewed much of the participation in general as taking information such as pacing guides and suggested lessons provided by their central office curriculum specialists rather than active, engaging participation among a majority of participants. A possible reason discussed during the semi-structured and focus group interview for this disconnect was a lack of confidence in sharing their own teacher-created resources. A second consideration the research participants mentioned was the perception of an overall lack of professional development offerings provided through the actual Edmodo grade level math groups. Both of these considerations were discussed further in chapter five.

CHAPTER FIVE: CONCLUSION

Overview

The purpose of this transcendental phenomenological research study was to describe the shared, lived experiences of elementary teachers who participated in their Edmodo grade level mathematics groups as a community of practice. Four research questions helped to describe elementary teachers' lived experiences of participating in Edmodo as a community of practice, including how the presence of external factors influenced their beliefs, how they described their experience of teaching more rigorous mathematics instruction, and how they viewed the future of their profession. Chapter five provides a discussion and summary of the research findings, delimitations and limitations discovered through the research study, implications for stakeholders, and recommendations for future research studies.

Summary of Findings

When describing the lived experience of elementary teachers who participated in an online professional learning network, Edmodo grade level math groups, as a community of practice, three central themes emerged from the data analysis. These themes included communication and networking with outside staff without regard for time or location, sharing pacing guidelines and instructional resources, and using Edmodo as a communication tool. Two of these themes, communication and networking with outside staff without regard for time or location and using Edmodo as a communication tool dealt specifically with how elementary teachers used Edmodo to communicate with not only their grade level colleagues but also elementary educators throughout the school division and beyond, without the limitations of specific timeframes or proximity to location.

Despite being able to communicate frequently with other elementary teachers within their grade level math group without regard for specific time or location, several research participants admitted that they perceived an overall lack of collaboration within their groups. A few research participants provided their opinion as to why this perceived lack of collaboration among elementary teachers existed. A fear of being perceived as incompetent or lacking in expertise among the minds of colleagues as well as school and central office administrators was described by a few research participants as one possible factor. One research participant mentioned a second possible reason which may have contributed to an overall lack of collaboration within the Edmodo grade level math groups. At her particular school there were teachers who were competitive in nature and wanted to be rated as exemplary teachers, based on their division's teacher evaluation system. There existed a perceived mindset among these teachers that if they shared instructional resources with others they were therefore assisting their colleagues with becoming exemplary teachers. In her viewpoint, what then, distinguished these teachers as exemplary above everyone else? When the research participant revealed this perception during the focus group interview there was a general consensus of disagreement among the other participants. Her comments also took the researcher by surprise. The other participants within the focus group believed that collaborating and sharing among elementary teachers actually helped grow teachers' leadership capacity, which in turn, led them towards potentially being identified as exemplary within the teacher evaluation system. Despite this disagreement it is worth noting that this perceived mindset did exist and there may be other elementary teachers who held similar beliefs which might have impacted the level of overall collaboration within the Edmodo grade level math groups. Considering potential reasons why elementary teachers might

be reluctant to collaborate within their Edmodo grade level math groups would be beneficial to school districts when planning for its future use as a community of practice.

Research Question 1

How do teachers describe their lived experience of participating in Edmodo as a community of practice? Elementary teachers who participated in their Edmodo grade level math groups as a community of practice did so when they participated in common specialized activities, depended on one another for learning new instructional strategies and pacing suggestions, and assisted each other in enhancing the education profession (Lave & Wenger, 1991; Shaffer & Amundsen, 1993). All three central themes identified from the data analysis related to how teachers described their lived experience of participating in Edmodo as a community of practice.

The perceived benefits of sharing resources and learning new strategies among one another was mentioned by a majority of the research participants. Multiple participants also discussed the desire and need for further sharing to occur within their Edmodo grade level math groups. In addition to the need for an additional sharing of resources and instructional strategies several participants also mentioned an overall lack of professional development opportunities.

Increased sharing among participants within the Edmodo grade level math groups and increased professional development opportunities might further strengthen the group as a community of practice. As mentioned by a few of the research participants, some teachers might be hesitant to share their instructional resources for fear of being embarrassed either by colleagues for a perceived lack of expertise or by central office curriculum specialists who might provide unwanted constructive criticism. In addition, some of the research participants readily admitted that they did not experience much professional development through their Edmodo

grade level math groups. They claimed to receive information from central office that is needed to be broadcast to them, but not any new professional development or learning opportunities.

One of the most surprising findings of this research study was revealed by Grace during the focus group interview. She stated that one of the key reasons why some teachers at her particular school were hesitant to share their instructional resources among others within their Edmodo grade level group centered primarily on the nature of competition. According to Grace, some of her colleagues believed that if they share with others, they are then helping them become classified as exemplary teachers. Because they viewed their teacher evaluation system as competitive, if they help someone else, then they might be considered only proficient by their school administrators when compared against those whom they offered assistance and support.

Research Question 2

How does the presence of external factors influence elementary teachers' beliefs about participating in an online professional learning network as a community of practice? Communication and networking with outside staff without regard for time or location was identified as a theme from the research and was an external factor which might have influenced elementary teachers' beliefs about participating in an online professional learning network as a community of practice. The importance of being able to communicate with colleagues without regard for time or location was paramount, given that nine out of eleven participants discussed its importance during their semi-structured interview. Having the flexibility either through time or location to participate in their Edmodo grade level math group at their choosing was mentioned by each of the nine participants. A key external factor, a lack of personal time caused by children and family commitments, was discussed as possibly inhibiting communication within an online professional learning network. However, having the flexibility to communicate at any

time of day, including either late at night or early in the morning, allowed teachers increased opportunities to participate in their Edmodo grade level math groups as a community of practice.

An additional external factor, demands placed on teachers' workloads, was also positively impacted by being able to communicate without regard for time or location. The flexibility of an online format provided teachers with the ability to manage not only their own personal schedule but also their work demands. Being able to communicate and network with outside staff without regard for time or location allowed teachers to perform their work with greater ease, as they could post at any time of day or ask clarifying questions to others as it related to their work. Further, the ability to seek out and receive information from educators outside their building could also be seen as a continuous professional development opportunity. However, none of the research participants made this connection during their semi-structured interviews. They described a definite benefit of being able to communicate and network with outside staff without regard for time or location but did not seem to connect it to an opportunity for professional development. In fact, they described their participation in their Edmodo grade level math groups as lacking overall in professional development.

Research Question 3

How do elementary teachers describe their experience of teaching more rigorous mathematics instruction both before and after participating in Edmodo grade level math groups as a community of practice? Sharing pacing guidelines and instructional resources was an identified theme from the data analysis that related to how elementary teachers described their experience of teaching more rigorous mathematics instruction both before and after participating in their Edmodo grade level math groups as a community of practice. This theme was also discussed by almost every research participant. The research participants described the types of

resources shared beyond that of pacing guides as visual supports, instructional techniques, and teaching philosophies. Most participants acknowledged that they did benefit from receiving strategies from others which in turn helped them teach more challenging math instructional content. The Edmodo grade level math groups served as a forum for them to receive some of these instructional strategies. With regards to the sharing of instructional resources, several research participants discussed this aspect as an area which could be developed further within their Edmodo grade level math groups.

Specifically, pacing for instruction was a consideration that many research participants identified as being critical to their participation in their Edmodo grade level math groups as a community of practice. Appropriate pacing was an essential component that connected to student achievement and one that was discussed at length by seven out of eleven research participants. Each week a team of elementary math coaches posted pacing suggestions on each of the Edmodo grade level math groups. The research participants discussed these weekly pacing guides as the primary reason they actively participated in their Edmodo grade level math group each week. One of the participants, Mary, served as an elementary math coach and was responsible for posting a portion of these pacing guides each week. She considered it her responsibility to provide a focus of essential ideas for each instructional unit, as she realized that teachers' time is limited and she wanted to assist them with planning for effective student math instruction. Following the math pacing guides each week led several of the research participants to ask clarifying questions within the Edmodo math grade level groups and for some of them to communicate further with other teachers within their school. One realization from having the pacing guides posted each week was that it allowed all teachers, regardless of school location, to receive the same information as a means to keep everyone on track. However, many of the

research participants admitted that if it were not for the pacing guides they might not participate in their Edmodo grade level group to the degree that they presently did. They also described their overall grade level group's involvement as more one-sided than collaborative because many teachers did not share instructional strategies or discuss beyond the information which pertained to the weekly pacing guides.

Research Question 4

How do elementary teachers view the future of their profession based on their experience of participating in Edmodo grade level math groups as a community of practice? Every research participant who participated in the focus group interview shared a favorable impression regarding the future of the education progression based on their experience of participating in an Edmodo grade level math group as a community of practice. Despite sharing an overall favorable impression the majority of research participants did share several different thoughts. Sharing similar struggles and successes regarding instruction and meeting the needs of their students was one consideration of two research participants. Further, participation in their Edmodo grade level math groups as a community of practice provided not only a sense of continuity and cohesiveness but also served to help unite elementary teachers within their school division. This continuity and cohesiveness served to unite teachers as they reflected on how Edmodo's usage within the grade level groups has evolved and considered which kinds of new technology would emerge to the forefront. In addition, elementary teachers who participated in their Edmodo grade level math groups as a community of practice did receive the same information and messages concerning grade level math pacing and instructional expectations.

Discussion

The vast majority of research regarding online professional learning networks, such as Edmodo, indicated that elementary teachers chose to participate for a number of reasons, including convenience of communication, sense of community, sense of professional dialogue, leveraging online resources, teaching content, and professional development (Cordell, et al., 2012; Hsu & Wang, 2011; LaGarde & Whitehead, 2012; Miller, 2007; Saville, 2013; Thompson, Kitchie & Gagnon, 2011; Tsai, et al., 2010; Wang, et al., 2013). The results from this research study indicated that elementary teachers found benefit from participating in their Edmodo grade level math groups as a community of practice due to their ability to use Edmodo to communicate and network with other teachers outside of their building without regard for time or location, to share instructional resources and ideas, and to receive suggestions regarding pacing for mathematics instruction. Several research participants also expressed concerns regarding a lack of overall collaboration among teachers and an overall lack of professional development for teachers offered through Edmodo.

Social Constructivism

Social constructivism, as based upon Vygotsky's sociocultural theory, Bruner's cognitive learning theory and Piaget's theory of cognitive development, explains how collaboration and effective communication, as social processes, help encourage group socialization which leads to the construct and transfer of knowledge (Bruner, 1966; Piaget, 1971; Vygotsky, 1978). Elementary teachers who participated in an online professional learning network as a community of practice used language, social interaction, collaboration, and communication to form the foundation of their knowledge and understanding. Edmodo, and other online professional

learning networks, provided additional opportunities for constructing knowledge and understanding among individuals who are actively engaged within a social setting (Piaget, 1971). For this research study, there were numerous opportunities for elementary teachers to utilize language, social interaction, and communication to construct knowledge of instructional strategies and resources. However, a perceived overall lack of collaboration among participants within each Edmodo grade level math group served as a possible deterrent towards further knowledge construct and understanding.

Community of Practice Theory

Lave and Wenger's (1991) community of practice theory explains how significant learning takes place among individuals who are actively involved in learning communities anchored by common interests and similar experiences. Participants within a community of practice will initially observe and complete minor, low risk, activities until they establish trust and understanding with their colleagues (Lave & Wenger, 1991). They will also purposefully seek out individuals who have more specific knowledge or experiences who will then provide assistance towards improving their craft or enhance their instructional repertoire (Keung, 2009; Moore, 2003). Wenger (1998) expanded upon this initial research and included aspects of Bandura's social theory of learning (1977) by dividing the concept of learning into four components: community (learning by belonging), practice (learning by doing), identity (learning as becoming) and meaning (learning through experience). Further, Wenger (1996) identified three elements of existence and seven principles of learning that take place within a community of practice. The community consists of its members who collaborate, communicate, and build sustainable relationships based on mutual interests. It is through these actions that help unite participants and develop the community of practice's sense of purpose and cohesiveness (Lave &

Wenger, 1991; Wenger, 1998, 2000, 2000b). An online professional learning network that functioned as a community of practice, such as the one contained within this research study, consisted of participants with a common interest who used technology for learning, communication, and collaboration, without regard for specific time, setting, or location (Preece, 2010; Warschauer, 2003). It also enabled participants to collaborate on lesson planning, pacing, and best instructional practices without spatial and time restrictions. Throughout this research study there were several stories shared by participants which supported the community of practice theory through their use of their Edmodo grade level math group as a tool to communicate with others outside of their building without regard for time and location and to share pacing suggestions and instructional resources.

Adult Learning Theories

Mezirow (1991, 1995) and Knowles (1984) provide theories on how adults learn best and how their learning experiences might need to be structured for maximum effectiveness.

Mezirow (1991, 1995) developed the transformative theory of adult learning which explains how adults create meaning of their lived experiences. Mezirow described the goal of transformative adult learning as assisting adult learners in developing an awareness of their learning experiences to include why they experience certain conditions such as perceiving, thinking, and judging and to create actions reflected upon their thoughts and perceptions (Mezirow, 1991).

Knowles' (1984) four principles of andragogy, which supports the notion that learning should encourage a high degree of adult involvement, relate to adult learners' lived experiences, are relevant and potentially impact adult learners' lives, and are problem-centered. They specifically relate to elementary teachers' participation in online professional learning networks as a community of practice. One of the key reasons elementary teachers chose to participate in

an online professional learning network as a community of practice was to enhance their learning and professional development opportunities through improved teaching of subject matter content and increased understanding of instructional strategies (Beach, 2012; Bull & Buechler, 1996; Clary & Wandersee, 2009; Hsu & Wang, 2011; Hung, 2002; LaGarde & Whitehead, 2012; Miller, 2007; Perez, 2012; Thompson, Kitchie, & Gagnon, 2011; Tsai, Laffey & Hanuscin, 2010; Wang, Hsu, & Green, 2013). With regards to this research study, elementary teachers were involved in the planning of their instruction through sharing and collaboration. Through their stories they showed keen interest in pacing suggestions and particular learning experiences in which they viewed as relevant to their students and provided a high level of impact on their classroom instruction.

Social Learning Theory

Bandura (1977) describes social learning as a process that is created through participation and observational learning within one's environment. He explains three key concepts that encompass his social learning theory: people learn through observation, a person's mental state is essential for learning to take place, and learning does not always constitute a change in behavior (Bandura, 1977). Individuals, such as elementary teachers who participated in an online professional learning network as a community of practice, learned based on their social experiences which in turn influenced their behavior. Information was developed through social experiences such as communication and collaboration (Bandura, 1977; Lave & Wenger, 1991). Teachers involved in a community of practice, such as through their active participation in Edmodo grade level math groups, were often committed to not only their individual learning but also contributing to the learning of other participants through sharing information, collaboration, and frequent communication. Ongoing, meaningful social interaction among participants was a

necessity in order for a community of practice to sustain itself (Lave & Wenger, 1991). These social interactions, along with peripheral benefits such as increased pride and self-efficacy, were examples of intrinsic reinforcement and were critical to a person's overall mental state as it relates to social learning (Bandura, 1984).

With regards to this research study, according to Bandura (1977), information was developed through social interactions such as communication and collaboration. Almost every research participant provided a detailed description of how she used her Edmodo grade level math group to communicate and network with others outside of her building, without regard for time or location. While collaboration regarding instructional strategies was described by several participants as a relevant weakness within their Edmodo grade math group, overall communication was a definite strength.

Professional Learning Networks

Online professional learning networks such as Edmodo, Google +, Classroom 2.0, Twitter and Ning have been established primarily to share related information and to increase professional development for the purpose of better instructing students (Davis, 2012). Receiving knowledge and instructional strategies from existing participants, establishing new professional connections, creating useful strategies based upon someone else's original idea, and contributing to the professional growth of colleagues were valid reasons that influenced teachers to actively participate in an online professional learning network such as Edmodo (LaGarde & Whitehead, 2012). Their existence created meaningful opportunities for educators with similar interests to collaborate without the constraints of space, location, or time (Cordell, et al., 2012). In addition, posting online content and sharing artifacts such as instructional resources and lesson plans enabled teachers to develop their own personalized learning network which might further

enhance their own professional growth (Utecht, 2010). Within this research study the participants described the benefit of participating within an online professional learning network, their Edmodo grade level math groups, as a means of sharing instructional resources and pacing for instruction. On numerous occasions they also described the immense importance of having the flexibility to communicate with other elementary teachers throughout their school division without regard for time or location.

Communities of Practice

Communities of practice are social structures created for a specific purpose whose focus is on creating new knowledge and understanding for its participants (Snyder, et al., 2003). Teachers who participated in an online professional learning network, such as Edmodo, in order to enhance the quality of their work as professionals through collaboration and shared practices functioned as a community of practice (Wenger, 1997). Typically, every participant was committed to the mission of the group and maintained an understanding of the community of practice's purpose, which in turn established accountability for its members (Wenger, 2000b). The knowledge that was created within the community of practice was often implicit and beyond that which could be directly expressed by expert practitioners (Wenger, 1997). This knowledge might often be used in conjunction with other types, used to further enhance learning and professional growth.

Teachers participating within a community of practice often had an understanding of student learning, sense of community, and sense of professional growth, all of which were factors that encouraged them to actively participate within the group and collaborate to improve not only their own work but that of their colleagues (Brouwer, et al., 2012; De Jong, 2012; Eller, 2012; Hur & Brush, 2009; I-Chun, 2012; Khalid, Joyes, Ellison, & Karim, 2013; Lane, 2012;

Marken & Dickinson, 2013; Tsai, 2012; Tsai, et al., 2010). The participants within this research study were all elementary teachers or an elementary math coach who described how their participation within their Edmodo grade level math groups enhanced their understanding of instructional strategies and pacing for instruction. This knowledge helped to enhance student learning and their own sense of professional growth. One key aspect of communities of practice, that of sense of community, might be further developed with increased collaboration among participants within each Edmodo grade level math group. Several of the research participants discussed an overall lack of collaboration among their colleagues. Reasons for a lack of collaboration revealed through the research participants' stories indicated a possible fear of constructive criticism, a possible fear of being considered not knowledgeable by their school or central office administrators, or a possible fear of not being rated as an overall exemplary teacher.

Web-based Social Science Software

There exists a multitude of web-based social science software programs such as Twitter, Classroom 2.0, Google +, LearnCentral, and Edmodo which are readily accessible for teachers. These programs might be used as a forum for communities of practice in that they serve to enhance not only collaboration among teachers but also professional development (Kupler, 2011). Educators who use Twitter might pose a particular question regarding a topic and hence receive a list of resources posted from followers. Using the hashtag #edchat allows Twitter users to receive almost instantaneously a plethora of relevant information and content from thousands of fellow educators (Whitby, 2010). Hargadon's Classroom 2.0 (2010) provides educators with a means to enhance their personal learning network through the use of Web 2.0 technologies in the classroom. Google + provides a platform in which to collaborate and share with an ability to

simultaneously link users with multiple Google applications to include Google Calendar and Google Chrome (Anderson & Still, 2011). Edmodo is an online professional learning network in which educators have the option of creating their own personalized professional learning network through participation in up to 12 different online communities, most of which are subject or content specific (Dobler, 2012; Edmodo, 2012). The participants in this research study described their participation in their Edmodo grade level math groups as a community of practice. Edmodo was a blended learning platform embraced by the school division that is the site for this research study. All elementary teachers had access to Edmodo and used it as a means to receive pacing suggestions and share electronic instructional resources. Based on the descriptions generated by each research participant none of them had any particular issues with using Edmodo as an online professional learning network or maneuvering through the platform itself.

Implications

This particular research study, similar to others within the body of research on online professional learning networks and communities of practice, served to describe how elementary teachers viewed their participation within a specific professional learning network, Edmodo, as a community of practice. The school district created grade level subject area groups within Edmodo to assist teachers with planning for instruction and sharing pacing suggestions. Elementary teachers were strongly encouraged by their school and district administrators to join and actively participate within their grade level math groups. Providing an avenue for elementary teachers to share their lived experiences within their groups could benefit school districts who seek input as to how the teachers perceive their groups as functioning as a community of practice. Reading the research participants' stories and reviewing their thoughts

regarding how they utilized their Edmodo grade level math groups might assist the school district with its future planning purposes. For example, central office administrators and curriculum specialists might use these results to decide whether to replicate the practice of creating Edmodo grade level groups within other content areas such as English, history, or science. School-based administrators should be made aware of this study's findings as they continually engage in conversation with their teachers to increase their collaboration with one another regarding pacing guidelines and instructional best practices. Continuing to work with teachers in building trust and increasing confidence levels to encourage an increased level of collaboration within the Edmodo grade level math groups might help further develop their participation as a community of practice. Researching the specific impact collaboration within Edmodo grade level math groups has on teacher self-efficacy is a possible area of future study.

In addition, increasing the use of Edmodo as a direct professional development component, such as broadcasting the use of math instructional videos in which teachers in the school district model a variety of math instructional techniques, might also enhance the perception that Edmodo is useful for professional development. This consideration alone is one reason why it is paramount that curriculum specialists and instructional coaches be made aware of the results from this research study. They are the ones who would be responsible to work closely with school-based administrators in crafting math instructional videos for use within the Edmodo grade level groups. Since some of the research participants felt that Edmodo lacked in professional development, studying the impact that such videos have on teacher's perception of professional development might be worthy of further research. The use of mathematics teaching videos as professional development tools also connects to one of the central themes of this research study, that of sharing pacing guidelines and instructional resources. Further, additional

school districts might benefit from reading the research participants' stories and reviewing their perceptions when deciding whether to pursue using Edmodo, or any similar online professional learning network, for its teachers as a forum for communication and collaboration. Using Edmodo as a communication tool was considered significant by the majority of participants. Understanding how to take Edmodo's use as a communication tool and expound upon it to that of a collaboration tool will be challenging but necessary to enhance future online communities of practice.

Delimitations and Limitations

Delimitations are aspects of a research study which relate to specific time, location or participation criteria (Bloomberg & Volpe, 2012). The delimitations of this research study were related to the research design which focused on the shared experiences elementary teachers have when participating in an online professional learning network as a community of practice. This research study utilized a purposeful, criterion sampling strategy in which participants were selected based on the frequency of their postings in their assigned Edmodo grade level math group (Creswell, 2013; Polkinghorne, 1989). Research subjects were elementary teachers who volunteered to participate in this study. The majority of the semi-structured interviews with teachers took place during the summer months, when they were on their summer vacation time. A few teachers who were contacted by the researcher to participate in this research study chose not to participate. The timing of the research might be considered a delimitation in that those particular teachers either were not able to or did not wish to participate during their summer vacation from work.

Limitations are those specific conditions in a research study which may weaken the validity of its results or outcomes (Bloomberg & Volpe, 2012). Limitations for this research

study might be related to gathering data such as through personal, semi-structured interviews and examining online artifacts, as well as recognizing my own personal bias as the researcher (Creswell, 2013). This research study was limited to elementary teachers who were active participants in their Edmodo grade level mathematics group. Limitations might have occurred related to participants' willingness to share their experiences openly and honestly with the researcher and might also have an impact on the manner in which they responded to particular interview questions. For example, some teachers might have provided responses that might be considered as favorable to the researcher in order to present themselves and their participation in their Edmodo grade level mathematics group in a positive light. Further, epoche is a phase within a phenomenological research study in which the researcher acknowledges his or her preconceived notions, experiences, or personal bias (Moustakas, 1994). The researcher was employed for 11 years, from 2003 to 2014, as an elementary assistant principal in the district which is the setting of this research study and still maintains professional relationships with several of the participants. Prior to leaving the district in 2014 the researcher was knowledgeable of some of the participants' professional work. As such, the researcher was aware of some of the difficulties elementary teachers experience when planning for mathematics instruction. While she fully disclosed this information from the onset, via her curriculum vitae, it cannot be fully assured that research participants responded to each semi-structured interview question in a completely unbiased manner.

The researcher's previous professional relationship with the school district further revealed itself during the focus group interview, as she functioned as a peripheral participant and briefly commented during the discussion. While some might suggest that this previous professional relationship might be a considerable limitation and thus skew the results of this

study, it should be noted that several of the research participants were forthcoming with their thoughts regarding participating within their Edmodo grade level groups as a community of practice. Some of the thoughts and reflections revealed by these participants included a belief that there was a lack of meaningful professional development offered through their Edmodo grade level groups. In addition, there was a hesitancy of some teachers to ask questions or seek clarification on instructional strategies within their Edmodo groups for fear of being viewed as incompetent by central office and school based administrators. Lastly, there was a perception mentioned by one participant during the focus group interview that some teachers did not wish to fully share their instructional resources with their colleagues for fear of competition and a desire to be viewed as exemplary themselves. The research participants interviewed for this study felt comfortable enough around the researcher to share these perceptions, some of which may be considered as negative.

Recommendations for Future Research

The present body of literature and research on elementary teachers' participation in Edmodo as a community of practice is extremely limited. There are very few phenomenology studies which describe elementary teachers' lived experience of using Edmodo and even fewer studies which describe the experience of participating in any online professional learning network as a community of practice. This research study presented how elementary teachers described their lived experience of participating in their grade level mathematics as a community of practice. It served to provide a rich description of their experience which can then be used as a spring board for future research studies involving other specific groups of teachers and students.

Elementary teachers within this school district also participated in other Edmodo subject area grade level groups, such as language arts, science and social studies. Similar transcendental phenomenology studies with elementary teachers who actively participated in these other Edmodo groups in which they described their lived experiences might also be beneficial to the body of literature as well as to the various curriculum and instruction departments within the school district. Having a rich description of elementary teachers' views on their participation within the various Edmodo grade level groups could possibly influence how these groups are structured and how curriculum and pacing suggestions are presented. These influences would then potentially positively influence elementary teachers' perception and assist them with planning for enhanced classroom instruction.

A similar study with secondary teachers would perhaps be beneficial, as they might have a different viewpoint. A closely related study could also be conducted with secondary level students who participated frequently in various Edmodo groups and could describe their experiences within a community of practice. The data collected from secondary teachers and students could then be compared against that from this study involving elementary teachers, which would assist with identifying common themes. The data collected in this research study was beneficial and contributed to the existing research on the community of practice theory and on elementary teachers' participation in Edmodo.

Researching the effect using Edmodo has on both teachers' and students' sense of self-efficacy, sense of community, or sense of professional growth through the use of a survey instrument would be beneficial in that it would determine its usefulness in a method that could be quantified. Additional possible quantitative future studies include examining the impact Edmodo's use of grade level subject area groups has on student achievement, the impact of using

professional development videos or strategies has on teachers' views regarding professional growth, or the effect participating within Edmodo grade level subject groups has on teacher collaboration.

Summary

The purpose of this transcendental phenomenological study was to describe the lived experiences of elementary teachers who participated in Edmodo, an online professional learning network, as a community of practice. An analysis of the data collected from research participants revealed that communication with outside staff without regard for time or location, sharing pacing guidelines and instructional resources, and using Edmodo as a communication tool were three themes that emerged through a description of the phenomenon. Two of these themes, communication with outside staff without regard for time or location and using Edmodo as a communication tool dealt directly with how elementary teachers used Edmodo to communicate with not only their grade level colleagues but also with elementary educators outside of their school division. All of the research participants were elementary teachers who were active participants within their Edmodo grade level math groups. Most of the research participants described the value in participating in these groups to share instructional strategies and receive pacing suggestions from central office. Some research participants were more willing to share and collaborate within their Edmodo grade level math groups than others. Further, many research participants shared possible reasons for a lack of meaningful collaboration within the groups to include fear of being perceived as incompetent or lacking knowledge by school and central office administrators and fear of not being considered exemplary when compared to their peers. This issue might be addressed through ongoing communication and professional opportunities designed to strengthen trust and cultivate working

relationships between teachers, school based administrators, and central office administrators. Another concern of the research participants was a perceived lack of professional development offered through Edmodo. Many of them did not view Edmodo favorably as a professional development tool. Providing direct professional development for elementary teachers through the use of instructional videos which include modeling of specific strategies or techniques geared towards instructional expectations of the school division might be beneficial. In conclusion, it would be very helpful in the future to determine ways in which school divisions can increase collaboration among teachers and provide meaningful professional development opportunities for elementary teachers who participate in their Edmodo grade level math groups as a community of practice.

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APPENDICES

Appendix A: Institutional Review Board Approval Letter

LIBERTY UNIVERSITY

INSTITUTIONAL REVIEW BOARD

6/2/2016

Cynthia R. Reasoner

IRB Approval 2513.060216: Elementary Teachers' Participation in Edmodo as a Community of Practice: A Phenomenology

Dear Cynthia R. Reasoner,

We are pleased to inform you that your study has been approved by the Liberty IRB. This approval is extended to you for one year from the date provided above with your protocol number. If data collection proceeds past one year, or if you make changes in the methodology as it pertains to human subjects, you must submit an appropriate update form to the IRB. The forms for these cases were attached to your approval email.

Thank you for your cooperation with the IRB, and we wish you well with your research project.

Sincerely,

G. Michele Baker, MA, CIP

Administrative Chair of Institutional Research **The Graduate School**

Liberty University | Training Champions for Christ since 1971

Appendix B: Investigator Signature Page

Liberty University Institutional Review Board | 4
Application for the Use of Human Research Participants

4. *INVESTIGATOR AGREEMENT & SIGNATURE PAGE (Stand-alone signature pages are available at <http://www.liberty.edu/academics/graduate/irb/index.cfm?PID=20003>):

BY SIGNING THIS DOCUMENT, THE INVESTIGATOR AGREES:

1. That no participants will be recruited or entered under the protocol until the PI has received the final approval or exemption email from the chair of the Institutional Review Board.
2. That no participants will be recruited or entered under the protocol until all key personnel for the project have been properly educated on the protocol for the study.
3. That any modifications of the protocol or consent form will not be initiated without prior written approval, by email, from the IRB and the faculty advisor, except when necessary to eliminate immediate hazards to the participants.
4. The PI agrees to carry out the protocol as stated in the approved application: all participants will be recruited and consented as stated in the protocol approved or exempted by the IRB. If written consent is required, all participants will be consented by signing a copy of the approved consent form.
5. That any unanticipated problems involving risks to participants or others participating in the approved protocol, which must be in accordance with the Liberty Way (and/or the Honor Code) and the Confidentiality Statement, will be promptly reported in writing to the IRB.
6. That the IRB office will be notified within 30 days of a change in the PI for the study.
7. That the IRB office will be notified within 30 days of the completion of this study.
8. That the PI will inform the IRB and complete all necessary reports should he/she terminate University association.
9. To maintain records and keep informed consent documents for **three years** after completion of the project, even if the PI terminates association with the University.
10. That he/she has access to copies of 45 CFR 46 and the Belmont Report.

Principal Investigator (Printed) _____ Principal Investigator (Signature) _____ Date _____

FOR STUDENT PROPOSALS ONLY

BY SIGNING THIS DOCUMENT, THE FACULTY ADVISOR AGREES:

1. To assume responsibility for the oversight of the student's current investigation as outlined in the approved IRB application.
2. To work with the investigator and the Institutional Review Board, as needed, in maintaining compliance with this agreement.
3. To monitor email contact between the Institutional Review Board and principle investigator. Faculty advisors are cced on all IRB emails to PIs.
4. That the principal investigator is qualified to perform this study.
5. That by signing this document you verify you have carefully read this application and approve of the procedures described herein, and also verify that the application complies with all instructions listed above. If you have any questions, please contact our office (irb@liberty.edu).

Dr. Randall Dunn

Faculty Advisor (Printed) _____ Faculty Advisor (Original Signature) _____ Date _____

***The Institutional Review Board reserves the right to terminate this study at any time if, in its opinion, (1) the risks of further experimentation are prohibitive, or (2) the above agreement is breached.**

Appendix C: Informed Consent Form

The Liberty University Institutional
Review Board has approved
this document for use from
6/2/2016 to 6/1/2017
Protocol # 2513.060216

CONSENT FORM

Elementary Teachers' Participation in Edmodo as a Community of Practice: A Phenomenology
Cynthia R. Reasoner
Liberty University
School of Education

You are invited to be in a research study of how elementary teachers use Edmodo as a community of practice within their grade level specific mathematics groups. You were selected as a possible participant because you have been noted as a teacher who participates frequently within his or her Edmodo grade level math group. I ask that you read this form and ask any questions you may have before agreeing to be in the study.

Cynthia Reasoner, a doctoral candidate in the School of Education at Liberty University, is conducting this study.

Background Information: The purpose of this research study is to describe what elementary teachers experience when they participate in Edmodo, an online professional learning network, as a community of practice within a large suburban school district in central Virginia. The manner in which elementary teachers describe their participation in Edmodo, an online professional learning network, as a community of practice will form the foundation of this phenomenological research study. The research questions developed from the theoretical framework and related literature, which will be the basis for this research study will be:

1. How do teachers describe their lived experience of participation in Edmodo as a community of practice?
2. How does the presence of external factors influence elementary teachers' beliefs about participating in an online PLN as a community of practice?
3. How do elementary teachers describe their experience of teaching more rigorous mathematics instruction both before and after participating in Edmodo grade level math groups as a community of practice?
4. How do elementary teachers view the future of their profession based on their experience of participating in Edmodo grade level math groups as a community of practice?

Procedures: If you agree to be in this study, I would ask you to do the following things:

- 1.) Participate in a semi-structured interview with the researcher in which you will be asked to verbally respond to 31 interview questions (approximately 45 minutes to 1 hour).
- 2.) Possibly participate in a small focus group (if selected) to examine the degree to which a group of research participants function as a community of practice (approximately 30 to 45 minutes).
- 3.) Share (via email) copies of online documents you have posted in your Edmodo grade level mathematics group (approximately 15 minutes).
- 4) After all data is collected and analyzed, each research participant will be asked to review the transcription and analysis of both the semi-structured interview and focus group for accuracy and to ensure that the collection of data, its analysis, the researcher's interpretations of the data, and the researcher's conclusions accurately reflect the participants' reality and experience (approximately 30 minutes).

The Liberty University Institutional
Review Board has approved
this document for use from
6/2/2016 to 6/1/2017
Protocol # 2513.060216

Risks and Benefits of being in the Study: The risks involved in this study are minimal and no more than what you as the participant would encounter in everyday life.

The benefits to participation are: This research study will hopefully be significant to the body of literature because elementary teachers struggle with teaching more rigorous mathematics SOLs and participation in Edmodo grade level mathematics groups as a community of practice can potentially influence their perceived sense of learning, sense of community and sense of professional growth. These factors might all further develop the contributions participants make towards the elementary teaching profession.

Compensation: You will receive no financial payment or reimbursement for taking part in this study. At the conclusion of the study, each research participant who completes the research study in its entirety will receive a thank you letter for his or her personnel file and a Starbucks gift card in the amount of \$10 as a thank you for personal time given.

Confidentiality: The records of this study will be kept private. In any sort of report I might publish, I will not include any information that will make it possible to identify a subject. Research records will be stored securely and only the researcher will have access to the records.

Each research participant will be assigned a number and a pseudonym which will be used throughout all aspects of the study, including direct quotations as part of the textual description of the phenomenon. The audio recordings of each semi-structured interview and focus group interview will be recorded on an iPhone6 device then transferred to the researcher's Liberty University email account for safekeeping. Once the audio recordings have been transferred to the email account for safekeeping and content has been transcribed, they will be deleted from the iPhone 6 device. All audio recordings and subsequent transcriptions will be kept for three years after the conclusion of the research study. Data stored electronically through the researcher's Liberty University email account are password protected and only the researcher will have access. Copies of transcriptions will be stored in a locked file cabinet in which only the researcher will have access. After three years each audio recording will be deleted and each transcription will be shredded and disposed of. There is no anticipated use of the data after the conclusion of the research study. All data collected will remain confidential. All semi-structured interviews and focus groups will be audio recorded. The confidentiality and privacy of all research participants participating in focus groups cannot be fully assured. However, the researcher will ask all focus group participants to protect the confidentiality and privacy of the group by not revealing the names of other participants or discussing the proceedings outside of the focus group.

Voluntary Nature of the Study: Participation in this study is voluntary. Your decision whether or not to participate will not affect your current or future relations with Liberty University. If you decide to participate, you are free to not answer any question or withdraw at any time without affecting those relationships.

The Liberty University Institutional
Review Board has approved
this document for use from
6/2/2016 to 6/1/2017
Protocol # 2513.060216

How to Withdraw from the Study: If you choose to withdraw from the study, please contact the researcher at the email address/phone number included in the next paragraph. Should you choose to withdraw, data collected from you, apart from focus group data, will be destroyed

immediately and will not be included in this study. Focus group data will not be destroyed, but your contributions to the focus group will not be included in the study if you choose to withdraw.

Contacts and Questions: The researcher conducting this study is Cynthia Reasoner. You may ask any questions you have now. If you have questions later, **you are encouraged** to contact her at creasoner2@liberty.edu or (757) 754-9085. You may also contact the researcher's faculty advisor, Dr. Randall Dunn at rdunn@liberty.edu.

If you have any questions or concerns regarding this study and would like to talk to someone other than the researcher, **you are encouraged** to contact the Institutional Review Board, 1971 University Blvd, Carter 134, Lynchburg, VA 24515 or email at irb@liberty.edu.

Please notify the researcher if you would like a copy of this information to keep for your records.

Statement of Consent:

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

(NOTE: DO NOT AGREE TO PARTICIPATE UNLESS IRB APPROVAL INFORMATION WITH CURRENT DATES HAS BEEN ADDED TO THIS DOCUMENT.)

☐ The researcher has my permission to audio-record me as part of my participation in this study.

Signature

Date

Signature of Investigator

Date

Appendix D: Letter to Research Participants

Dear _____ (insert elementary teacher's name),

I am Cynthia Reasoner, a doctoral candidate at Liberty University and I am completing a research study on how elementary teachers participate in Edmodo as a community of practice as part of my dissertation. I have enclosed my curriculum vitae so you might know about my professional background and experience.

I am emailing you to request your participation in my research study. You have been identified as an elementary teacher who frequently posts and participates in his or her Edmodo grade level math group. Enclosed is an informed consent form which outlines all aspects of the research study, its purpose, the procedures of the study, what specific tasks you will be asked to perform, and any risks and benefits to participating in the study.

You should be aware that you are free to decide not to participate or to withdraw at any time without affecting your relationship with your school district, your principal, the researcher or Liberty University School of Education.

The purpose of this phenomenology research study is to describe what elementary teachers experience when they participate in Edmodo, an online professional learning network, as a community of practice within a large suburban school district in central Virginia. The manner in which elementary teachers describe their participation in Edmodo, an online professional learning network, as a community of practice will form the foundation of this phenomenological research study. The research questions developed from the theoretical framework and related literature which will be the basis for this research study will be:

1. How do teachers describe their lived experience of participation in Edmodo as a community of practice?
2. How does the presence of external factors influence elementary teachers' beliefs about participating in an online PLN as a community of practice?
3. How do elementary teachers describe their experience of teaching more rigorous mathematics instruction both before and after participating in Edmodo grade level math groups as a community of practice?
4. How do elementary teachers view the future of their profession based on their experience of participating in Edmodo grade level math groups as a community of practice?

Data will be collected through semi-structured interviews with each participant, focus groups with selected participants and an analysis of online data (such as participants' postings in

Edmodo and documents shared within the grade level math Edmodo group). All interviews and focus group discussions will be audiotaped and transcribed.

Please do not hesitate to ask me any questions about the research study either before participating or during the time that you are participating. I will share the findings with you after the research study is completed and ask you to review my transcription of your interview and my analysis of your data to ensure that it adequately describes your reality of the phenomenon you experience when participating in Edmodo as a community of practice. You will be assigned a number and a pseudonym; therefore, your identity will not be published with the research findings in any way. Only the other participants in your focus group and myself will know your identity as a research participant.

There are no known risks and/or discomforts associated with this research study. The expected benefits associated with this research study will hopefully be significant to the body of literature because elementary teachers struggle with teaching more rigorous mathematics SOLs and participation in Edmodo grade level mathematics groups as a community of practice can potentially influence their perceived sense of learning, sense of community and sense of professional growth. These factors might all further develop the contributions participants make towards the elementary teaching profession.

I hope you will consider participating in my research study. As a token of appreciation for your personal time at the conclusion of my research I will give each research participant a \$10 Starbucks gift card and a letter for their personnel file. If you have any questions or desire further information I may be reached at (757)754-9085 (cell) or creasoner2@liberty.edu (email).

Sincerely,

Cynthia R. Reasoner, M.Ed.
Doctoral Candidate, Liberty University

Appendix E: Letter to Elementary Principal of Research Participants

Dear _____ **(insert elementary principal name/title),**

I am Cynthia Reasoner, a doctoral candidate at Liberty University and I am completing a research study on how elementary teachers participate in Edmodo as a community of practice as part of my dissertation. I have enclosed my curriculum vitae so you might know about my professional background and experience.

I am emailing you as a courtesy to inform you that I have asked one of your teachers, _____ **(insert elementary teacher's name)** to participate in my research study. He or she has been identified as an elementary teacher who frequently posts and participates in his or her Edmodo grade level math group. Enclosed is an informed consent form which outlines all aspects of the research study, its purpose, the procedures of the study, what specific tasks he or she will be asked to perform, and any risks and benefits to participating in the study.

The purpose of this phenomenology research study is to describe what elementary teachers experience when they participate in Edmodo, an online professional learning network, as a community of practice within a large suburban school district in central Virginia. The manner in which elementary teachers describe their participation in Edmodo, an online professional learning network, as a community of practice will form the foundation of this phenomenological research study. The research questions developed from the theoretical framework and related literature which will be the basis for this research study will be:

1. How do teachers describe their lived experience of participation in Edmodo as a community of practice?
2. How does the presence of external factors influence elementary teachers' beliefs about participating in an online PLN as a community of practice?
3. How do elementary teachers describe their experience of teaching more rigorous mathematics instruction both before and after participating in Edmodo grade level math groups as a community of practice?
4. How do elementary teachers view the future of their profession based on their experience of participating in Edmodo grade level math groups as a community of practice?

Data will be collected through semi-structured interviews with each participant, focus groups with selected participants and an analysis of online data (such as participants' postings in Edmodo and documents shared within the grade level math Edmodo group). All interviews and focus group discussions will be audiotaped and transcribed.

There are no known risks and/or discomforts associated with this research study. The expected benefits associated with this research study will hopefully be significant to the body of literature because elementary teachers struggle with teaching more rigorous mathematics SOLs and participation in Edmodo grade level mathematics groups as a community of practice can potentially influence their perceived sense of learning, sense of community and sense of professional growth. These factors might all further develop the contributions participants make towards the elementary teaching profession.

I hope that _____ **(insert teacher's name)** will consider participating in my research study. As a token of appreciation for _____ **(insert teacher's name)** personal time at the conclusion of my research I will give him or her a \$10 Starbucks gift card and a letter for his or her personnel file. If you have any questions or desire further information I may be reached at (757)754-9085 (cell) or creasoner2@liberty.edu (email).

Sincerely,

Cynthia R. Reasoner, M.Ed.
Doctoral Candidate, Liberty University

Appendix F: Investigator's Curriculum Vitae

Cynthia Rush Reasoner
 11330 Weeping Cherry Lane
 Moseley, VA 23120
 (804) 739-3543

Education: **Liberty University** Lynchburg, VA
Ed.D. candidate in Educational Leadership
 Dissertation: Elementary Teachers' Participation in Edmodo as a Community of Practice: A Phenomenology expected defense March 2017

Old Dominion University Norfolk, VA
PreK-12 Administration/ Supervision Endorsement May 2001
University of Virginia Charlottesville, VA
Master of Education in Instruction May 1997
University of Mary Washington Fredericksburg, VA
Bachelor of Arts in History May 1993

Administrative

Experience: **Amelia County Public Schools**
Principal Amelia County Elementary School
 July 2014- present

Chesterfield County Public Schools
Assistant Principal Providence Elementary School
 August 2010- July 2014
 Grange Hall Elementary School
 August 2007- June 2010
 Ettrick Elementary School
 November 2003- June 2007

Virginia Beach City Public Schools
Assistant Principal Seatack Elementary School
 July 2002- November 2003

Hampton City Schools
Assistant Principal Aberdeen Elementary School
 June 2001- July 2002

Hampton City Schools
AVID Program Coordinator August 1997- June 2001

Hampton City Schools
Ruby Payne: Framework for Understanding Poverty Facilitator
 Trained teachers on strategies for educating students living in poverty
 March 2000- June 2002

Additional
Experience: VSUP Principal Leadership Academy 2016-2017

SCOPE Cohort VII participant	2011- 2013
Elementary Report Card revision committee member	2012- 2013
Lead III Professional Development facilitator “Building Relationships in Your School Community”	April 27, 2011
Design for Excellence 2020/ Innovation Team participant Administrative Assistant to Dr. Dale Kalkofen	January 2011-June 2011
Toastmasters participant Vice President for Public Relations	October 2010-June 2011
Guest columnist for the <u>Richmond Times-Dispatch</u> “Remember Dr. Seuss by Reading to a Child”	March 1, 2010
Elementary Professional Development facilitator “The Power of Mindsets: Brain Research and Building Relationships for Student Success”	October 12, 2009
Technology Academy II participant	August 2009- June 2010
Assistant Principal Team Leader- Team III	August 2008- June 2009
Leadership Institute Phase III- Asst. Principal mentor	August 2007- June 2008
Next Generation Leadership Academy participant	August 2006- June 2007
AVID Summer Institute facilitator Presented at the national AVID Summer Institute in Atlanta, GA	July 29- August 2, 2001
GEAR UP program grant writer Wrote the U.S. Department of Education GEAR UP grant for Hampton City Schools	March 2001

**Honors/
Awards:**

U.S. Department of Education Blue Ribbon School Grange Hall Elementary School	November 2009
Governor’s Award for Educational Excellence Grange Hall Elementary School	2007-2008 2008-2009
Hampton Roads Institute for Advanced Study of Teaching Hampton City Schools’ participant Old Dominion University	2000-2001

Appendix G: Copy of Semi-Structured Interview Questions

Research Subject: _____

Pseudonym: _____

Elementary Teachers' Participation in Edmodo as a Community of Practice: A Phenomenology

Semi-Structured, Standardized Open-Ended Interview Questions

Educational background and teaching experience of each participant

1. If money were no object, please describe your dream vacation. (ice breaker)
2. Please describe your teaching experience, to include how many years you have taught and what grade levels? (Please do not state any specific school district or elementary school locations)
3. What is your current teaching assignment? (Please do not state your elementary school location)
4. Please describe all of your educational experiences, including degrees and specialized trainings, which have prepared you for your position as an elementary teacher.

Reasons elementary teachers participate in a professional learning network

5. Which PLNs do you actively participate in within your role as an elementary teacher?
6. How would you describe your level of participation, if any, in professional learning networks as an elementary teacher?
7. What are some specific reasons you chose to participate in a professional learning network as an elementary teacher?

8. How does your participation, if any, in a professional learning network impact your scope of communication with other elementary teachers?
9. How does your participation, if any, in a professional learning network impact the convenience of connecting online with other elementary teachers?
10. How does your participation, if any, in a professional learning network impact the professional dialogue you maintain between yourself and other colleagues?

Using a professional learning network to teach content

11. What specific instructional techniques, if any, have you learned about or refined through your participation in a professional learning network to teach elementary instructional content?
12. What subjects, if any, have you felt more successful teaching due to your participation in a professional learning network?

Using a professional learning network for professional development

13. What types of professional development, if any, have you received through your participation in a professional learning network?
14. What are some of the reasons, if any, you participate in a professional learning network for professional development?
15. How does your participation, if any, in a professional learning network for professional development focus on student achievement?

Perception of learning within a community of practice

16. How has your participation, if any, in an online professional learning network as a community of practice transformed your learning experiences?

17. How have you used social media such as Twitter or Edmodo, if any, to transform your learning experiences?

Sense of community within a community of practice

18. How has sharing and exchanging electronic resources, if any, helped to create a sense of community within your community of practice?
19. How has your participation in a community of practice, if any, encouraged collaboration and communication between yourself and your colleagues?

Sense of professional growth within a community of practice

20. How has your participation within a community of practice, if any, created a sense of professional growth for yourself?
21. How has your participation within a community of practice, if any, positively influenced your engagement, motivation, and enhanced retention of new information?

Use of Edmodo for student engagement

22. How do you view Edmodo, if any, as influencing your students' level of engagement during your instruction?
23. How does using Edmodo, if any, enhance your students' engagement with you as well as their peers?

Use of Edmodo for student collaboration

24. How does using Edmodo, if any, influence your students' level of collaboration with one another?
25. How does using Edmodo, if any, influence your students' level of collaboration with you?

26. To what degree do your students, if any, have access to Internet and Edmodo usage at home?

Use of Edmodo for collaboration among elementary teachers

27. How do you use Edmodo, if any, to collaborate with other elementary teachers?
28. What types of instructional materials and online resources, if any, do you share and collaborate with among other elementary teachers?
29. How does your use of Edmodo, if any, allow you to collaborate frequently, without regard for specific time or location?

Use of Edmodo for professional development among elementary teachers

30. How do you use Edmodo, if any, for professional development purposes?
31. What types of professional development, if any, have you received or accessed through your use of Edmodo?

Appendix H: Copy of Focus Group Interview Questions

Elementary Teachers' Participation in Edmodo as a Community of Practice: A Phenomenology

Cynthia R. Reasoner

Focus Group Interview Questions

1. Please tell us your name, what grade you teach, at what school you teach, and how many years you have been teaching.
2. Explain some of the challenges, if any, you have faced when planning for the teaching of the more rigorous mathematics SOL curriculum.
3. How has participating in Edmodo grade level mathematics groups, if any, influenced your sense of community?
4. How has participating in Edmodo grade level mathematics groups, if any, influenced your sense of perceived learning?
5. How has participating in Edmodo grade level mathematics groups, if any, influenced your sense of professional growth?
6. How do you believe participating in your assigned grade level mathematics Edmodo group, if any, has assisted your ability to collaborate and share with other teachers regarding grade level mathematics instruction?
7. How has participation in your Edmodo grade level mathematics group, if any, provided you with professional development opportunities?
8. How has your perception of the teaching profession, if any, changed since participating in Edmodo as a community of practice?