Walden Dissertations and Doctoral Studies

2018

Teachers' Experiences with Web-Based Professional Development for Diffusing State Standards

Nadine Petrie-Waymyers
Walden University

Walden University

College of Education

This is to certify that the doctoral dissertation by

Nadine Petrie-Waymyers

has been found to be complete and satisfactory in all respects,
and that any and all revisions required by
the review committee have been made.

Review Committee
Dr. Deborah Bauder, Committee Chairperson, Education Faculty
Dr. Asoka Jayasena, Committee Member, Education Faculty
Dr. Shereeza Mohammed, University Reviewer, Education Faculty

Chief Academic Officer
Eric Riedel, Ph.D.

Walden University
2018

Abstract

Teachers' Experiences with Web-Based Professional Development for Diffusing State

Standards

by

Nadine Petrie-Waymyers

MA, University of Phoenix 2006

BS, American Intercontinental University, 2003

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

Educational Technology

Walden University

August 2018

Abstract

School reform efforts ultimately affect the students, but what is seldom looked at is how they affect teachers. This phenomenological study examined the experiences of teachers with regards to web-based professional development during a systemic change. The purpose of this qualitative study was to generate an in-depth understanding of the lived experiences of 6 teachers in a Southeastern state who had participated in the initial process of implementing organizational changes and the diffusion of the new state educational standards. Rogers's diffusion of innovation theory served as the study's conceptual framework. Research questions focused on the perspectives of teachers regarding the impact of web-based professional development on implementing the new state standards, and the perceived barriers and challenges faced in their attempts to make the implementation of the new state standards successful. Interview data were analyzed using first- and second-level coding to identify external and internal factors related to the research questions and themes that emerged across all interview transcripts. Key findings indicted that teachers perceived that they did not receive adequate professional development or planning time to implement the new standards. This study has implications for social change on an organizational and individual level. On an organizational level, districts can provide K-12 teachers with an implementation process that allows adequate planning time and proper professional development that enhances their pedagogical needs by using a framework more aligned to the diffusion innovation theory. Teachers can then better plan instruction with ample time to acquire, process, and implement new knowledge, allowing them to improve their pedagogical practice.

Teachers' Experiences with Web-Based Professional Development for Diffusing State

Standards

by

Nadine Petrie-Waymyers

MA, University of Phoenix, 2006

BS, American Intercontinental University, 2003

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

Educational Technology

Walden University

August 2018

Dedication

This study is dedicated to my family, my husband and children who have supported me throughout my journey of attaining this doctoral degree. I would like to acknowledge my grandmother, who is home with her heavenly Father now, but who has encouraged and prayed me through this endeavor. I want to especially thank Lisa and Sophia who have read and reread and questioned my many drafts along the way.

Acknowledgments

I would like to personally thank my committee members, Dr. Deborah Bauder, Dr. Asoka Jayasena, and Dr. Shereeza Mohammed for your dedication of time and expertise. I would like to especially thank Dr. Bauder for opening my eyes and mind to what it truly means to be a researcher and a scholar.

Table of Contents

List of Tables

Chapter 1: Introduction to the Study

A systemic change such as the Common Core State Standards is a paramount endeavor for the states and territories that adopt it. The Common Core State Standards for mathematics and English language arts were created by the National Governors Association (NGA) Center for Best Practices and the Council of Chief State School Officers (CCSSO, 2010). The implementation of the Common Core State Standards is the most recent educational reform effort in the United States (Abika & Wilkinson, 2015; Barrett-Tatum, & M. Smith, 2018; Burks et al., 2013; Lee, 2011; Martinie, Kim, & Abernathy, 2016; Polikoff, 2013; Toscano, 2013).

The standards were created because college freshman across the United States were not prepared for college-level English and math courses (CCSSO, 2010). By creating one set of standards, which indicated what students should know for each grade level K-12, it could be expected that students would have the necessary skills and knowledge needed to enter college and the workforce (CCSSO, 2010). In 2010 the state located in the Southeastern United States adopted the CCSS (CCSSO, 2010). After adopting the standards, the state modified them to better meet the needs of its students.

The state adopted the CCSS in 2010 along with more than half of the nation. In 2011, professional development for implementing the new standards started and continued throughout the following school year. The state modified the standards as allowed, and then renamed the standards to accommodate the state (FLDOE, 2013). However, when standards change in two critical areas such as English language arts and math, as was the case, a systemic change takes place throughout the entire

educational system. With any systemic change in any section of an educational system, professional development is expected (Abika & Wilkinson, 2015; Acar, & Yıldız, 2016; Anderson, et. al., 2012; Davis et al., 2013; El-Bilawi, & Nasser, 2017; Lesaux et al., 2014; Liebtag, 2013; Marrongelle, Sztajn, & Smith, 2013; Murphy & Marshall 2015; Twining, Raffaghelli, Albion, & Knezek, 2013). According to Abika and Wilkinson (2015) and Twining et al. (2013), professional development is the driving force for improvement in teacher instruction and student achievement. Although professional development is provided to teachers, they do not always deem it effective or relevant (Collins & Liang, 2015; Kyriakides, Christoforidou, Panayiotou, & Creemers, 2017; McComb & Eather, 2017). From the perspective of teachers, they need professional development to better understand the depth of the standards they are expected to teach (Bostic & Matney, 2013; Matherson, & Windle, 2017; Ruchti et al., 2013; Stair et al., 2016).

Professional development for educators has existed almost as long as the profession itself. Opfer & Pedder's (2011) research on professional development covered several decades. Their results indicated that professional development is vast and complex, and therefore must be viewed as such when looking at teacher learning. The way teachers learn today is different from the way they have learned in the past (Kezar, 2011). While views on how professional development is provided may differ, researchers agree that professional development is necessary for teacher development (Abika & Wilkinson, 2015; Anderson, et. al., 2012; Davis et al., 2013; Lesaux et al., 2014; Liebtag, 2013; Main & Pendergast, 2017; Marrongelle, Sztajn, & Smith, 2013; Murphy &

Marshall 2015; Rempe-Gillen, 2018; Twining, Raffaghelli, Albion, & Knezek, 2013).

Professional development can be defined in several ways. To some teachers, professional

development involves a one-day workshop in which they are taught something to be

applied in the classroom (Marrongelle et al., 2013; Patton et al., 2015), but no follow-up

is administered and no trainer comes to ensure that the skill taught is being used (Davis

et. al, 2013; Marrongelle, Sztajn, & Smith, 2013; Patton et al., 2015). To administrators

and district leaders, professional development for teachers involves training that provides

teachers with skills needed to enrich their classroom instruction (Marrongelle et al., 2013;

Patton et al., 2015; Saderholm, Ronau, Rakes, Bush, & Mohr-Schroeder, 2017; Sunde &

Ulvik, 2014). Professional development in the educational system has been viewed by

researchers as needing a makeover for decades now (Davis et al., 2013; Lesaux et al.,

2014). Researchers have discussed how a 1-day workshop with no follow up is not

sufficient for anyone (Davis et al., 2013; Jones & Dexter, 2014; Lesaux et. al., 2014;

Marrongelle, Sztajn, & Smith, 2013; Patton et al., 2015). Yet, very little has been done to

create a better system of professional development for educators (Hargreaves & Fullan,

2013; McComb & Eather, 2017;). Rothman (2012) contended that with today's

technology, online professional development can be accomplished across state lines,

especially given that 45 states have adopted the same standards. He further stated that

with these states working together to create units of study, online professional

development can be more effective. With online professional development, educators are

more likely to retain information, and on-time content can be easily accessed (Rothman,

2012).

With the implementation of new state standards, one would expect a plethora of professional development in all formats for all educators (Class, & Schneider, 2014; Marrongelle et al., 2013). However, the most widely used professional development format to reach educators across the state was web-based (FLDOE, 2013). Web-based professional development is fairly new to educators (Goh & Kale, 2016). Yet, despite this and the fact that many educators still lack basic knowledge of computer use or technology (Blau, Peled, & Nusan, 2016; Goh & Kale, 2016; Matsumura, Bickel, Zook-Howell, Correnti, & Walsh, 2016), the state chose this format to guide educators in implementing the new state standards. Potential implications of this study are that school and district leaders may use it to gain understanding of the web-based professional development needs of K-12 teachers. In so doing, they will gain insights into what works and what needs improvements concerning professional development to support successful teacher development and ultimately positive change in student learning.

In this chapter, I provide a short summary of scholarly literature on professional development in order to identify a gap in the research. The gap indicates the lack of evidence regarding the experiences of teachers and the web-based professional development they receive to implement new state standards. Following the explanation of the research gap, I offer the problem statement and describe the relevance and significance of this topic. Then I describe the purpose of the study, research questions, and the conceptual framework of innovation theory. Finally, I describe the nature of the study and clarification of the assumptions, scope, delimitations, and limitations.

Background

Traditionally, teachers' attitudes toward professional development have not been positive for the mere fact that professional development is usually a 1- or 2-day workshop with no continued follow-up (Patton et al., 2015). However, in their study, Gorozidis and Papaioannou (2014) found that teachers who are freely motivated towards training will actively engage in professional development and new innovations. Kao, Tsai, and Shih (2014) found a positive correlation between teachers' self-efficacy related to web-based professional development and their attitudes toward web-based professional development. Chien, Kao, Yeh, and Lin (2012) concluded that positive effects are possible from web-based professional development if educators' attitudes and motivation towards web-based learning is positive before the learning sessions. Taking measures to improve educators' perception towards web-based professional development will improve their attitudes towards its usefulness and motivation to use web-based learning systems (Chien et. al., 2012). State and district leaders should consider this before implementing web-based professional development district-wide or school-wide.

Web-Based Professional Development

In recent years, professional development for many industries has moved from strictly face-to-face trainings, to including web-based training systems (Storandt et al., 2012). Web-based professional development can be defined as professional learning aligned to the organization's goals delivered over the internet or an organization's intranet (Chamers & Lee, 2004; Learning Forward, n.d.). It is a new arena of professional development for educators. This format is being used in several ways for educators in K-

12 organizations. In these organizations, professional development may be implemented as an asynchronous webinar, synchronous webinar, or a self-paced video series (Collins & Liang, 2015; Dash et al., 2012; Patton et al, 2015). In a synchronous environment, those receiving professional development would have the opportunity to gain feedback from an instructor or expert and would be able to engage in online discussions with their peers. Much can be gained from peers discussing new information and receiving feedback (Patton et al., 2015). With some forms of asynchronous professional development, educators do not have the opportunity to receive feedback from an instructor or content expert. However, if several colleagues watch a static webinar together, they can then discuss the information gained from the webinar. This method can prove to be beneficial. However, lack of feedback from an expert on the subject matter may leave colleagues pondering whether their perspective on the information gained is correct (Collins & Liang, 2015; Patton et al., 2015). This leads one to wonder if this type of professional development can be considered productive.

In their study, Whitaker et al. (2007) focused on three different professional development methods used for a group of teachers. The methods varied in resources and support ranging from no support and limited resources to complete support. The first group received limited web-based materials with no requirement to use them and no additional support. The second group received a wealth of web-based resources and were expected to use information gained in daily curriculum, and the final group received—in addition to a wealth of web-based resources—bi-weekly discussions with an education consultant. The final group of participants was more motivated and engaged than the

other two groups. However, some members of the first group were willing to purchase additional materials. These were resources they felt they needed to fully apply the learning they just gained from the course. The same materials were freely given to the other two groups. The second group was engaged in the project but criticized the usefulness of some components and its lack of professional improvement for them. According to their research, Whitaker et al. concluded that the level and type of support given to educators during a systemic change must be one that will not only garner support from educators by motivating and engaging them, but also be on-going and sustain the processes and procedures established during implementation.

Implementing Change

According to Hall and Hord (2011) mandated changes must involve interventions in order for the change to work. Interventions that meet the needs of all members of the organization are required when changes are mandated. Individuals do not learn at the same pace or in the same way, therefore, a key professional development component should be differentiation. Differentiation would allow all members to learn according to their learning style and at a pace that is appropriate for their learning needs. Each working part of the organization must participate in professional development in more than one format (McKimm & Swanwick, 2010; Robertson, 2013; Salley & Bates, 2018). When organizations implement change, many aspects of the organization will change. In a top-down structure, commands related to new plans are dispensed and expected to be followed. In a K-12 organization, the commands are dispensed from the state education

department down to the district leaders, and on to the schools in the district (Carney et al., 2016).

In their study Zacher and Aukerman (2014) discussed their interpretation of technology implementation of the new standards. They focused on districts' and states' minimal emphasis on integrating technology in pedagogical practice. They concluded that states and districts must foster pedagogical practices in the implementation stage. Successful implementation can occur if the organization creates an implementation bridge to bring each member to a place where they change their practice based on their professional development (Hall & Hord, 2011; Smith, 2012; Surrette & Johnson, 2015).

Communication

Communication is a key component to implementing change. The communication between educators and school administrators, school administrators and district leaders, and finally district leaders and state education leaders must be effective (Chen & Reigeluth, 2010; Maunsell, 2014). Web-based communication, whether through email, video conferencing, or stand-alone webinars, affords an organization the opportunity to provide information to all members of the organization despite their location. Therefore, it is a financial and logistics benefit to the organization and its members. However, not all messages should be sent in a web-based format (Maunsell, 2014). The urgency and type of message, on occasion, warrants face-to-face communication; likewise, the size of the group and the initial message being sent will determine the format of the message. Chen and Reigeluth (2010) focused on communication practices of a district-wide leadership team during a systemic transformation. The communication practice of state and district

educational leaders, with all educators statewide, will determine how smoothly the change to the new state standards will be. Through their research, Chen and Reigeluth determined three areas of communication required during a systemic transformation: including developing group-process, sustaining motivation, and fostering organizational learning. Maunsell stated that communication is essential to the implementation of the new state standards and focused on three ways that states need to communicate to implement the standards: including all stakeholders, focusing on internal communication, and using existing communication methods and structures. These areas of communication introduced by Chen and Reigeluth and Maunsell will be addressed in this study.

Leadership

Effective leadership on all levels is essential when implementing change (Eilers & D'Amico, 2012; Hall & Hord, 2011). The style and characteristics of a leader will affect how well members of an organization implement change. Hall and Hord (2011) contended that organizations adopt change, while members of an organization implement change. Such is the case with the new state standards—initially adopted as CCSS and later adapted to meet the state's needs. The implementation of these standards created a climactic set of events spanning 5 years thus far (FLDOE, 2010). According to Hall and Hord, new practices demonstrated at high levels take 3 to 5 years to implement. However, the implementation process must be planned and systemically organized to affect change for all parts of the organization.

How K-12 administrators lead their organizations during organizational change will significantly influence how effective and sustainable the change to the new standards

will be (Eilers & D'Amico, 2012). Seashore (2009) concluded that the role of leaders during change processes requires them to effectively use their knowledge to shape the organizational culture and foster educator activities. Currently there is a lack of scholarly evidence on the experiences of teachers using technology for professional development to implement new state standards. The results of this study will aid state educational institutions in developing a framework to diffuse a systemic change via web-based professional development in their organizations. This study addressed the gap in scholarly understanding of (a) teachers' experiences during the diffusion process, (b) the dissemination of new state standards, (c) the technological means to implement organizational change in one district, and (d) the means by which professional development was implemented and communicated to teachers.

Problem Statement

All 45 states that adopted the Common Core State Standards have fully implemented the new standards, which include classroom instruction and statewide testing. Seashore (2009) stated that the districts will have control over the new state standards across the states and into the classroom. However, each district disseminates the information differently, and influences vary from district to district within the state. Internal communication and the use of various communications tools and methods that include all stakeholders are essential to effectively implement the new state standards (Maunsell, 2014). Most research in K-12 educational organizations (Eilers & D'Amico, 2012; Zacher & Aukerman, 2014.) focus on school-based leaders, and a considerable amount of research has been conducted on organizational change and change process in

the business sector (Dominguez, Galán-González, & Barroso, 2015; Wright, 2013). Yet little research exists on the experiences of teachers implementing change during an organizational change.

Therefore, the problem is that, although there is a great deal of evidence on organizational change processes, currently there is a lack of evidence identifying the experiences of teachers using technology for professional development to implement the English Language Arts Standards and Mathematics Standards. Although change occurs throughout the K-12 educational system annually, the research focus is always directed towards the on-site administrators and teachers, and how they implement change. However, the focus should be on the perspectives of teachers and their experiences with the web-based professional development they receive while going through the diffusion of innovation process to implement the new standards. In this study, I addressed the gap in scholarly understanding of the experiences of teachers using technology for professional development during organizational change in the educational field. To gain this understanding, I focused on the lived experiences of teachers and how they used technology for professional development to implement the English Language Arts Standards and Mathematics Standards.

Purpose of the Study

The purpose of this qualitative phenomenological study was to get an in-depth understanding of the lived experiences of teachers as they went through the process of implementing organizational changes during the diffusion of the new state standards. Using interviews, my goal was to explore how teachers describe their experiences during

the diffusion of innovation process. I focused on the experiences of teachers during the diffusion process and the web-based professional development they received to implement the new state standards. This study adds to the knowledge base regarding diffusion of the English Language Arts Standards and Mathematics Standards and the web-based professional development used to implement those standards. It also contributes to scholarly understanding of teachers' perceptions regarding professional development to implement an innovation during an organizational change. This study thus provides insights into what works and what needs to be improved in regard to professional development for implementing an innovation, which will help to provide a framework for educational organizations to implement professional development for a systemic change.

Research Questions

I used the following two research questions (RQs) to guide the study.

RQ1: What are the perspectives of teachers on how web-based professional development has impacted the implementation process of the English Language Arts Standards and Mathematics Standards?

RQ2: What are the perceived barriers and the challenges faced in the attempt to make the web-based professional development for the implementation of the new state standards successful?

Conceptual Framework

Rogers's (1962) diffusion of innovation theory was the conceptual framework for this study. This theory addresses the concept of change and the role of new methods

communicated over time to members among a social system. Further, research of Rogers's theory by Matulich et al. (2008) aided in educational reform. Matulich et al. contended that a paradigm shift occurs in educational practice over time and teachers must make a shift in their thinking when educational innovations are presented. Rogers (2003) contended that there are four identifiable elements in every diffusion of innovation: the social system, the innovation, communication channels, and time. Educational leaders must manage these elements closely. The communication channel in which an innovation is conveyed varies according to the organization, its resources, and its leaders. The time it takes to diffuse an innovation is dependent on many factors—leadership, organization structure, implementation methods, and organizational resources—but is not limited to these factors. In this study, this framework provided guidance in analyzing how technology is used for professional development, how the new state standards diffused, and how the four elements of diffusion of innovation were managed.

Nature of the Study

I conducted this study using a qualitative framework and a phenomenological approach because the lived experiences of teachers during a systemic change caused by diffusing an innovation had yet to be explored. This approach is consistent with phenomenology (Bakanay & Çakır, 2016), given that the concept investigated is the experiences of teachers during the organizational change and diffusion process. Consistent with qualitative research, my primary focus was on understanding the lived experiences of teachers using web-based professional development in one district during

the implementation process of the English Language Arts Standards and Mathematics

Standards . Data was collected using open-ended interview questions from elementary

school educators with at least 4 years teaching experience in the district who described

their experiences as they went through the process of implementing the organizational

changes during the diffusion of the new state standards. I used constructs from the

diffusion of innovation theory to analyze the data and present the lived experiences of

teachers during the organizational change and diffusion process. Specifically, I focused

on the impact their professional development had on their pedagogical practice. I used

descriptive analysis to identify the English Language Arts Standards and Mathematics

Standardsimplementation processes district leaders communicated as vital. I aimed to get

an in-depth understanding of the lived experiences of teachers as they went through the

process of implementing the organizational changes and the diffusion of the new state

standards. This single-phenomenological study addressed the early, middle, and late

phase of the implementation and diffusion of the new state standards.

Definitions

Professional development: An intensive, sustained, and comprehensive approach "to

improving teachers' and principals' effectiveness in raising student achievement"

(Learning Forward, n.d.) that is aligned to rigorous standards and school improvement

goals. Professional development takes several forms including face-to-face

workshops/training, professional learning groups (PLCs), the train-the-trainer model, and

web-based professional development.

Web-based professional development: Professional development delivered over the internet or through an organization's intranet (Chamers & Lee, 2004).

Common Core State Standards: A set of academic content standards for grades K–12 in English language arts and math, published by the Common Core State Standards Initiative in June 2010 (www.corestandards.org).

Organizational change: Adaptation of an organization's structure, processes, procedures, and resources (Bolman & Deal, 2008).

Diffusion of innovation: "The process in which an innovation is communicated through certain channels over time among the members of a social system" (Rogers, 2003, p.5). It is "a kind of social change, defined as the process by which alteration occurs in the structure and function of a social system" (Rogers, 2003, p.6).

Assumptions

As the researcher, I assumed that the participants would answer all questions asked during interviews honestly and that they believed their answers would be recorded with accuracy and kept confidential. I also assumed that the answers from volunteer participants were from their experiences of the activities and events they participated in during the implementation phases of the new standards. These assumptions were important because honest responses are critical to the trustworthiness of qualitative research. A further assumption was that the information from this study is representative of other schools throughout the state with similar demographics. This assumption was necessary (with regards to transferability and generalizability) to this study based on the

trustworthiness of the data and the analysis of the perceptions that emerged from teachers' in-depth descriptions of their experiences during the diffusion process.

Scope and Delimitations

The purpose of this study was to gain an in-depth understanding of what educators' experience throughout the implementation of the English Language Arts Standards and Mathematics Standards in one school. Specifically, I focused on teachers' experiences as they participated in web-based professional development during the diffusion of the new state standards and implementation of organizational changes. The scope of this study included one suburban elementary school where the entire staff is expected to fully implement the new state standards.

This study was delimited by time, resources, and location. Data was collected from a single school location in one of the largest school districts in a Southeastern state. To make the study manageable in scope, the number of participants was delimited to six. In addition to the location of participants, the participant pool was further delimited based on their years of teaching experience. Teachers with less than 4 years of teaching experience were excluded since they were not working in the district as a teacher during the time of the initial implementation of and professional development for the standards reform.

Limitations

A limitation of this study was the data that I collected. Reviewing and analyzing documentation from the district or state was not possible because there is very little documentation and the implementation is still in the initial stages. Therefore, data

collection was limited to interviews. I collected and analyzed the data, which presented potential researcher bias. Likewise, my experience as a classroom teacher during the implementation process had the potential of biasing my interpretation of the collected data. To address these biases, I used a researcher's journal throughout the study to record my reflections and any problems encountered.

Transferability was limited by the sample population, which only included teachers with at least 4 years teaching experience from one elementary school location. To address the limited transferability issues, interviews were conducted with teachers in a range of grade levels. Transferability may be limited to schools with the same grade levels, the same demographics, and within the same district based on professional development provided to teachers by the district. These limitations did not allow this research to represent the population of the 67 school districts across the state.

I did not take into account the location of the school, the demographics of the students, and the amount of parental support the school received. However, these factors may affect the overall implementation of the new state standards in a school. The impact of these factors was beyond the scope of this study; however, they should be explored in future research studies. Finally, teachers may provide answers they think the researcher or their principal want to hear, and explicit questions may not have been asked or answered. To address this, I informed the participants that neither their names nor their specific responses would be given to their principal. Additionally, participants were asked if they would like to add anything to their responses that I did not ask.

Significance

The implementation of the Common Core State Standards (CCSS) created a social change across the United States. In the educational field, as social change occurs to improve the education of all students. The CCSS was created by the NGA Center and the CCSSO (2010) for that purpose. Although school reform ultimately affects the students, researchers have not extensively addressed how it affects teachers. Specifically, teachers' experiences with professional development—especially web-based professional development—during a systemic change has been under-researched (Chien et al., 2012; Maunsell, 2014; Whitaker et al., 2007; Zacher & Aukerman, 2014).

The reform efforts of the CCSS has wide ranging implications (CCSSO, 2010) for all participating states adopting the standards. However, this change was implemented individually by states, and within those states individually by districts and schools. This study is significant because it provides scholarly knowledge of the perceived professional development needs of teachers during the diffusion of innovation process. This knowledge will further scholarly understanding of how to address the professional development needs of teachers during the diffusion of innovation process by identifying the conditions under which professional development can successfully aid in the diffusion of innovation. Further, this project shows how one district communicated organizational change processes and provided teachers web-based professional development during the diffusion of the innovation process for the English Language Arts Standards and Mathematics Standards. The results from this study will aid the other 40-plus states that adopted the CCSS in their efforts to implement this change to better

educate their students. The results of this study will aid researchers and district leaders in understanding the web-based professional development, communication strategies, and technological tools employed during organizational change processes of K-12 organizations. It will also bring about insights into theory, research, and model building of web-based professional development from the perspectives of teachers during the innovation process. The focus was specifically on the lived experiences of teachers and the web-based professional development they received throughout various stages of the change process associated with implementing the English Language Arts Standards and Mathematics Standards.

Summary

Chapter 1 included an overview of a school district undergoing the implementation and diffusion of a state-wide innovation and defined the framework of this study. In it, I discussed professional development for educators utilizing web-based technology for a systemic change, focusing on implementation methods and support systems for the change. Additionally, I discussed the methods I used in this phenomenological study while highlighting the methods organizations use to diffuse an innovation (the new state standards) and implement web-based professional development for teachers. Rogers's (2003) diffusion of innovation theory was the foundational framework for this study. The purpose of this study was to understand the lived experiences of teachers going through the diffusion of a state-wide innovation in their district.

Chapter 2 contains a review of the literature on web-based professional development, communication, and the organizational change process. It further details the use of diffusion of innovation theory in education. Chapter 3 presents the research design and format in detail. Chapter 4 contains the results of the study, and Chapter 5 includes interpretations and conclusions drawn from the data, and recommendations for further research.

Chapter 2: Literature Review

The purpose of this study was to understand the lived experiences of teachers going through the process of organizational changes and associated with new state educational standards in a Southeastern state. The central research questions were:

RQ1: What are the perspectives of teachers on how web-based professional development has impacted the implementation process of the English Language Arts Standards and Mathematics Standards?

RQ2: What are the perceived barriers and the challenges faced in the attempt to make the web-based professional development for the implementation of the new state standards successful?

The problem is that although there is a great deal of evidence on organizational change processes (Dominguez, Galán-González, & Barroso, 2015; Eilers & D'Amico, 2012; Wright, 2013; Zacher & Aukerman, 2014), currently there is a lack of evidence indicating the experiences of teachers and the web-based professional development they participate in during an organizational change process.

The diffusion of innovation process is employed by organizations–knowingly or unknowingly–as they go through a systemic change. Most educational reform efforts have taken a top-down approach (Lee, 2011; Toscano, 2013), and education has been in constant reform (Polikoff, 2013). The goal of reform efforts is to improve student learning (Donnell & Gettinger, 2015). In recent years, the latest reform effort has been the CCSS, which has been adopted by 90% of the states and the District of Columbia (CCSSO, 2010). Some researchers have found that professional development is the key to

successful implementation of the CCSS (Abika & Wilkinson, 2015; Bostic & Matney, 2013; Burks et al., 2013; Collins & Laing, 2015; Lesaux et al., 2014; Storandt et al., 2012). Other researchers have contended that organizational change and the culture of the organization will make the difference (Adelson & Dye, 2015; Jamieson; Lesaux et. al., 2014). Still other researchers have claimed that effective communication of the innovation is paramount to successful implementation (Maunsell, 2014; Smith, 2012; Surrette & Johnson, 2015). Perhaps it's a combination of professional development, communication, and organizational change that will ensure the success of this innovation process.

In this chapter, I first describe the strategy I used to find recent research on diffusion of innovation in K-12 settings. Then I describe the conceptual framework that guided this study. Next, I provide an overview of literature on how K-12 organizations implement new state standards and communicate change, and how researchers have developed an understanding of organizational change implementation. In the process, I identify gaps in the literature associated with the experiences of teachers and the professional development they receive during the innovation diffusion process.

Literature Search Strategy

To gather materials for this literature review, I accessed several academic databases including EBSCO, ERIC, ProQuest, Sage Premier, Academic Search Complete, and Education Research Complete. I limited the searches to articles published between 2010 and 2018. However, I have included the work of principal theorists dated before 2010 because their work was necessary for establishing a foundation for the topic.

Terms relevant to the broad topic of organizational change were chosen. Within the broad topic, the following search terms were used in the six databases: *diffusion, diffusion of innovation, change process, organizational change, organizational change processes K-12, change processes K-12, professional development, communication, leadership, systems thinking, the Common Core State Standards,* and *state standards.* After finding articles relevant to the conceptual framework, I read their abstracts to narrow the focus of the study. The focus was narrowed down to diffusion of innovation, professional development, organizational change, and communication.

Conceptual Framework

The conceptual framework of this study was Rogers's (1962) diffusion of innovation theory. The theory addresses the concept of change and the role of new methods communicated over time to members of a social system. The diffusion of innovation theory has its roots in sociology and anthropology (Rogers, 2003). The four main concepts in Rogers's (2003) theory are characteristics of the innovations, communication, context, and time. Characteristics of the innovation was excluded from this research because the innovation is a top-down educational reform, making the innovation a mandated decision and not one that allowed teachers to experience the traditional innovation adoption process. However, the three remaining concepts of Rogers's theory, communication, context, and time were part of this study. Communication and context are relevant in that the organization had to use a means of communication not only to inform teachers of the innovation or context, but also to diffuse the innovation. Time is relevant in that the innovation process goes through stages

over time. In this section, I describe the diffusion of innovation theory, its relationship to school reform, and how it relates to this study. I also discuss how other researchers have used Rogers's diffusion of innovation theory as their framework to analyze technology implementation (Foulger et al., 2013; Mustafa & Al-Mothana, 2013; Vanderlinde and van Brask, 2011) and as a lens for understanding implementation of school reform efforts (Kunnari & Ilomaki, 2016; Sargent, 2015).

According to Rogers (2003), diffusion happens inside a social system. He noted, "The social structure of the system . . . can facilitate or impede the diffusion of innovations" (p. 24-25). The effectiveness of an innovation depends on whether the innovation can be assimilated by the social system (Saenz-Royo, Gracia-Lazaro, & Moreno, 2015). Assimilation by the social system depends on the kind of innovation-decision the system undergoes for the adoption of an innovation. There are three kinds of innovation-decisions: (a) authority, (b) collective, and (c) optional. Authority innovation-decision is when a few individuals who are powerful in a system make the decision to reject or adopt an innovation. Collective innovation-decision refers to the members of a system coming to a consensus about the innovation. Optional innovation-decision is when individuals choose to reject or accept an innovation independent of anyone else's decision. The fastest rate of adoption occurs with the authority innovation-decision (Rogers, 2003).

Characteristics of Innovations

The implementation of the new state standards is a top-down initiative. In a top-down initiative, mandates are set by the top managers and are expected to be

implemented by everyone else in the organization (Carney et al., 2016; Sargent, 2015).

Members in the organization do not provide input into any decisions concerning the

adoption or refusal of an innovation or its implementation (Rogers, 2003). Therefore,

Rogers's (2003) characteristics of innovation will not be a part of this study. Rogers

(2003) five characteristics of an innovation are: (a) observability, (b) relative advantage,

(c) complexity, (d) compatibility, and (e) trialability. The five characteristics are common

place in a traditional adoption of an innovation. Comparability and relative advantage

explain the need for the adoption to staff members, while trialability and observability

allow staff members to see the innovation in action, which helps to foster their adoption

of the innovation (Rogers, 2003). The states implementation of the English Language

Arts Standards and Mathematics Standards is a top-down initiative that followed an

authoritative innovation-decision process, which eliminates staff members' options to

adopt or refuse the innovation.

Stages of Innovation-Decision Process

There are five stages of Rogers's (2003) innovation-decision process. They

include (a) knowledge, (b) persuasion, (c) decision, (d) implementation, and (e)

confirmation. Knowledge is the starting point of the process, whereby individuals in an

organization are given information about the innovation. This leads to persuasion where a

mindset towards the innovation is developed, and then decisions regarding whether to

reject or adopt the innovations. The last two stages of the process are implementation,

where the innovation is implemented, and confirmation, where the choice to implement is

confirmed. These stages involve time—the time for individuals or systems to adopt an

innovation in a time-ordered sequence. This leads to the five innovative levels or adopter categories for innovativeness: laggards, late majority, early majority, early adopters, and innovators. Adoption rate is measured by time and is different for everyone. However, within a system the rate is "measured by the length of time for a certain percentage of the members of a system to adopt an innovation" (Rogers, 2003, p.23). Based on the adoption rate of the state, it can be construed that the state was either an early adopter or early majority with regards to adopting new, more rigorous state standards (FLDOE, 2010). However, when it came to implementation, professional development for educators, and implementation of the new assessments, the state fell short and can be considered as late majority or laggards. The state was not proactive during these phases; many states started implementation, professional development, and assessments before it did. Sixteen early adopter states worked together to set college and career ready standards; this Southeastern state was not one of them (Davis et al., 2013).

Organizational Change

During the diffusion of an innovation, an organization goes through several phases of organizational changes (Rogers, 2003) including prelaunch, launch, post-launch, and sustaining change. The phases vary in depth and time depending on the organization and the implementation plans laid out. With each phase comes challenges as described below.

Prelaunch. Rogers (2003) stated that under certain conditions, exceptions to the usual sequence of the stages of the innovation-decision process for an organization can be made. As I noted in the previous section, the normal progression in stages are (a)

knowledge, (b) persuasion, (c) decision, (d) implementation, and (e) confirmation. Some individuals never experience the persuasion stage because the decision stage precedes it. This can occur when individuals are ordered to adopt an innovation. The adoption of the CCSS was mandated; therefore, Step 3 in Rogers' innovation-decision process was moved to the first step, followed by knowledge, implementation, and confirmation. Persuasion was not a step in the innovation-decision process for the state. The state did not try to persuade anyone to adopt the standards; it simply adopted the standards and expected everyone to comply. Rogers calls this type of innovation is called authority innovation-decision.

    Launch. Rogers's (2003) organizational innovation process includes five stages: (a) matching, (b) agenda-setting, (c) redefining/reconstructing, (d) clarifying, and (e) routinizing. These five stages are divided into two actionable processes, initiation and implementation. The initiation process is covered by the first two stages, and the latter three stages cover implementation. During the launch phase, the focus is on implementation.

    Post-launch/sustaining the change. According to Rogers (2003), "Sustainability is defined as the degree to which an innovation continues to be used over time after a diffusion program ends" (p. 183). He further states that a higher degree of reinvention produces a greater degree of sustainability. Reinvention can be defined as the degree to which an organization changes or modifies an innovation during the process of its adoption and implementation (Rogers, 2003). In their research, Berman and Pauly (1975) found that schools that reinvented innovation suffered less discontinuance because the

reinvention met the circumstances of the schools, thereby leading to a greater rate of sustainability. Likewise, Rogers (2003) asserted that when an organization reinvents, the innovation sustainability increases.

Diffusion of Innovation and School Reform

Some researchers (Foulger et al., 2013; Mustafa & Al-Mothana, 2013; Vanderlinde & van Brask, 2011) have used the diffusion of innovation theory to analyze technology implementation in schools, while others (Sargent, 2015; Kunnari & Ilomaki, 2016) have used the diffusion of innovation theory as a lens to understand implementation of school reform.

Diffusion of Innovation and Technology Implementation

Mustafa and Al-Mothana (2013) conducted a qualitative case study to explain how female English teachers teaching in Jordan used interactive whiteboards (IWBs). Using Rogers's (2003) diffusion of innovation theory, the researchers examined the teachers' use of IWBs and their recognized traits that affected the teachers' decision to adopt IWBs at their school location. The study had four participants who taught English for Grades 6 through 8, and who had between 2 to 7 years of teaching experience. The researchers used semi-structured interview questions ascertain participants' degree of use and perception of IWBs for teaching. The authors also conducted teacher observations and reviewed lesson plans from the teachers for their data analysis. The interviews were recorded and coded by theme, then transcribed and reviewed by teachers for accuracy. Mustafa and Al-Mothana's research focused on the teachers' decisions to adopt the innovation based on Rogers' (2003) attributes of innovation. However, the researchers

did not address the experiences of teachers throughout the diffusion process. Knowing the teachers' experiences throughout an innovation adoption is needed to better understand the perceived professional development needs of teachers. In this study, I worked to fill this gap.

Mustafa and Al-Mothana (2013) found that the four participants in the study received training from the supplier of the IWB, and no training on using the IWB as an instructional tool. Three of the participants indicated that major barriers were their lack of knowledge of the tools, limited use of the IWBs, and lack of technical support. Despite the lack of training, the teachers used the IWBs daily and felt that the IWBs provided advantages for them and their students. Mustafa and Al-Mothana focused on Rogers's (2003) attributes of innovation to determine the perceived adoption decision of the teachers. The teachers saw the advantages of using the IWB, and they felt it was a compatible tool that would help them save time and effort. They also felt that the IWB was an easy tool to use. They were given the opportunity to voluntarily use the tool, and the opportunity to examine the tool during practice to determine its effectiveness. The authors contended that Rogers' (2003) attributes of innovation (observability, relative advantage, trialability, complexity, and compatibility) accounted for the teachers' adoption of the IWBs. Mustafa and Al-Mothana's research showed that when innovation implementations allow trialability (one of Rogers's attributes of innovations), they enable teachers to be more accepting and motivated to use the innovation. Despite the lack of training provided to the teachers to use IWBs for instruction, teachers were still more

receptive to the innovation because it was not mandated, and they had the ability to go through the attributes of innovation process.

Foulger et al. (2013) applied Rogers's theory of diffusion of innovation to their mixed-method study of faculty instructing teacher candidates in the use of mobile devices as part of their teaching practice during their pre-service classes. They sent the questionnaire to 228 faculty members in universities across the United states. Of the 228 questionnaires sent, they received 79 responses, a number they felt was low. The responses received was a good representation of the various regions across the United States. Their questionnaire consisted of several open-ended questions but started with one closed-end question asking faculty members to describe the efforts of their institution in helping pre-service teachers provide instruction using mobile learning technologies. Respondents had to choose a response that closely described how their institutions were adopting mobile learning. The researchers (Foulger et al.) applied Rogers's theory of adoption in formulating the responses as to the adoption method. The choices included: planning, beginning to explore, isolated instances, full curriculum, several instances, and considered but rejected. These choices are closely aligned with Rogers's (2003) stages of innovation-decision process: knowledge, decision, persuasion, confirmation, and implementation.

Foulger et al. (2013) sorted the questions by adoption method, then used a constant comparative method to analyze the open-ended question responses to identify and hone trends and themes. Their findings indicate that one institution considered but rejected mobile learning, stating mobile learning provided almost no value to learning.

Fifteen institutions indicated that they are beginning to use mobile learning, stating this level of adoption is a result of lack of faculty knowledge. Eight institutions are in the planning category, as they are evaluating and exploring the effectiveness of mobile devices. Twenty-one institutions indicated there were isolated instances at their location, noting that technology instructors incorporated mobile learning into their curriculum. Thirty-two institutions showed several instances, stating using mobile learning technologies were used in technology classes as well as methods classes. The last adoption method category used by Foulger et al. was full curriculum. Six institutions indicated this adoption method category, stating students are expected to design lessons using technology and faculty members as skilled in using mobile learning technologies. Foulger et al. identified all respondents as innovators, according to Rogers (2003) diffusion of innovation theory, with the exception of the institution that stated they considered but rejected mobile learning technologies. This research supports the need to use Rogers's (2003) diffusion of innovation process, when implementing innovations that affect teacher practice, similar to the findings of Mustafa & Al-Mothana, (2013). Foulger et al. acknowledged that they were not able to discover the breadth or depth of the integration of the innovation within the experiences of the participants. Perhaps the use of a questionnaire, limited their ability to discover the experiences of the participants. Their questionnaire did ask permission for follow-up. A follow-up interview with some of the participants may have revealed the breadth or depth of the integration from the experiences of the participants.

Vanderlinde and van Brask (2011) conducted a quantitative research study using Rogers' diffusion of innovation theory as their framework to gain teachers' perspectives of the innovation qualities of the information communication technology (ICT) curriculum they were implementing. The authors developed a measurement scale to measure the teachers' perspectives of the innovation attributes of the ICT curriculum. They received responses to their questionnaire from 471 primary school teachers. They discovered that over 50% of the participants hardly knew or didn't know about the new ICT curriculum. They felt this showed a lack of communication between teachers, schools, and educational policy makers, thereby indicating that a better method of communication was needed during the innovation. The authors discovered that professional development was a significant factor in teachers' perceptions of the innovation (β = .181, p<.001). Other significant factors included teachers' ICT competence (β = .257, p<.001), which was the strongest predictor of teachers' perceptions of the innovation attributes and the schools' ICT policy and vision (β = .199, p<.001). Vanderlinde and van Brask (2011) found that participants' professional development activities amounted to 18%, and teacher competency of the innovation amounted to 25%; these activities impacted the perception of the innovation for teachers. They contend that professional development and teacher knowledge of the innovation along with support during the implementation process is needed.

Diffusion of Innovation and Understanding Implementation

Sargent (2015) conducted a qualitative study using Rogers's diffusion of innovation theory as the framework for the study. Her focus was the diffusion of the

implementation of a new curriculum reform in the Chinese educational system. Much like the most recent educational reform efforts in the United States of the common core state standards, the Chinese new curriculum reform is a top-down initiative that was mandated (Sargent, 2015). Her study of a top-down initiative focused on the implementation of an innovation that radically changed the pedagogical practice of teachers in the classroom. Sargent (2015) surveyed 2,241 teachers from 192 elementary schools. She used descriptive statistics to analyze the data from teacher questionnaires. She measured the diffusion of innovation using the reports from teachers of their classroom practices promoted by the new reforms. Sargent (2015) used 17 outcome variables to identify the frequency and variation of innovative and traditional teaching methods used by teachers. Seventy-nine percent of teachers reported using small group work, 58 percent of teachers used learning inquiry, and 87 percent encouraged students to express their own opinion. Sargent's (2015) study also revealed that despite the high percentage of teachers using innovative teaching methods, 72 percent of teachers still used the lecture format, 50 percent used drills, and 62 percent used memorization and recitation. The innovation required extensive professional development during implementation (Sargent, 2015). The author's finding indicated that a successful implementation required various forms of professional development that was continuous throughout the implementation process. But more importantly, professional development that meets the perceived needs of the teachers. More research is needed to understand and address the factors and conditions which teachers perceive are adequate methods,

relevance, and length of web-based professional development needed for them to better understand the standards and adjust their pedagogical practice.

Kunnari and Ilomaki (2016) conducted a single case study investigating what teachers' experience throughout an innovation process (integrating research & development and education) with a focus on teachers' interest and enthusiasm in making changes. The authors used a semi-structured questionnaire with open questions and analyzed the data received using a qualitative content analysis. To explain causations of real-life process they used iterative explanation building. Their open-ended questions consisted of the following themes: "current circumstances related to integrating RDI and education, needs for development and support, obstacles that hinder the integration process and teachers' ideas for solving these problems, sources of enthusiasm and interest related to teachers' work" (p.170). The researchers sought volunteers from six Finnish universities who were already using the innovation. Across the six universities, forty-six participants were chosen. The researchers collected data over a three-month period during five different workshops, which was part of the research and development program. After analyzing the data Kunnari and Ilomaki (2016) found that eight of their participants indicated they needed an integration model that was shared and clear, seven participants felt they needed new structures for organizing learning, seven felt it would be a challenge to magnify new ideas about learning, and three teachers felt the need for transparency. Twenty-seven participants felt they needed new resources, and twenty-six indicated a need for a collaborative culture. Kunnari and Ilomaki (2016) found that fifteen participants felt that development was hindered by resistance to change, fourteen

participants attributed hindrance to a lack of collaboration and networking within the organization, and twenty participants felt that rigid timetables and inflexible curricula were hindrances to the integration process. One hindrance noted by a participant was that professional development is voluntary. Thirteen of their participants indicated that personal development, which included professional development was a significant factor for them, and twenty-six participants felt they needed more time, adequate resources, and clarity of processes to succeed and maintain interest and motivation in the innovation. Fourteen participants felt that work life should be improved, and nine participants felt that a balance between their personal life and teaching was vital. Overall, the authors contend that teachers' work conditions, personal development, and social interaction are interconnected. Although, the researchers made relevant interconnections regarding teachers' personal development, work conditions and social interactions. The interconnections do not provide an in-depth understanding of the perceived needs of teachers, with respect to web-based professional development to prepare them for going through the diffusion of innovation process.

Relationship of Theory to This Study

This study was based on the assumption that to understand the experiences of teachers as they go through the diffusion of innovation process, researchers and educational leaders should discover what teachers experience during changes processes and web-based professional development. Previous studies (Foulger et al., 2013; Kunnari & Ilomaki, 2016; Mustafa & Al-Mothana, 2013; Sargent, 2015; Vanderlinde and van Brask, 2011) have identified how innovation have been implemented, the motivation of

the teachers throughout an innovation (Kunnari & Ilomaki, 2016) and teachers'

perspective of technological innovations (Vanderlinde and van Brask, 2011), yet no study

specifically identifies the lived experiences of teachers going through the diffusion of

innovation process and their perspectives of the web-based professional development

they receive to implement the innovation. Diffusion of innovation theory also relates to

this study because adoption of an innovation is an individual act, even if the innovation is

mandated (Rogers, 2003). In the educational system, the implementation of an innovation

must happen in the classroom. However, the process to gain the knowledge of the

innovation and the know-how to implement the innovation is either helped or hindered by

external factors.

<div align="center">**Literature Review Related to Key Concepts**</div>

This phenomenological study focuses on the experiences of teachers and the

professional development they received during the diffusion and implementation of the

new state standards. Key concepts discussed will include the common core state

standards, professional development, web-based professional development,

communication, and organizational change.

Common Core State Standards

Porter et al., (2011) contended that significant changes in teacher professional

development must take place to implement the CCSS, which are quite different from

previous state standards. Luther (2015) asserted that technological demands on

educational personnel is required for the implementation of the CCSS. If this is the case,

then educational organizations must prepare educational personnel in the implementation

of not only the new standards but also in using web-based tools and resources for instruction.

In her research, Luther (2015) focused on several questions: "(1) what user filters were being implemented, (2) what Web 2.0 categories of tools were being used or supported by teachers, and (3) what open source tools teachers would be interested in implementing if tutorials were available for professional growth" (p. 50). The school-library media supervisors who represented the 24 districts across the state were provided with the survey. Seventy-eight percent of the individual who were sent the survey, responded, which amounted to 18 participants in the study. Luther (2015) analyzed, coded and grouped the comments into themes. The themes that emerged included the amount of use of technology, policy suggestions, access to Web 2.0 technologies, and use of additional Web 2.0 technologies not identified in the survey. These themes indicate that teachers are using technology to assist with the implementation of the standards, it also indicates that professional development is needed and should be provided based on the needs of the teachers. Luther (2015) used an online survey, with the first two questions providing example answers for the participants to choose from. Luther (2015) found that 66.67% of participants indicated the district used some form of filter. Sixty-two percent indicated filters were applied by role, such as principal, teacher, or student. The study participants used Web 2.0 tools that included video streaming resources, used by 94%; 88.9% used either wikis, blogs, or podcasting; 61.1% used network sites created by users, and 16.7% used social sites, and collaboration sites were used by 11.1%. The third question was open-ended but limited the participant to only answer in up to 250

characters. The third question asked what open source tools would interest teachers if professional development was provided. Limiting the participants' response to 250 characters to this open-ended question hindered the researchers' ability to gain in-depth perspectives from teachers regarding professional development they would be willing to attend. The online survey format and the lack of follow-up for clarification, further obstructed the perspectives of teachers regarding their own professional development needs.

In their quantitative research, Porter et al. (2011) compared the Common Core standards and the standards previously held by several states, including the state focused on in this study. They compared the common core state standards with the old state standards. The authors analyzed both sets of standards and the alignment of the previous state standards in reading and math to the Common Core standards across the grade levels from K-12. Additionally, they focused on a span of specific standards across grades levels 3-6. Porter et al. used a content analysis procedure called Surveys of Enacted Curriculum (SEC) to analyze the new state standards and assessments with the old state standards and assessments. This approach "employs a two-dimensional framework defining content at the intersections of topics and cognitive demands" (p.104). The authors then divided the data into general areas and then into topics. The data was then coded based on the intersection of topics and cognitive demand. Porter et al. then converted that data into proportions then averaged them across the content areas of Mathematics and English Language Arts. The results were used to calculate alignment. Porter et al. defines the alignment index as follows: alignment index $= 1 - [\Box |\, x_i - y_i|]/2$,

"where x_i and y_i stand for the proportion in cell i for documents x and y, respectively. The index ranges from 0 to 1, with 1 indicating perfect alignment (i.e., having 100% of the content in common)" (p.104).

When comparisons were made across grade levels K-12, Porter et al. (2011), found minimal alignment between the old state standards and the Common Core Standards for students in Grades 9 through 12 in the area of mathematics (.23) and no alignment with standards in Grades K through 8 for the state focused on in this study. When looking at multiple states the alignment ranged from .01 to .51 and averaged .25 in mathematics. For English language arts and reading (ELAR), the state focused on in this study showed an alignment of .38 at 2nd grade, .26 at 5th grade, and .37 at 8th grade. No alignments were found at the other grade levels. When looking at multiple states for ELAR, the alignment ranged between .10 to .48 and averaged .30 between states and the common core ELAR standards. To gain a better focus of the alignment, Porter et al. aggregated the standards for grades 3-6. The results showed an increase in alignment average for mathematics from .25 to .35 and from .30 to .38 in ELAR across multiple states. However, for the state focused on in this study no alignment was found for the aggregated standards for Grades 3 through 6. Despite the increase in alignment of standards across states when standards are aggregated for grades 3-6, Porter et al. indicated there are still substantial differences between the content of the common core state standards and the old state standards across states.

The noteworthy difference found between previous state standards and the new state standards, in Math and English Language Arts, is the cognitive demand. The new

state standards require a higher cognitive demand than the previous state standards across states (Porter et al., 2011). For mathematics, the cognitive demand for standards across the states focused on memorization, 12.11 percent compared to 9.50 percent for common core; and 48.82 percent on performing procedures across the states compared to 43.74 for common core. While the common core standards focused more on demonstrating understanding, 35.65 percent compared to 28.66 percent across the states. For ELAR, the common core standards focus heavily on analyzing, 33.35 percent compared to 16.47 across the states. With regards to state assessments, the average aggregated alignment for grade 3-6 was .34 for mathematics and .24 for ELAR across the states. Porter et al. (2011) did not report any specific numbers for cognitive demand alignments or state assessment alignments for each state. However, there findings indicate a lack of alignment between the common core standards and the standards for each state in their study when looking at content, cognitive demand, and assessments for mathematics and ELAR. This indicates that educators would have quite a bit of adjustment to make in their pedagogy. Likewise, the state educational systems and the districts must undergo significant systems changes to prepare teachers for full implementation of the new state standards and prepare students for the new assessments.

Implementing the Standards

Many challenges are faced by the states that have adopted the Common Cores State Standards. Although the 45 states and the District of Columbia have agreed to adopt the standards, their methods of implementation vary (Matlock et al., 2016; Ruchti et al.,

2013; Stair et al., 2016). With varying methods, an ideal framework to support stakeholders in all states and states supporting each other is a challenge.

In their mixed method research study Matlock et al. (2016) focused on the opinions of teachers concerning the CCSS and its implementation. They received responses to open-ended questions from 1,303 elementary, middle and high school teachers. The teachers were sent an email with an invitation to complete an online survey. The authors then conducted 28 follow-up interviews. They used a mixed mental model analysis. The initial measure of data was a seven-point Likert scale that was used to measure the attitudes of teachers towards their school and the CCSS. Matlock et al. analyzed their data using SPSS 20 and "principal component with a varimax rotation to assess" (p. 295) loading within factors. Additionally, a one-way ANOVA was used to investigate teachers views towards CCSS for each demographic characteristic. The characteristics investigated were, grade level taught and years of teaching experience. The researchers found a significant difference between teachers with 3 to 5 years of teaching experience and teachers with 21 to 25 years of teaching experience $(F (7803) = 4.252, p < .05, R^2 = .036)$. Teachers with 3-5 years of experiences had an optimistic view of CCSS with a median view score of 3.08, while teachers with 21-25 years of teaching experience had a median view score of 3.79. On their seven-point scale, Matlock et al. indicated that a smaller score showed a more optimistic view and a larger score represent a negative view. The two groups were the only groups showing a significance difference when looking at years of experience and their view of the CCSS. They also found that teachers who taught Grades pre-K through 2 held more optimistic views of the CCSS than teachers who taught Grades 3 through 12

(F (4, 806) = 11.815, p <0.05, R^2=0.055). Using a seven-point view scale, with a lower number being more positive and a higher number being more negative, Matlock et al. indicated that teachers in Grades preK through 2 had a median view score of 2.93 while teachers in Grades 3 through 12 had a median score ranging from 3.47 to 3.67. The significant difference was based on the grade level taught, teachers at a lower grade level had more positive views of the CCSS. Matlock et al. found that their mixed mental method analysis revealed three themes: disproportion of professional risk and rewards, a deficiency in meeting students' needs, and organizational marginalization. Teachers felt excluded from the implementation process, teachers felt that the interpretation of the standards were narrow, and their professional autonomy was restricted, and teacher evaluations were now being tied to the students' test scores. Despite some of the negative feelings, Matlock et al. contended that teachers had an overall optimistic opinion of the CCSS and their implementation. The authors (Matlock et al., 2016) concluded that more research is needed with regards to educational reform from the perspectives of teachers who experience the changes. My study fill's this gap.

In their quantitative research study Ruchti et al. (2013) focused on the resources secondary teachers believe are imperative for alacrity to implement the CCSS and if the PD model provided by the state meet the needs of the secondary teachers. The researchers collected data through an online questionnaire from 241 secondary teachers from multiple school districts in Idaho. They had two research questions that were analyzed individually. Their first question used descriptive statistics, which included mean and percentage for each Likert-scale response they received. The authors calculated

the responses using Microsoft Excel. For question two, they analyzed the responses to see

how they aligned with the supports indicated from their first question. The authors ranked

the responses from most to least important. The responses were a list of supports that

were predetermined and derived the context beliefs about teaching science instrument

(Ruchti et al., 2013). They divided the 27 supports into four categories: resources,

environmental factors, training and planning, and collaboration. The researchers did not

use inferential statistics, but rather, used descriptive data and percentages to present the

results of their research. Ruchti et al. found that 99 percent of their respondents strongly

agreed that collaboration with other teachers was a priority, professional development

was a priority, and teacher contribution and choice. They also found that 98 percent

strongly agreed that individual planning time was necessary, support from other teachers

and administrators. Of the four categories, the highest level of supports was in

collaboration and training and planning. Ruchti et al. findings indicated that although

CCSS was already in its implementation stage the teachers felt that they needed more

support to effectively follow through with the implementation of the CCSS. These

findings reveal the gaps in the knowledge of what teachers perceive as necessities for

their professional development when it comes to implementing new innovations. More

research is needed for K-12 organizations to understand the professional development

needs of teachers during a systemic change.

In their research of teachers' perception of the CCSS in agriculture Stair et al.

(2016) took a qualitative approach to answer their research questions. The researchers

conducted in-depth interviews of five teachers who were already implementing the CCSS

in their classroom. When asked about the implementation process in their schools three participants indicated that they received no training, one teacher had a full-time coach at their location, and one teacher participated in CCSS professional development for two years. Stair et al. discovered that although teachers were implementing the CCSS they did not fully understand the standards and one teacher stated that her classroom practice did not change. The individual was not doing anything different in the classroom. Overall the teachers' greatest concern was the lack of professional development provided to implement the new standards. Stair et al. also noted that there was inconsistency in professional development across the state. Much like the results from Ruchti et al. (2013) the researchers found that even though teachers were in the process of implementing the standards they needed more professional development to understand and effectively implement the standards in the classroom. Stair et al. acknowledged that a thorough understanding of how the new state standards are being implemented in other states is needed to determine if themes they identified are generalizable. My study provides perceptions and experiences from teachers from a state not in their study. In addition, my study also provides information from teachers as to the problems they perceive to be occurring in their state, district, and school location.

Professional Development

The purpose of professional development is to prepare teachers to teach students the content and skills required for the workforce and college by using relevant curriculum and instructional strategies to boost rigor and increase student achievement. However, the time allotted for professional development programs does not match the time needed for

teachers to gain the full breadth of content knowledge they require to teach their students (Bostic & Matney, 2013).

In their quantitative case study Bostic and Matney (2013) focused on understanding the teachers perceived needs while transitioning to CCSS Mathematics to design PD that is relevant and comprehensible. After sending out surveys to over 400 teachers across four different counties in a Midwest state in the United States, 148 K-5 teachers and 22 teachers from Grades 6 through 9 volunteered to participate in the study. The researches created two different surveys, one for elementary teachers and one for middle school teachers. In the surveys, teachers were asked their desired PD focus for content and pedagogy, and to rank in order the math domains they felt they needed PD in from greatest to least. To analyze the data collected, Bostic and Matney (2013) calculated the ratio and total responses for pedagogical domain and rank order and content. They then used that ratio to govern the proportion of participants for that response. Next, they determined the percentage rank order and totaled the values for an overall score for each content and pedagogical domain. Rather than reporting statistical results, the researchers used descriptive data and percentages to present the results of their research. Their findings prove the need for research on teachers' experiences with professional development to implement new English Language Arts and mathematics state standards. The proposed study will fill this gap. By understanding the experiences of teachers', district leaders will be able to provide effective professional development to meet the perceived needs of teachers.

Bostic and Matney (2013) results showed that elementary school teachers indicated a better understanding of the math standards ranked highest for pedagogy. For content, Operations & Algebraic Thinking and Numbers & Operations – Fractions ranked the highest. For middle school teachers, with regards to pedagogy, the highest rank was to assist students in reasoning and making sense of mathematics, followed by instructional strategies to promote student conceptual development. For content, teachers felt the need for PD focusing on modeling, which the students were asked to do throughout the state assessment for mathematics, followed by statistics and probability and geometry and measurement. It is their (Bostic & Matney, 2013) contention that despite the varying content needs among the different grade levels, all teachers in the study indicated a need for PD. The participants wanted PD focused on understanding the mathematics standards, instructional strategies on students' conceptual development, and helping student reason and make sense of mathematics. Similar to the finding of Stair et al. (2016) and Ruchti et al. (2013), teachers wanted professional development to better understand the standards.

In their mixed-method study Abika and Wilkinson (2015) focused on understanding district and state methods to promote lesson study for PD after the adoption of the Common Core State Standards. They analyzed PD policy data from the state of Florida Department of Education (FLDOE), PD policy documents from 41 districts, surveyed 41 professional development (PD) coordinators, interviewed five lesson study training organizers, and one education representative from the state. For PD, they used Knapp's policy instruments as an analytical and conceptual framework.

"Knapp identified four major policy instruments state and districts use for guiding, directing, and supporting teacher professional development—namely, (a) mandates, (b) inducements, (c) capacity building, and (d) system change (authority reallocation)" (p.77). According to Abika and Wilkinson (2015) system change was not used as part of the study since the state decided on the PD and districts had to use Race to the Top (RTTT) funds for implementation. Abika and Wilkinson (2015) analyzed the policy documents from FLDOE and districts within the state and coded policy relating to capacity building, inducements, and mandates. They then analyzed district data for frequency and descriptive statistics that they categorized as capacity building, inducements, and mandates. Although Abika and Wilkinson (2015) used quantitative analysis to analyze the survey data for frequency and descriptive statistics, they mainly used qualitative data to interpret the results. From the interviews and surveys three themes emerged: training, time constraints, and compliance. It is Abika and Wilkinson's (2015) contention that the state and districts current organizational structure and routines pertaining to PD influenced their application of lesson study.

The state required Persistently Lowest Achieving (PAL) schools to employ lesson study with the assistance of a local education agency. The schools were required by the state to modify their schedule and do one lesson study a month per subject area or grade level. This amounted to only 23 districts, which was only 2% of the schools in the state (Abika & Wilkinson, 2015). However, other schools submitted applications to implement lesson study, which totaled 17% (41 districts) of the schools in the state implementing lesson study for the 2012-2013 school year. Not all the schools who participated in lesson

study followed the requirement set by the state (Abika & Wilkinson, 2015). Based on survey data, of the 23 districts required by the state to implement lesson study 12 districts required one lesson study per year, 10 districts required two per semester, and a single district requiring monthly lesson studies are required by the state.

Abika and Wilkinson (2015) found that a few schools were required to implement lesson study by the state, the districts mandated more. In total, only 17% of all schools in Florida were compelled to practice lesson study. In a true lesson study, all schools would implement the practice. However, according to Abika and Wilkinson (2015) the practice of one PD program is not the norm for schools in the United States. Based on data from their study Abika and Wilkinson (2015) indicated that to promote lesson study, the districts and state employed mandates. However, they provided limited investing in capacity building and inducements. The state used a subcontractor lesson study that diffused lesson study into a simplified 2 or 4-day process. Lesson study was presented as an add-on to current PD that was aligned with the existing programs. Abika and Wilkinson (2015) contended that the state adapted process of lesson study PD fit within the current routines and organizational structures regarding PD. However, in a true lesson study implementation the organizational structure and routines are modified. With regards to capacity building on the district-level, fewer than 50% of the districts worked with external experts to build capacity, less than 40% engaged in capacity building at school locations. Of the 41 district coordinators surveyed, 61% perceived lesson study would provide benefits and would be effective, but time and limited funding would be a major challenge. The state representative interviewed indicated that capital was provided

statewide, for lesson study toolkit development and training. However, the PD

coordinators indicted they spent less than the amount originally stated in documents

reviewed by Abika and Wilkinson (2015). Their finding indicated a lack of understanding

by the districts, pertaining to lesson study; otherwise, they would have invested in

capacity building instead of mandating and providing short-term simplified trainings.

Abika and Wilkinson (2015) acknowledged that their study did not allow for the

understanding of how districts' and states' approaches to implementing the lesson study

innovation in Florida, influenced the teachers' experiences with the innovation. More

research is needed to understand how the states' and districts implementation process

influences the experiences of teachers with new innovations. My study identify the

experiences of teachers during the implementation and the diffusion of the innovation

process.

In their qualitative research, Burks et al. (2015) focused on teacher perceptions of

their preparedness to implement the standards and the PD they received. The study

consisted of thirty-five participants from Grades 6 through 12 in Texas, South Carolina,

Alabama, and Maryland. The participants received a questionnaire via email with open-

ended, Likert, and selected-response questions. Burks et al. used descriptive statistics to

determine teachers' levels of comfort with the CCSS's. Of the participants, they surveyed

the participants fell in two categories, 0-6 years of teaching experience and 7+ years of

experience. Of this, 71% had more than 7+ years of experience.

Burks et al. (2015) found that 57% indicated they were extremely comfortable or

comfortable implementing CCSS and 26% were extremely uncomfortable or

uncomfortable. Seventeen percent of the participants were neither uncomfortable or comfortable. When Burks et al. only looked at the participants with 7+ years of experience, they found that 32% were uncomfortable, extremely uncomfortable, or neutral. However, they found that 80% of the of the teachers with 0-6 years of teaching experience were extremely uncomfortable or comfortable implementing the CCSS. Burks et al. found that almost 47% of their participants surveyed stated that they attended 3 or more trainings related to the new standards. Sixty-four percent of the training was conducted at the school where the teachers worked. Despite receiving PD for implementing the new standards, 55% of the participants in Burks et al. study still felt they were not adequately trained to implement the new state standards. Burks et al. stated that they are not certain if a survey with more experienced teachers who have been through several educational changes affect the results, or if new teachers not present for the initial implementation of the standards affected the results. My study does not include teachers who were not teaching during the initial implementation. This allows for more precise results regarding the perceptions of teachers with professional development that they received to implement the standards, thus filling the gap.

To meet the training needs of the educational leaders, administrators, and teacher, districts use various strategies, including online sessions, face-to-face training, and train-the-trainer sessions (Jones & Dexter, 2014; Storandt et al., 2012). In the Jones and Dexter (2014) case studies of two middle schools, the participants were math and science teachers. The researchers used purposeful sampling to ensure a sufficient technology integration level. The authors focused on different modes of learning, combining formal,

informal, and independent learning with the use of technology. Jones and Dexter (2014) conducted focus groups with a mix of math and science teachers in groups, using semi-structured interviews. The researches transcribed the interviews and used a structured coding scheme of five primary codes and one supporting code. Jones and Dexter (2014) findings indicated that with regards to PD many teachers felt they were required to attend classes that were not useful. They wanted classes that were content specific. This finding is in agreement with Collins and Liang (2015) and Storandt et al. (2012) regarding teachers needing PD with content that it relevant to them. Teachers cited time constraints with district required PD. It was recommended that virtual sessions would be a better option. Jones and Dexter (2014) found that large scale PD was initially met with positive results, but teachers needed on-going support, instead of one all-day session.

Professional learning communities (PLCs) are also another professional development format that is widely used (Jones & Dexter, 2014). PLCs are a way for educators to receive professional development by a bringing together educators to deliberate on an innovation and customize it for their setting. Teachers reported that PLC's allowed for effective collaboration and on-going peer-support. However, some teachers reported changing schedules no longer allowed for meetings and others reported that required paperwork took away from the time needed for collaboration (Jones & Dexter, 2014). Informal PD also includes independent learning, Jones and Dexter (2014) found that teachers in their study used Google, Teacher Tube, and other teacher specific websites to aid in their independent learning. Teachers felt they benefited more from informal PD than the formal district required sessions (Jones & Dexter, 2014).

These findings (Collins & Liang, 2015; Jones & Dexter, 2014; Storandt et al., 2012) indicated that districts need to focus on what teachers deem as relevant, the modes that teachers prefer to learn in, and quality and quantity of time teachers need for PD. Collaboration among teachers is necessary for effective teacher professional development (Collins & Liang, 2015; Jones & Dexter, 2014; Storandt et al., 2012). Communities of professional development (COPs) and PLCs are noted for reducing isolation and encouraging professional growth (Jones & Dexter, 2014). "Professional development is a driving force for improvement of instruction and student achievement and one of the major agendas in federal educational reforms since the No Child Left Behind Act of 2001" (Abika & Wilkinson, 2015, p.74).

Even though professional development formats have changed considerably over the years, one-size-fits-all workshops continue to thrive (Abika & Wilkinson, 2015; Jones & Dexter, 2014). Abika and Wilkinson (2015) noted that their research of the state shows that the approach taken by the state and districts to scale up PD, amounted to increasing participant numbers without attending to the nature of the learning process. Limitations to training, such as time, resources, or condensing a five-day training into a short-term simplified two-day training, and the failure to modify the current organizational structure and routines to enable new processes limits the quality and effectiveness of teacher learning (Abika & Wilkinson, 2015; Burks et al., 2013).

Web-Based Professional Development

Web-based professional development is on the rise in educational organizations (Dobbs, Ippolito, & Charner-Laird, 2017; Peled, Medvin, & Domanski, 2015;

Storandt et al., 2012; Thoma, Hutchison, Johnson, Johnson, & Stromer, 2017; Vu, Cao, Vu, & Cepero, 2014). With many states implementing the common core state standards or their states modified version of the standards, state educational departments have provided web-based professional development to prepare their teachers for the implementation of the new standards. Educational organizations opted for the same benefits that web-based professional development has brought to other organizations. Benefits such as the vast cost savings of not paying teachers to go to a location for a face-to-face workshop if done during the summer months, the cost of paying the workshop facilitators, and the cost of paying substitute teachers and teachers if the trainings are done during the school day. Additionally, states believed the online environment offered a high-quality appealing option (Collins & Liang, 2015). For web-based professional development to be effective, the content needs to be relevant, high-quality and have effective delivery methods, adequate participation, and duration of the program, transformational learning for instructional practice, and follows an adult learning theory (Collins & Liang, 2015).

Storandt et al. (2012) conducted a yearlong mixed-methods case study using the PBS Teacher Line's PD model, with 94 Teacher Line instructors from various states across the United States. PBS Teacher Line is an independent provider of best practices for: K-12, higher education and industry. The researchers conducted online surveys with the 94 participants and phone interviews with nine of the 94 participants. The focus of their study was to determine the successful strategies for implementing PD to support online instructors and outcome that define PD effective. Storandt et al. collected

quantitative data from reflection logs, surveys, and rubric ratings and analyzed the data using descriptive analysis to identify trends. They correlated the learners' final grade with instructor quality to determine the relationship between instructor support and learner outcome. The authors organized and coded data from interviews using Grounded Theory to compare participant experiences. To form their conclusion Storandt et al. compared their quantitative and qualitative data looking at similarities and differences.

Storandt et al. (2012) found that 92 participants valued the ability to engage with other instructors within the PD course. They also found that 89 instructors indicated that this aided in their professional growth. Many of the participants indicated that the implementation of a combination of strategies such as PLC's sequential courses, mentoring, and digital library contributed to a successful PD. Based on positive learner outcomes, Storandt et al. contended that there is a positive relationship between effective PD and learner outcomes. Ninety-four percent of learners indicated that they could immediately apply what was learned from the course. Overall, Storandt et al. concluded that research tested strategies for teaching and learning, extensive modeling of new techniques, and problem-based learning opportunities offering immediate application are the strategies needed for successful implementation of online PD.

Collins and Liang (2015) conducted a mixed-method study on features of quality online teacher professional development (OTPD) in a formative instructional practice (FIP) program in a Midwestern state, focusing on the perspectives of teachers participating in the online teacher professional development program. The researchers used a survey research method using 21 Likert scale items and 8 open-ended questions.

An online survey was used which was developed by the FIP program external evaluators. Collins and Liang had eight hundred ninety-five participants in their study, consisting of 68% classroom teachers and 31% administrators and support staff. The authors used descriptive analyses for the Likert scale questions and used frequency and percentages to determine the participants' opinions of key factors of the OTPD. For the open-ended questions Collins and Liang used thematic coding and reflective analysis. They also applied inductive process to organize response patterns.

From their analysis, Collins and Liang (2015) discovered five themes: delivery quality, online features, and content relevance, transformational learning, duration and online participation, and honoring characteristics of adult learners. For content relevance 42% of the participants indicated that they can immediately implement activities in their classroom shown in the modules, 47% stated that their professional concerns were answered by the modules. With regards to features and delivery quality, 61% said it fit their schedule, 68% indicated ease of use, and 21% said it was engaging, 30% said they could not stay motivated. For transformational learning Collins and Liang noted that 74% set goals, and 21% learned new technology skills. For online participation and duration 76% spent four hours or less using the modules, 14% spent more than four hours, and 73% said they experience information overload. With regards to honoring characteristics of adult learners Collins and Liang stated that many participants responded to the open-ended questions stating the FIP PD did not provide them with substantial information, enhanced content, pedagogical, or technical knowledge. Collins and Liang noted that the online implementation was a one size fits all and the PD program developers did not take

into consideration the prior knowledge of the participants. Collins and Liang contended that this state's OTPD was inadequate in its design, as no encouragement or fostering of online professional interaction, learning communities, and information sharing was available. Participants liked the convenience of online but felt isolated and missed face-to-face PD or the ability to have discussions after completing a module. In addition, a small-scale implementation to test quality and effectiveness may have provided better insight instead of a full-scale statewide implementation (Collins & Liang, 2015). Other studies supporting the five qualities that Collins and Liang identified in their research are discussed below.

Content Relevancy. For teachers to be able to effectively implement the new state standards the content of their professional development must be relevant. In their study, Burks et al., (2015), as described in the section on professional development, found that 55% of teachers revealed that they did not feel that the professional development that they received in preparation for implementing the new state standards prepared them. The content of any professional development in preparation for the implementation of the new state standards needs to prepare teachers for all the changes that the new state standards indicates (Collins & Liang, 2015; Storandt et al., 2012). The major difference between the common core state standards previous state standards is the focus on text complexity, and the cognitive load that is required be the common core state standards (Porter et al., 2011). Teachers needed professional development for these two areas. Additionally, there were standards in ELA that were not in previous standards that are more focused. Teachers needed to understand how to teach these standards to their

students. Professional development was required to effectively implement the changes across all grade levels (Collins & Liang, 2015; Storandt et al., 2012).

Online features and Delivery Quality. Online PD is lauded for its convenience and on-demand features. In their research, Collins and Liang (2015) contended that teachers prefer online PD because it required no travel and modules can be viewed at any time. However, many online PD participants from their study stated that they would have preferred face-to-face PD (Collins & Liang, 2015). Yet, despite their participants receiving face-to-face PD, Burks et al. (2015) found most teachers felt they were not prepared to teach the standards.

Online Participation and Duration. Through their research Collins & Liang (2015) found that only fourteen percentage of participants in the statewide PD program spent more than four hours using the modules. Also, thirty percent of the participants indicated that they could not stay motivated to go through all of the content, and a small percentage felt it was difficult to complete the modules on their own. A majority of the participants of online PD found that interactive content and videos enabled ease of use, despite the ease of use seventy-three percent of the participants felt they suffered from information overload.

Transformational Learning for Instructional Practice. Collins and Liang (2015) concluded in their research that less than fifty percent of PD participants found the content of the statewide professional development program relevant to their classroom instructional practice. Likewise, less than half of the participants agreed that the content

they were taught could easily be adapted in their classrooms. Only a quarter of the participants found the content engaging.

Adult Learning Theory. The premise of adult learning is the life experiences and connections made from those experiences. The main adult learning theory most thought of and used in professional development is andragogy (Goddu, 2012). Other adult learning theories include experiential, narrative and self-directed learning. Narrative learning focuses on story telling while experiential learning allows the instructor to provide the learner with a situation to interpret, analyze and resolve the situation. Self-directed learning allows the learner to take control of their learning while using their personal experience where applicable in the lessons being taught (Goddu, 2012). Each adult learning theory mentioned allows the adult learner to apply their personal experience to their learning. However, not all adult learning theories are suited for professional development during organizational changes.

A more recent learning theory is communities of practice (COPs) defined by Jones and Dexter (2014), as discussed in the section on professional development, as informal groups of practitioners coming together to work together and share information on problems of practice. Groups such as these are formed all the time throughout the educational system. COPs are similar to PLCs. However, COPs are not formed by schools or district, making the learning activities informal (Jones & Dexter, 2014). The benefit of this style of learning to teachers is that they get to choose the content they want to learn as well as how they will learn it. From their research, as described in the section on professional development, Jones and Dexter (2014) concluded that districts and

teachers would benefit if districts implemented district led PLCs while supporting

teachers employing the COPs method.

Communication and Organizational Change

With any change, communication is an essential component to affecting positive

change. How educational leaders communicate with stakeholders aids the progression of

the change an organization undergoes (Durand et al., 2016; Maunsell, 2014). Maunsell

(2014) conducted a qualitative study, interviewing education leaders in Georgia, Florida,

New York, Texas, Tennessee and Virginia. The focus of the study was to uncover how

educational organizations in these states communicated the change in assessments

relating to the CCSS. After conducting interviews with education leaders, Maunsell

(2014) identified eight strategies that can be used by state educational organizations to

communicate changes regarding the CCSS to stakeholders within their state. Maunsell

(2014) found that open dialog builds trust and all stakeholders need to be a part of the

conversation. In addition, two-way communication is needed throughout the process.

Educational leaders need to get their message out, however the needs of parents and

business partners must also be heard. Making sure that all members within the

educational system have the same understanding of the changes is important. Maunsell

(2014) found that superintendents in Florida provided principals with talking points that

they could share with parents. The use of existing communication structures and methods

was essential. Maunsell (2014) found that the PTA in New York and Kentucky made sure

parents were provided with information. New York's teacher union also provided

essential details to teachers through newsletters. The message must be simple and clear,

and specific to the audience, and the method of the message matters; newsletters, brochures, parent guides, focus groups and emails are all ways in which the changes were communicated across the states (Maunsell, 2014).

Durand et al. (2016) conducted a mixed-method multiple case study, which was a part of a larger study. For this part of the study they focused on the strategies leaders used for adoption and implementation of the CCSS. Case studies were conducted in nine elementary schools throughout the state of New York. Of the nine schools selected, six of the schools performed higher on state assessments than the other schools, which they called "odds-beating schools" because they performed higher than expected based on student demographics (Durand et al., 2016). The other three schools were typical schools, who performed on average. The researchers did not include low-performing school as those schools were going through state intervention programs. Durand et al. conducted interviews with district superintendents asking open-ended questions, using a semi-structured interview protocol. The researchers used deductive and inductive processes to analyze the data, they also employed triangulation to determine the evidence of themes. The three themes were further explored: proactive and adaptive leadership, increased organizational readiness for change, and using different strategies for implementing reform. They compared and contrasted themes between the higher performing school and the typical schools.

Durand et al. (2016) found that in every instance the leadership strategies used at the "odds-beating schools" assisted stakeholders in preparation for the implementation of the CCSS. District leaders in "odds-beating schools" used proactive and adaptive

leadership strategies. These districts established system wide programs and communications to implement the CCSS. According to Durand et al. proactive leaders anticipate changes, develops organizational capacity and readiness, and helps organizations adapt innovations into current structures. Durand et al. indicated that the six "odds-beating schools" started implementing changes before the state set the mandate to adopt the new standards. The researchers indicted that none on the typical schools made plans before the state mandate. They also indicated district leaders of all "odds-beating schools" started planning CCSS curriculum within the schools. Durand et al. reported that all "odds-beating schools" used at least one and sometimes a combination of bridging, buffering, and brokering strategies. According to Durand et al. bridging strategies build trust within the organization, buffering strategies allows leaders to shield stakeholders from external demands, and brokering strategies allows leaders to make arrangements with others during organizational change. Five of the six superintendents and assistant superintendents of "odds-beating schools" used regular and consistent communication with school administrators and teachers, providing clear and coherent messages. None of the superintendents of the typical schools used bridging strategies, however two assistant superintendents of the typical school did use bridging strategies. To some degree district leaders of all schools within the study employed buffering or brokering strategies (Durand et al., 2016). These strategies aligned with the readiness for change theme that emerged from Durand et al. findings. For the last theme, using different strategies for implementing reform, district leaders did various things such as shift resources for professional development, changing teachers schedules to allow for collaboration, and

making the implementation timeframe flexible. Five of the six "odds-beating schools" allowed a few classrooms at a time to implement the CCSS with professional development. Overall, Durand et al. findings showed a set of strategies (bridging, buffering, and brokering) that could be used by education institutions to guide their organizational change processes.

When an organizational change occurs, one of the key components of successful change is how that change, and its various components are communicated to all affected parties (Maunsell, 2014). Agreeing with Maunsell (2014) Durant et al. (2016) contended that extensive communication both internally and externally is required from the superintendent, board members, and operational and academic district leaders. A well thought out communication plan highlighting specific content, delivery methods, and spokespeople are essential for successful communication of an innovation. Teachers and district personnel will need in-depth information, while parents and community partners will need to hear less technical information (Maunsell, 2014**).** The delivery methods can also be key to the audience's acceptance of the message as well as the spokesperson who provides the information. The right spokesperson should address the various stakeholders in a manner they are most receptive in.

In addition to successful communication of the innovation during an organizational change, the methods for implementing the innovation is key to a successful diffusion process. Per Ruchti et al. (2013), as discussed in the section on implementing the standards, support from school administration in ensuring capacity building of all teachers is necessary, which agrees with Durant et al. (2016) stance on

teacher development. Likewise, the use of various professional development modes as stated by Durant et al. is in agreement with Jones and Dexter (2014), as discussed in the section on professional development, and Collins and Liang (2015), as described in the section on web-based professional development.

Summary and Conclusions

This chapter included a review of literature related to the common core state standards reform initiative, professional development provided to teachers for implementing the standards, and the communication and organizational changes implemented by organization for implementing the standards. The research strategy to search for current literature was described. In relation to the conceptual framework, the connection of Rogers's (2003) diffusion of innovation theory was presented. The literature review included an analysis and synthesis of current research on educational reform through the diffusion of an innovation. Additionally, the literature review included an analysis and synthesis of recent research related to the implementation of the common core state standards. Finally, this chapter included analysis and synthesis of research related to how educational organizations can effectively implement the common core state standards and provide professional development to their teachers to strengthen the diffusion process.

Several themes emerged from the review of literature. One major theme was that educational reform is a slow and a consistent top-down process (Abika & Wilkinson, 2015; Durant et al., 2016; Matlock et al., 2016; Maunsell, 2014; Ruchti et al., 2013). Despite the consistent top-down process, educational leaders have yet to realize that the

top-down consist process of reform will not provide the desired results. According to Lee (2011), top-down models do not work, which is known based on previous educational reform efforts. Another theme was that teachers felt they needed professional development relevant to the content they taught and their experience level and the opportunity for multiple methods of PD (Abika &Wilkinson, 2015; Collins & Liang, 2015; Durant et al., 2016; Jones & Dexter, 2014; Stair et al., 2016). The final theme was that teachers wanted extensive PD to better understand the standards and adjust their pedagogical practice to meet the needs required of the new standards (Burks et al., 2015; Porter et al., 2011; Strandt et al., 2012). With any reform effort changes are required. With the adoption and implementation of CCSS the changes were multifaceted. Research highlights the many changes that affected all grade levels including curriculum, assessments, and the pedagogical practice.

This study addresses the research gap concerning the lived experiences of teachers and their perspectives of the web-based professional development they received to implement the new state standards. A qualitative phenomenological study was the best approach because in-depth interviews with teachers provides a deeper understanding of teachers' experiences. The top-down process of educational reform efforts has yet to provide desired results. This top-down process, mandated to teachers, is consistent and slow (Abika & Wilkinson, 2015; Durant et al., 2016; Matlock et al., 2016; Maunsell, 2014; Ruchti et al., 2013). Mandates do not allow teachers to provide input or critique in the adoption or implementation process of the innovation (Carney et al., 2016; Rogers,

2003). Yet, teachers must implement the innovation and are accountable for student achievement using the innovation.

When a state or district mandates an innovation, professional development usually occurs (Davis et. al, 2013; Jones & Dexter, 2014; Lesaux et. al, 2014; Marrongelle, Sztajn, & Smith, 2013; Patton et al., 2015). However, educational organizations do not seek to understand the perspectives of teachers regarding their professional development. If teachers are held accountable for the success of their students based on an innovation, then their professional development needs should be addressed. According to Abika and Wilkinson, 2015; Collins & Liang, 2015; Durant et al. 2016; Jones and Dexter, 2014; Stair et al. 2016, teachers felt they needed professional development that was relevant to the content they taught, adequate for their experience level, and that provided opportunity for multiple methods of learning. In addition, researchers (Burks et al., 2015; Porter et al., 2011; Strandt et al., 2012) found that teachers wanted extensive PD to aid in adjusting their pedagogical practices. To effectively implement educational reform, where students are successful, and teachers' pedagogical practice is continually flourishing, educational organizations need to understand teachers' experiences as they go through professional development, so they can create effective frameworks that meet the needs of the teachers ensuring success of the students, which is the goal of educational reform.

Chapter 3 is a description of the research design, specifically phenomenological study and the rational for selecting the design and my role as a researcher. This chapter also includes the description of the methodology of the study with regards to participant

selection, instrumentation, data collection, and data analysis. Issues of ethical procedures

and trustworthiness related to qualitative research is also discussed.

Chapter 3: Research Method

In this chapter, I describe the research design and approach that I took in this study as well as the rationale for choosing this approach. I also describe my role as researcher, the participants in the study, the search instrument, and the data collection methods I used. This chapter also includes a description of data analysis and discussions of ethical protection of participants, trustworthiness, and dissemination of findings.

The purpose of this qualitative phenomenological study was to get an in-depth understanding of the lived experiences of teachers as they went through the process of implementing organizational changes and the diffusion of new state standards. This study adds to scholarly knowledge on the diffusion of the English Language Arts Standards and Mathematics Standards, and on the professional development used to implement these standards. This qualitative phenomenological study addresses the gap in understanding the lived experiences of teachers and their perspectives of the web-based professional development they received to implement the dissemination of new state standards.

Research Design and Rationale

I used the following two research questions to guide the study.

RQ1: What are the perspectives of teachers on how web-based professional development has impacted the implementation process of the English Language Arts Standards and Mathematics Standards?

RQ2: What are the perceived barriers and the challenges faced in the attempt to make the web-based professional development for the implementation of the new state standards successful?

In the study, I focused on the experiences of teachers during organizational change and the diffusion of new state standards using web-based professional development. The conceptual framework of this study was based on Rogers's (2003) diffusion of innovation theory. The theory addresses the concept of change and the role of new methods communicated over time to members of a social system. I used Rogers's theory constructs of a social system, the innovation, communication channels, and time to analyze the interview data for emerging themes.

For this study, I selected a qualitative approach, rather than a quantitative one for several reasons. Garnering an in-depth understanding of individuals' experiences and perspectives requires qualitative research (Yates & Leggett, 2016). Qualitative research allows researchers to study real-life issues and situations affecting participants (Bakanay & Çakır, 2016). Qualitative research also enables purposeful sampling that is required to elucidate the issue (Patton, 2002). A mixed-methods approach was not suitable for this study since statistical trends, a part of mixed methods research, do not adequately capture the experiences of teachers (Patton, 2002). Before choosing the phenomenological approach, I considered other approaches such as narrative study, ethnography, case study, and grounded theory. Ultimately, I determined that a phenomenological approach would be ideal for understanding teachers' experiences.

Connelly (2015) has defined phenomenological study as an investigation into real-life in a contemporary bounded system that is explored over time. My purpose for conducting a phenomenological study was to gather rich, descriptive data from participants about their experiences throughout the innovation diffusion process (see

Bakanay & Çakır, 2016). This phenomenological research included data collection during lengthy interviews with individuals to gain an in-depth understanding of their perspectives on the issue (see Yates & Leggett, 2016). This approach provided the opportunity to ask clarifying and follow-up questions relevant to the issue. Using a single instrumental phenomenological study approach to analyze interview data helped me elucidate the lived experiences of teachers during the organizational change caused by diffusing an innovation. Understanding teacher perspectives during the innovation diffusion process may help educational leaders implement and develop diffusion processes more effectively.

Role of the Researcher

My role as the researcher was to select participants, conduct teacher interviews, and transcribe and analyze those interviews. I was the only researcher collecting, transcribing, and analyzing the data for this study. Therefore, there was a potential for bias. My experience as a classroom teacher and a teacher leader made it necessary for me to reflect on my experiences with organizational change and its implementation. My experience in education includes 11 years as a classroom teacher, 5 of those years as a teacher leader, and an instructional coach. I have been a part of the school leadership team, served on the school's curriculum committee, and have been a member of the school advisory council. I have experienced organizational change as a classroom teacher attempting to implement the changes, as well as a teacher leader advocating change and training colleagues to implement changes. Since the organizational change and diffusion

process started while I was a classroom teacher, I have my own biases about aspects of the implementation that support or hinder the diffusion process.

To address these biases and improve the trustworthiness of this study, I used several strategies including peer reviews. These strategies will be further detailed later in this chapter. Additionally, I conducted interviews with teachers whom I had no previous relationships.

Methodology

In this section, I describe the sample size, rationale and criteria for participant selection, the instrument I used, procedures for recruitment and participation, and the nature of the data I collected. Additionally, this section includes an explanation of how I coded and analyzed the data, a discussion of how I improved the trustworthiness of this study, and description of how I ensured the ethical implementation of my study.

Participant Selection Logic

Phenomenological study requires the researcher to conduct lengthy interviews with participants to gain an in-depth understanding of their perspectives on an issue (Yates & Leggett, 2016). To conduct such interviews, the researcher must have feasible access to the participants (Maxwell, 2013). Access is limited to finding teachers who experienced the phenomenon. To find teachers who experienced this phenomenon, I delimited the population by work location and years of teacher experience. I contacted the school district in my county of residence by letter, phone, and email to find teachers to participate in the study. Classroom teachers who worked in the district for at least the

past 4 years would have been part of the initial phase of the innovation implementation, thus making them a population that experienced the phenomenon.

I selected a sample of six participants using the following criteria: (a) the participant must be a full-time teacher at the study site, and (b) the participant must have been employed as a classroom teacher for at least the past 4 years in the district. In a phenomenology study, a researcher can work with as few as 5 participants (Bhattacharya, 2017). According to Patton (2002), "Qualitative inquiry typically focuses on relatively small samples, even single cases ($n = 1$) such as Anna or Isabelle, selected purposefully to permit inquire into and understanding of a phenomenon in depth" (p.46). Brinkmann (2013) and Patton (2002) have both noted that in qualitative research, the number of participants is less important than the analysis of the data. Brinkmann (2013) further noted that a few participants may be enough to answer a researcher's question. I purposefully selected six participants from a list of teachers from the study site who met study criteria in order to have representation of two grade-level clusters: (a) primary Grades K through 2, and (b) intermediate Grades 3 through 5. Having representation from the two grade-level clusters allowed for insights from teachers at different grade levels.

To determine participant eligibility, the principal of the participating school was asked to identify teachers meeting the criteria. Once teachers are identified potential participants were asked study eligibility questions based on the above criteria. The information gained was used to describe the participants and was not used to draw conclusions. The criteria questions asked were their years of teaching experience, how

long they have worked in the county as a teacher, and the grade levels they have taught in the past four years. Potential participants were contacted and recruited through emails. In this study, I will interview 6 participants, the data will be saturated when no further information is offered by the participants.

Instrumentation

I collected data using an interview protocol (Appendix A) that I designed specifically for this study. The interviews were taped with permission from the participants and lasted 25-45 minutes. Using the interview protocol, I asked teachers to reflect on their experiences with web-based professional development, how web-based PD impacted the implementation process, and the challenges they faced in attempting to use web-based PD for successful implementation of the new state standards. I developed an interview protocol using guidelines for conducting qualitative interviews (Patton, 2002). To provide sufficient data collection, I designed the questions to elicit robust responses and to encourage participants to think of internal and external factors that influenced their perspectives of web-based PD and the implementation process. Validity was established by peer reviews during the analysis stage of this study. The questions were open-ended and provided the opportunity for participants to volunteer additional information not asked.

Recruitment, Participation, and Data Collection

Concerning participation recruitment, I contacted a school within the district to explain the purpose of the study and ask for a letter of cooperation and a list of teachers meeting the criteria for the study. I contacted potential participants through their school

board e-mail addresses. I emailed a letter of invitation to each of the teachers along with a consent form.

Concerning participation, I selected the first three primary teachers (K-2) and the first three intermediate teachers (3-5) who replied to me. To ensure that I got the six participants needed, I sent the invitation email twice, and requested permission from IRB to contact an alternate location if necessary. I contacted the selected participants via e-mail to confirm participation in the study and to schedule individual interviews. In this email message I attached a consent form with a message stating, "By replying to this message I am confirming that I have reviewed the attached consent form and consent to participate in this study." In a follow-up e-mail, I confirmed dates, times, and location for interviews.

With regards to data collection, I used an interview protocol. I met each participant at a location other than their workplace, to avoid interruptions. Each interview lasted 25-45 minutes. The interviews were recorded so that I could accurately transcribe them. I began the interview with an introduction of the study, the purpose of the study, and a review of the participants' rights to withdraw at any time, and the assurance of the confidentiality of the study. After analyzing the data, I contacted each participant by email for follow-up and closing out the study. Follow-up for each participant involved providing each participant with a copy of the transcript from their interview before exiting the study.

Data Analysis Plan

Data analysis consisted of manual coding, a first cycle and a second cycle were done. Each interview was recorded and then transcribed. After the interviews were transcribed I reread each interview and conducted a first cycle coding for each transcript. The first cycle coding included assigning labels to examples of external and internal factors related to the research questions from each transcript. After the first cycle coding was complete for all participant transcripts, I conducted the second cycle coding. The second cycle coding focused on themes that emerged across all interview transcripts. Discrepant data were further examined to determine factors that influence differences. This was done for the transcripts from the interview of each participant. Throughout this process, I maintained my researcher's journal where I wrote my analysis and interpretations.

Issues of Trustworthiness

In qualitative research trustworthiness is established through credibility, reliability, confirmability, and transferability. Patton (2002) described credibility as internal validity. I enhanced credibility of this study by using peer review.

Patton (2002) defined reliability as dependability. To accomplish reliability, I used the peer review process and maintain an audit trail. A peer provided an external review of the research process. I maintained an audit trail by keeping a researcher journal, providing a detailed account of the research process.

Patton (2002) described confirmability as objectivity. To achieve objectivity, I used the strategy of reflexivity. Yates and Leggett (2016) states that a qualitative

researcher is a reflexive practitioner, aware of one's own perspectives. A reflective journal was used throughout the processes of this study. I reflected upon my own experiences with school reform and web-based technology that may result in biases and assumptions that may influence data analysis. Reflecting upon these factors increase the confirmability of the conclusions derived from research.

Patton (2002) defined transferability as external validity. To accomplish transferability, I used thick descriptions and maximum variation. I used the strategy of rich, thick descriptions of the setting and participants' experiences. Regarding maximum variation, I selected participants from a range of grade levels.

Ethical Procedures

To ensure that the study was conducted with integrity, I applied for approval from the Institutional Review Board (IRB) at Walden University to conduct the study. The IRB ensures that participants were not be harmed by this study IRB# 12-20-17-0152273. In addition, I received approval from school administrators before I recruited potential participants. I conducted data collection per the parameters in the consent form. The data collected was stored and analyzed to safeguard the privacy and confidentiality of all participants. Pseudonyms were used to ensure confidentiality of the participants, the school, and the school district. All data was kept on a computer that is password protected and backed up on a password protected backup drive that can only be accessed by me. All data will be maintained for 5 years, then destroyed.

Summary

This chapter included a description of the methodology that was used for this study. In this chapter, I described the phenomenological design and my rationale for selecting it. In addition, the role of the researcher was presented. I also described participant selection, instrumentation, and the data analysis plan, and I discussed trustworthiness, including credibility, reliability, confirmability, and transferability. Ethical procedures that guided the research was reviewed.

Chapter 4 will include the results of this study. In it, I discuss the setting, demographics, and data collection procedures and then the analysis of the findings in relation to the research questions.

Chapter 4: Results

The purpose of this qualitative phenomenological study was to get an in-depth understanding of the lived experiences of teachers as they go through the process of implementing organizational changes and the diffusion of the new state standards. Examining the perceptions and lived experiences of teachers enabled me to identify the internal and external factors that influenced how the implementation of the new state standards was experienced by the teachers. Using interviews, my goal was to understand teachers' experiences with web-based professional development the district used implement the new state standards. The research questions guiding this study were:

RQ1: What are the views of educators on how web-based professional development has impacted the implementation process of the English Language Arts Standards and Mathematics Standards?

RQ2: What are the perceived barriers and the challenges faced in the attempt to make the web-based professional development for the implementation of the new state standards successful?

Participant selection was based on the number of years the teachers had taught in the respective district, ensuring that the teachers had worked within the time frame to experience the phenomenon.

In this chapter I describe the setting, demographics, data collection, data analysis, and evidence of trustworthiness. In addition, I provide results for each research question using quotations from the participants interviews to support the findings. I discuss the

findings in relation to emergent themes and conclude Chapter 4 by summarizing the main points of the data.

Setting

The setting for this study was a large school district in the Southeastern United States. The total student population of the district in 2017-2018 was approximately 96,000 kindergarten through fifth grade students in 130-plus elementary schools. In 2010, the state adopted the CCSS just as 40-plus other states did. After adoption, the state planned the rollout of the standards one grade at a time over a 3-year span starting with kindergarten. In the third year of implementation, standards for Grades 3 through 12 were rolled out at the same time. All teachers were informed of the reforms that were to take place. The newly adopted state standards would make an impact in the classroom practices of K-12 teachers and the method of learning for K-12 students.

The CCSS were slightly modified by this state, and implemented according to the state's implementation schedule. The goals of the new state standards were the same goals as the CCSS, to make sure that all students were college or career ready when they finished high school. Over the course of the past 8 years since the implementation of the new state standards, all the teachers that I interviewed had changed K-5 grade levels at least once, one teacher changed grade levels twice, and another changed grade levels three times. Because trainings were started in the primary grades (K through 2) and later implemented in intermediate grades (3 through 5), some participants received training when they were in the primary grades, but later went to the intermediate grades after the implementation process was fully in effect. Likewise, some participants who taught in the

intermediate grades went to the primary grades after the trainings for primary were completed. These organizational changes may have affected participants' recollections of the trainings they received.

Demographics

The participants included six K-5 teachers: two teachers with 14 years of teaching experience, one with 6 years, one with 12 years, and one with 13 years of experience. Five of the six participants have only taught in the district they are currently in, and one participant previous taught in another school district. All participants were women, with three teachers representing primary grades (K-2) and three teachers representing intermediate grades (3-5). More specifically, participants included one teacher from each grade level K-5. All but one participant received their undergraduate degree in education. The exception was one teacher who majored in psychology for her undergraduate degree and later received her teacher certification through an alternative certification program. Of the six participants, two are currently in master's degree programs, one in education leadership the other in pathology, and one other participant has a master's degree in education leadership.

Data Collection

Data collection began by applying for permission to conduct research with the district from the district's IRB. After receiving approval from the district's IRB and approval from Walden University's IRB, I sent emails to potential participants who met the inclusion criteria. I sent a letter of consent to the first teacher from each grade level who fit the criteria and responded to the letter of invitation. Each potential participant

who received a letter of consent responded with an email replying "I consent." Interviews were then scheduled with the six participants. Each interview lasted between 25 and 45 minutes, were audio recorded using Evernote, and notes were taken. I collected data using open-ended questions following the interview protocol (Appendix A) to yield rich thick descriptions.

Participants felt more comfortable having the interviews conducted at their school location. Two participants wanted their interviews completed before school hours in their classroom, one requested a location other than their classroom during after school hours, and three participants wanted to meet during afterschool hours in their classroom. To ensure that the participants were comfortable, I met them at the locations they requested. Interviews were transcribed using Microsoft Word after each interview was completed. Initially I had planned to conduct 45-60-minute interviews outside of the work location. However, each participant felt more comfortable completing the interview at their work location, and interviews lasted between 25 and 45 minutes.

Data Analysis

Modifying Giorgi's (2012) descriptive method for analysis, I took a systemic approach to the phenomenological method. Giorgi's (2012) descriptive phenomenological method of analysis consists of a four-step process. The four steps are: (a) reading the entirety of the description, (b) determining the meaning units, (c) "rendering implicit factors explicit" (p. 254), and (d) determining the structure. The first step in the process requires the researcher to read the transcripts as a whole to gain an understanding of what the participants said without doing anything else, such as note

taking or any form of analysis or data breakdown. Step 2 requires the researcher to find the categories or themes within the participants' expressions. The third step in this process requires the researcher to transform the participants' statements into more explicit statements. The final step in the descriptive phenomenological analysis process is to describe the structure of the experiences based on free imaginative variations.

In analyzing the data, I first read through each of the interview transcripts to gain an understanding of the interviews as a whole. I then read through each transcript a second time noting words or phrases that were relevant to the constructs of Rogers's (2003) diffusion of innovation theory. I assigned labels to examples of external and internal factors related to the research questions and themes or meaning units that emerged. I then performed a second-cycle coding focusing on themes across all interview transcripts that were again relevant to Rogers's diffusion theory as well as the research questions posed. The four constructs of innovation diffusion theory (Rogers's, 2003) are (a) the social system, (b) the innovation, (c) communications channels, and (d) time. The words and phrases that repeatedly showed up during the coding process became the themes of the participants' experiences with web-based professional development to implement the new state standards. The themes that emerged were *limited training*, *a need for more planning*, and *confusion with math*. Evidence of only one discrepancy emerged from the data analysis. Participant 3 identified the same internal and external factors as the other participants; however, this participant did not indicate confusion with math as the other participants did.

Evidence of Trustworthiness

In a qualitative study, credibility, dependability, confirmability, and transferability are needed to enhance the trustworthiness of the research (Patton, 2002). Credibility was enhanced through the use of the peer review process. The peer review process was completed by two of my colleagues. In this process, I allowed peers to review my journal of the research process and ask clarifying questions regarding the interpretations, methods, and meanings. Dependability was enhanced by keeping an audit trail detailing the research process. Saturation was reached when the data showed that participants experienced similar factors that influence their implementation of the new state standards. All processes leading to dependability was implemented as planned in the details outlined in Chapter 3. Confirmability, which is related to objectivity, was enhanced using the strategy of reflexivity, which Yates and Leggett (2016) described as being aware of one's own perspectives. As noted in Chapter 3, I used a reflective journal throughout the processes of this study. In it, I reflected upon my own experiences with school reform and web-based professional development to identify biases and assumptions that may have influenced data analysis. Reflecting upon these factors increased the confirmability of the conclusions derived from the research. I enhanced transferability through the strategy of using rich, thick description and maximum variation. I used rich, thick descriptions of the setting and the experiences the teachers had with web-based professional development in implementing the new state standards. Maximum variation involved selecting teachers from a range of grade levels and experiences with implementing the new state standards.

Results

The purpose of this qualitative study was to understand the lived experiences of teachers as they went through the process of the diffusion of new state standards. The results of this study are in relation to the following research questions:

RQ1: What are the views of educators on how web-based professional development has impacted the implementation process of the Language Arts Standards and Mathematics Standards?

RQ2: What are the perceived barriers and the challenges faced in the attempt to make the web-based professional development for the implementation of the new state standards successful?

Research participants included six teachers from one elementary school in a southeastern state. I analyzed the results through the conceptual lens of the diffusion innovation theory (Rogers, 2003). Several themes emerged after transcribing the interviews and completing data analysis. Using Giorgi's (2012) descriptive phenomenological method, I first read the transcripts to gain an understanding of the interviews. I then reread and placed participants' statements relevant to Rogers's theory into categories or themes. Next, I transformed participants' accounts into explicit statements, focusing on themes across all interview transcripts. Finally, I described the structure of the individual experiences relevant to Rogers's diffusion of innovation theory and the research questions posed. The themes that emerged were *limited training, a need for more planning,* and *confusion with math*. Table 1 includes a few of the specific quotes

from participants that aided in defining the emergent themes. A discussion of each of the

themes relating back to Table 1 follows the table.

Table 1

Findings That Helped Define the Themes

	Limited training	A need for more planning	Confusion with math
Participant 1	Could have been more successful. I think that if we would have had more training at the beginning of the year it would have made the implementation a little more successful for my class.	Just some advice to the state, when implementing something new make sure to plan and provide better training opportunities for your teachers if you want to see better results and a higher impact on student achievement.	If more training was received the standards would have been clearer to teachers and there would have been less confusion about what the new standards required.
Participant 2	Well the district did not give us enough support.	One week of planning, that's nothing.	If we're doing Go Math then do Go Math, don't test on something else. I wish there was a cohesive curriculum that we were are doing.
Participant 3	I am a little disappointed as far as not receiving support from coaches, or administration, maybe the district could have provided more training far as implementing the standards.	Time is also a factor we really lack time to plan or become familiar with different resources we can use.	

(table continues)

	Limited Training	A need for more planning	Confusion with math
Participant 4	It was somewhat useful to expose me to the expectations. But as far as the implementation I kind of felt like it wasn't basically designed for implementation.	When the district knew we were going to have this, we should have come back a week before the week of planning.	The component of how to implement the … and the Math was not addressed.
Participant 5	I would say I got training once a year since I have been here and over the summer that would kind of review it quickly.	Granted I understand that teachers don't want to give up their summers, but one week to plan, is not good enough. Sometime our planning is taken, and we have to do other things like other professional development.	There are standards that are deleted that should not be deleted, and then there are things, like the way that they go about the standards, like they go for example, math, it's confusing.
Participant 6	More training and resources, if your gonna make a change, have the resources ready.	We need the time, having that in place, so we can plan, and have resources, so we can make it happen.	I remember staying many afternoons trying to understand the math,

Theme 1: Limited Training

The participants indicated the trainings they received were limited. Sixty-six percent of the participants felt that the trainings were inadequate. When asked about receiving training, Participant 3 stated, "I did not receive any training as far as English Language Arts Standards and Mathematics Standards," and Participant 6 said, "I probably did, but I don't recall. I do know that by reading and researching and putting my things together is how I really got to learn about it." They required additional support and training from the district. They could not recall any details from the training that aided them in implementing the new standards in their classroom.

Participant 6 stated, "Yeah, we did a training, but I don't recall anything, like learning how to do this, I recalled by doing or reading." The participants recalled that the web-based training consisted of videos that referred to the standards but did not focus on implementing the standards. Participant 4 stated, "Although we meet for standard implementation instruction, that component was not addressed as to how English Language Arts Standards and Mathematics Standards would be implemented."

After watching the video segments, participants recalled having discussions among themselves regarding the information from the video. However, the discussions were the teachers' attempt to make sense of what they just watched. When asked about useful the professional development or guidance was in the implementation process, Participant 4 stated, "It gave me exposure to the standards, but I kind of felt like it wasn't designed for implementation." The same participant further added that the "component was never addressed," referring to how to implement the standards within her classroom.

What the teachers gained from the videos was an introduction of the new state standards. However, no one felt they gained anything else beyond the introduction. In fact, Participants 1, 3, and 6 (50% of the participants) stated that they had to read and reread the standards for themselves to fully understand them. Participant 6 said, "By reading it we understand it. We get with other peers and work and talk about the standards." Participant 3 said, "I got a copy of the standards and a read it, that's it, "while Participant 1 stated, "I studied and analyzed the standards to learn them."

Three of the six participants or 50%, Participant 1, Participant 4, and Participant 5 indicated that after the initial introduction of the standards, subsequent web-based and onsite professional development were merely a review of information previously taught. Participant 1 stated, "I went to a writing training that was supposed to help, and it was just a review of what I already knew." Participant 5 stated, "training in the summer was just a quick review," and Participant 4 said, "They didn't show me anything new." Each participant stated that more training was required.

Participant 1 said, "I think that if we would have had more training at the beginning of the year, it would have made the implementation a little more successful for my class." Participant 2 stated, "Well, the district did not give us enough support. I think that they just threw it out there and gave us a one day, 2-day training on it, but not enough support in coming out here and helping us." Participants 3 and 4 stated that "support could have been better." Participant 6 stated, "Maybe I had some training, but nothing that I can recall" and participant 4 stated that the training "wasn't specific." One primary teacher, Participant 3 stated, "I am a little disappointed I didn't receive support

from coaches or administration, maybe the district could have provided more training for implementing the standards." The same participant further stated,

> I met with the literacy coach, and she did give me an instructional focus calendar. I knew what standard we were teaching each week. I will say that much, so that is a plus. But not much guidance, once it was laid out to me, I didn't receive any other service after that.

As the web-based trainings were limited to watching static videos about the standards and not implementing them, the participants felt that despite them being effective teachers, they knew they didn't successfully implement the standards due to the limited training they received. Participants felt that static videos were not an effective way to provide professional development for standards that were supposed to prepare students to think differently. Participant 1 stated:

> A lot of it happened to be web-based professional development. You know sometimes people prefer to learn in a face-to-face setting where they receive more hands-on training, or they just don't feel like they're tech-savvy enough to participate and benefit from web-based professional development, and sometimes technology can present a problem like trouble shooting that would affect the presentation of the professional development.

Eighty-three percent of the participants indicated that they had to rely on themselves and their grade level team members to learn about and implement the standards. Participant 2 stated, "I replied on support from my team." The same participant further stated, "my team and I found our own resources and had to buy some." Likewise,

Participant 4 stated, "I received heavy support from my team leader." Participants and their team members sought out their own resources to aid with implementation. Which indicated the lack of support received, and the need for additional support from their district and school administration. Participant 5 stated, "we looked at the state education department website and other state education department websites throughout the country." Likewise, participant 1, stated, "other states were doing the common core state standards, so we looked at their state websites." As other states were implementing the common core state standards, participants were able to find resources to help them because a few other states were further along in the implementation process than their state or district was. The resourcefulness of the participants and their team members shows how committed they are to their practice and to each other. This lead to teachers essentially creating their own personal learning networks.

Personal Learning Network. Five of the six participants or 83%, indicated that to implement the standards they had to do research for themselves. They also stated that by working with their respective team members they were able to find resources that they freely acquired or on occasion purchased to implement the new standards. Participant 4 stated, "there wasn't a schedule for training; each grade level team were expected to meet and discuss how they were going to do the implementation." The same participant indicated that she received heavy support from her team leader to implement the state standards. She further stated, "my team met weekly, and the team leader found resources for the team to use for both Math and Reading and our team worked collaboratively so that all team members could implement the standards we were working on for that

week." Similarly, participant 3 stated, "since I was the team leader for the team, had my team meet weekly to review the standards we were working on to make sure that everybody on the team knew how to implement the standards for that week." The participants and their grade level team members were very committed.

Theme 2: More Planning Required

All participants indicated that more planning was required to effectively implement the standards. Participants 5 stated, "the time they give us to plan is not enough" and Participants 1, and 4, said "I need another week" when asked about planning. Participant 5, noted that teachers have time during the summer, which would have been an ideal time for planning. Participants felt they lacked the time required to plan. When asked if the implementation was successful, participant 4 stated, "no, because I needed more time to plan." Participants receive a week of planning before the school year starts for the students, they also receive a day of planning monthly. However, all participants felt that a week is not nearly enough time to plan their instruction. Participant 5 stated, "I know teachers don't want to give up their summer, but one week is not enough time to plan."

Fifty percent of the participants indicated that monthly planning days was not used for planning. Participant 2 stated "monthly planning days are not always used for planning," Participant 5 said, "admin used them for other kinds professional development," and Participant 6 stated, "they used planning time for trainings not related to the implementation of the standards." All participants stated that they needed an additional week of planning. Participants indicated that during the week of planning they

receive at the beginning of the school year, they only have a day or so to plan. Participant 5 said, "I try to plan like weeks in advance, and one week or one day is not going to cut it, not when your whole planning week is also filled with schedules and meetings and other stuff, other workshops." Some participants indicated that much of the week is spent getting their classroom ready. When asked about planning, Participant 2 and 6 stated, "during planning week you have to prepare your classroom before the end of the week", Participant 6 further stated, "sometimes if they move you, you got to move, then decorate your classroom, then your whole week is wasted moving, and you still have to do meet and greet with the parents on Friday." Others stated that some days are filled with meetings about other things. Participants 1and 3 stated that "on the first day of planning it's an all-day meeting, so you don't get to plan." One participant noted that she "understands that teachers do not want to give up their summer," but more training is required because teachers need to plan ahead.

Issues with Time. The participants of the study indicated that time was an issue throughout the implementation process. The participants referred to not having enough time to plan before they had to teach a lesson. Participant 6 said, "I would have to stay every afternoon to learn the standards and plan my lesson to make sure I was teaching the students the correct thing because it was all new." They also indicated not having enough time to find resources. Participant 3 stated, "It's like I am out here and I'm trying to find materials and resources to make sure that my students are mastering these standards, but everything is rushed, there's not enough time." All participants stated they did not have enough time to teach or implement a set of standards before they were required to move

to the next set of standards, thus affecting student learning. Participant 4 stated, "I think the timeframe in which they are asking us to implement a standard may have been reduced or rushed, so I don't think that I have properly taught the standard to mastery before I am asked to move on." Participant 1 stated,

> A lot of states kind of just piled on concepts to their former standards and teachers had to rush through lessons to get everything covered, but I feel more rushed with our new standards, because it's like teaching a brand-new standard every day there's just no time to really stick with something for any length of time.

Participant 2 stated,

> The disadvantage is that it is just too much pressure both they didn't give us enough time to fully teach it. Like once you get the kids on the concept the next week, it changes to another one. It doesn't give the kids ample time to really understand it. And I feel like, especially in primary that they need a few weeks to fully understand a concept and not just quickly changing it to the next one.

During the current school year, 2017-2018, all participants and their team members were given resources for their students. However, participants stated that they lacked the time required to become familiar with resources. Participant 3 stated, "time is also a factor we really lack time to plan or become familiar with different resources out there that we can use to implement these standards." Similarly, Participant 6 stated, "I'm glad we got resources this year, but there's no time to learn it all."

Theme 3: Confusion with Math

Eighty-three percent of the participants had issues with the implementation of the math standards. Some of the participants felt that the depth of the standards for math was more than their students were ready for. Participants 1 and participant 6 stated that they understood that the depth of the standards was necessary, but how they were to implement them were a bit confusing. Participant 6 stated,

The math was confusing; it was a big change from FCAT to FSA. We didn't know what to expect. We had to teach math in a different way. Some of the parents were nervous and confused about the homework. They would say to me this is not how I learned math. They couldn't help their kids. And, I remember staying many afternoons trying to understand the math, you know I wanted to be in front of my class and know exactly what I was teaching them.

Similar to the response from participant 6, Participant 1 stated, "parents are limited as to the amount of support they can provide at home because they themselves don't understand the model that we are teaching, they are used to their own way of learning the curriculum."

Fifty percent of the participants explained that they were required to teach some concepts, in their view, out of order. Participants 2 and 5 specifically stated, "how can you expect a child to know this…, before you teach him that." Participant 1 stated, that "Mathematics requires more modeling than the previous standards, and it did make an impact in my classroom because my students will be ready for the next grade level." However, she felt that the rollout to the teachers was not outlined properly. She stated, "if

they were outlined a little clearer," the implementation would have been better. She also noted that if they received more training,

> The standards would have been clearer to teachers, and there would have been less confusion about what the new standards required, and it would have resulted in a more productive school year the year they started the implementation.

Participants in the primary grades noted that they saw confusion with their peers with the math standards. Participants 2 and 5 stated that they were not initially provided with resources related to the standards and they were confused about what they were told to use. When asked about the initial implementation participant 2 stated, "when we started I think it would have been more successful by giving us a little more support, like materials." When asked about the current school, 2017-2018, the same participant stated,

> like this year the tests were frustrating, because it was challenging for the kids. The wording of the questions was totally different from what was in the book give us to use to teach the kids. I wish they would be clear on what we are all supposed to use, just choose one thing.

Participant 5 stated,

> They actually gave us books for the kids this year (referring to the 2017-2018 school year), the English Language Arts books really helped my kids with comprehension, the Mathematics Standards, it's nothing significant, it can be better. Like the way that they go about the standards, I would think that you want a child to learn about shapes first before you go into addition and little things like

that., the easier things, and if you were to tackle that first before you go into three-

digit addition.

The perception of the participants from the intermediate grades was that the way they

were to teach the math standards were confusing for the students, as the concepts could

be taught an easier way, this is similar to what was stated by Participant 5, who is in the

primary grades. Participant 3 made no reference to math confusion on her part, her teams

or knowledge of other teacher's confusion with math. When asked about math standards,

participant 3, stated "my students started to receive the Mathematics textbooks this year,"

referring to the 2017-2018 school year, "and we were told we could intertwine it with go

math, my students are mastering the standards." She did, however, feel that the resources

provided to her for math lacked depth. She stated "I am not a fan of the Mathematics

textbooks. I feel like they're kind of, I don't know, I feel like they should be more

lengthy, it's not enough they could go deeper."

One thing very noticeable was the difference between the responses from

the participants who taught in the primary grades (Grades K through 2) and the

participants who taught in the intermediate grades (Grades 3 through 5) regarding

the Math standards. The teachers who taught in the primary grades indicated that

they lacked the resources required to implement the standards, as previously

stated above. Although all participants shared that resources were not initially

provided to them to affect the implementation, the intermediate grade teachers

received resources at least two years before resources was supplied to the primary

grades. Participant 6 explained that the first year I was teaching fifth grade and we

had to go online to find our own resources. Last year I was taught third grade and

we were still making a lot of copies because we didn't have books. This year we

have books for every student, but now it's too many books. We won't use them

all, it's too much. We also have laptops for every student in my class, and that's

good.

Participant 4 stated, "I was in primary when the implementation started, and we had to

find resource. When I moved to intermediate, they had some resources, now we have too

much, and everything is so rushed I'll never get to half of it." Similar to participant 4,

participant 1 stated, "at first I was teaching kindergarten and I we didn't really get

anything. Now I teach fifth grade, and we have more resources than we can use." Despite

having ample resources, whether provided by the school or sourced by the participants

and their team members, confusion to some degree still exists relating to teaching the

math standard and the best resource to use for implementation. Participants did not

provide any data, other than the answers to my questions, regarding the resources used.

Summary

This chapter focused on the lived experiences of six elementary school teachers

who underwent the process of implementing the new state standards after receiving web-

based professional development to aid in the implementation of the standards. The

interviews revealed that the teachers had positive views of the new state standards and

believed that the standards would prepare students for college and career as they are

intended. However, despite teachers having positive views of the new standards they had

to teach, they faced challenges in implementing the standards with success. These

challenges stemmed from the quality and quantity of the web-based professional development they received. In-depth interviews exposed three themes; more training, more planning, and confusion with math. Internal factors that affected the successful implementation and full adoption of the new standards by the teachers included on-site professional development, support from onsite coaches, and resources. External factors that affected successful implementation and adoption included district support, and planning time allotted by the district.

Chapter four focused on the results of this study. In this chapter, a description of the setting, relevant demographics, data collection, and the data analysis procedures followed throughout the study was presented. Additionally, strategies to enhance the trustworthiness of the research was discussed. The results of the data analysis in relation to the innovation diffusion theory constructs and emerging themes were presented.

Chapter five presents the interpretation of the data analysis based on the rich, thick description provided from the participants in the interviews. Additionally, recommendations for future research and implications for social change is discussed.

Chapter 5: Discussion, Conclusions, and Recommendations

The purpose of this qualitative phenomenological study was to get an in-depth understanding of the lived experiences of teachers as they went through the process of implementing organizational changes and the diffusion of new state standards. My intent was to understand how web-based professional development worked to aid the participants in the implementation of the new state standards in their classrooms. The study may help state and district educational leaders determine what works and what does not work with regards to web-based professional development. Internal factors that affected the successful implementation and full adoption of the new standards by the participants included web-based professional development, onsite support, and resources. External factors that affected successful implementation and adoption included district support and planning time allotted by the district. Additional external factors include the district and state timetable, the content of the web-based professional development, and the framework for implementation.

This chapter begins with my interpretation of the findings organized by the themes that emerged. I analyzed data using Rogers's (2003) diffusion of innovation theory. The limitations of the study, recommendations, and implications for social change and future research are then discussed and the chapter closes with an overall conclusion regarding the findings.

Interpretation of Findings

The research questions that guided this study were:

RQ1: What are the views of educators on how web-based professional development has impacted the implementation process of the English Language Arts Standards and Mathematics Standards?

RQ2: What are the perceived barriers and the challenges faced in the attempt to make the web-based professional development for the implementation of the new state standards successful?

I analyzed the results through the conceptual lens of the diffusion of innovation theory (Rogers, 2003). Three themes emerged during the data analysis process: more training, more planning time, and confusion with mathematics. The lived experiences of the participants indicated that the training they were provided with was not sufficient for them to implement the new state standards. Also, the participants perceived that the limited amount of planning time they were given did not enable them to plan effectively or learn to use the resources they were provided. Additionally, the perceived confusion with the implementation of the math standards and the resources to be used affected the participants' abilities to implement the standards. Lastly, the scarcity of training provided, the allotment of planning time, and the pace participants were required to introduce the mathematics standards to the students hindered the implementation.

Theme 1: More Training

Despite the mandate and not having the opportunity for trialability, the participants in this study, overall, were receptive of the innovation. They received

training, but much like the participants in Mustafa and al-Mothana's (2013) study who did not, their lack of knowledge in using the innovation was a barrier. Participants in this study indicated that their professional development needs were not met, confirming the results of Luther's (2015) study that indicated participants need professional development based on their needs. The participants in this study felt that the web-based video series did not meet their immediate needs to assist with the implementation process. The information I gathered from the open-ended questions asked of the participants provided information about their professional development needs. Participants indicated that their professional development needs were not met, the trainings were not focused, and 8 years after adopting the innovation, the district and state have yet to provide them with a more effective professional development program to ensure that they will successfully implement the standards.

The participants in this study experienced limited trainings and felt the professional development process was rushed and inadequate. Participant 2 stated, "I did a two-day workshop, with everything thrown at me. How am I supposed to remember anything?" The participants felt that they did not gain any knowledge that they could apply in the classroom. Abika and Wilkinson (2015) found that when training was condensed into a 2-4-day process, participants' learning was limited. Burks et al. (2015) found that 55% of their participants felt they were not adequately trained to implement the new state standards, despite 47% of them attending 3 or more trainings. Unlike the participants in Burks et al.'s (2015) study, 100% of the participants in my study were part of the initial implementation of the innovation and were present for the professional

development sessions provided by the district and school location. However, they still felt they either received limited instruction in addition to not gaining any new knowledge.

Eighty-three percent of the participants indicated that they met with their grade-level team members for professional learning groups (PLCs) on a weekly basis to help each other better understand the standards, find resources, and determine how to implement the standards to be taught for that week. The participants further indicated that in addition to the weekly required PLCs, they initiated communities of practice (COPs) among their teams or portion of their teams. However, although PLCs are a widely used and effective form of professional development (Jones & Dexter, 2014), the participants in this study felt that even though they were gaining knowledge through collaboration, they were still missing content they should have received from the district instead of trying to find it themselves and conferring with each other. In their study, Collins and Liang (2015) showed that their participants received a one size fits all online professional development, similar to that which was received by the participants in this study. Unlike participants in the Collins and Liang study, however, participants in this study were encouraged to use learning communities. However, PLCs can be a barrier if participants do not have relevant resources to aid in their learning.

Jones and Dexter (2014) concluded that the district should support participants using COPs while implementing district-led PLCs. But, if relevant content and resources are not available for participants through PLCs, then the combination of using participant-led COPs and district-led PLCs will not provide the learning gains that participants feel they need. This finding extends the knowledge of current literature

regarding the efficacy of using COPs and PLCs to further professional development and pedagogical practices in K-12 settings.

Successful implementation of an innovation can be hindered when it is without capacity building (Ruchti et al., 2013). When professional development is inadequate, participant learning, organizational changes, and the diffusion of an innovation is at a standstill. Participants in this study felt that although the implementation process has moved forward, the school administration and district's inability to build capacity with them has almost placed them at a standstill. Collins and Liang (2015) stated that high-quality web-based professional development is ideal for the education arena. However, the professional development is only effective when the content is relevant to the participants, the delivery method is effective, and the duration and the quality of the program is effective, along with transformational learning that follows an adult learning theory.

Communication efforts by school administration should be consistent and clear throughout the diffusion process (Durant et al., 2016; Maunsell, 2014). Participants in this study indicated they received an initial message at a faculty meeting about the innovation. However, a clear message on how to implement the standards, what resources to use, and effective professional development was never received.

Theme 2: More Planning Time

Adoption of an innovation takes time and varies according to the members of the organization (Rogers, 2003). In this study, the participants were essentially given a set number of years to fully implement the new standards. Kindergarten teachers essentially

had 4 years before full implementation was in effect, while first and second grade teachers had 3 years. According to FLDOE (2010), the implementation of the new standards was to start with Kindergarten in 2011. By the time those kindergarten students entered third grade, they would be acclimated to the new state standards and the third-grade teachers would start fully implementing the standards that year. Although the state phased in the innovation and expected full implementation and diffusion in the eighth year, the 8 years was too fast for the participants who still feel that they have not reached full implementation.

In Abika and Wilkinson's (2015) study, the findings showed that time constrains were an issue for the participants. Likewise, the participants in this study indicated they had issues with the insufficient amount of time they were given. They lacked the time needed to plan for instruction, become familiar with new resources, and learn how to implement the innovation. Participants indicated that planning time allotted by the district at the beginning of the school year did not provide them with enough time to plan out initial instruction. They stated that a week of planning was not a full week on the standards, as they were required to participate in other trainings not relevant to the innovation. Participants also indicated that the timeframe given to teach the standards negatively impacted the implementation process, thus affecting their ability to successfully familiarize themselves with the resources provided by their school location to teach the standards.

Theme 3: Confusion with Mathematics

This theme was evident when all participants except one expressed their perceptions of the new mathematics standards, the way math would be taught, and the undefined resources they were asked to use. This confirms the results from Stair et al. (2016), Ruchti et al. (2013), and Bostic and Matney (2013) whose participants indicated a need for professional development to better understand the mathematics standards. Additionally, Bostic and Matney (2013) also showed that instructional strategies to use with students, along with modeling what was learned, needed to be a focus of professional development regarding mathematics for the participants.

When implementing or understanding the math, most participants were confused because they received limited training and they felt that that part of the implementation was not met. According to Sargent (2015), successful implementation required extensive continual professional development throughout the implementation process. Like the participants in Foulger et al.'s (2013) study, the participants in this study were asked if they felt that if the innovation was successfully adopted by them. All six (100%) of the participants indicated that a lack of knowledge, resources, and training were the barriers that prevented full adoption.

Some participants indicated that rigid timetables for implementation affected their ability to successfully implement the standards. This finding confirms the results from Kunnari and Ilomaki's (2016) study. However, unlike the participants in Kunnari and Ilomaki's study who also cited *inflexible* curricula as a hindrance, the participants in this study indicated that *flexible* curricula were a hindrance because there was no single set

program to use for mathematics. Participants indicated that they had several resources to choose from, that they could use singly or combined, and it was essentially up to the individual to decide (or they could decide as a team). The perceived needs of the participants were that more professional development was needed that addressed the implementation of the mathematics standards and the appropriate resources to use. The participants felt that the video series was not relevant to the process they were tasked to do.

Diffusion of Innovation Theory

While a system goes through the decision process, individuals who are mandated to implement an innovation also go through the decision process internally. Despite being told or asked to implement a process an individual can choose to fully comply or partially comply, or not comply at all, depending on their mindset and knowledge (Rogers, 2003).

Although the state can be seen as an early adopter of the innovation, as some participants stated, the plan to implement and train the participants was not thought through. According to Rogers (2003) when diffusing an innovation an organization goes through several phases that vary in time and depth depending on the implementation plans that are laid out. If the implementation plans are not laid out to meet the needs of the organization's members tasked with implementing the innovation, how does one know that the innovation has been fully adopted and sustained, which is the eventual step in the diffusion process.

The stages of the innovation-decision process that affected the participants were knowledge, implementation, and confirmation. When applying Rogers's (2003) diffusion

of innovation theory to the study the four constructs are followed, which are (a) the social system, (b) the innovation, (c) communications channels, and (d) time.

The Social System. Social system starts with the state education department then on down from there. However, in this study the social system is fourfold. First the state education department, then the district, then the school location, and finally each grade level team. As previously stated in chapter 2, Rogers's (2003) diffusion of innovation theory, states that the social system can "… facilitate or impede the diffusion of an innovation" (p.25). In this study, the social system impeded the diffusion of the innovation by sticking to norms for professional development, instead of using hierarchal communication channels for professional development to disseminate information about the innovation.

The Innovation. Rogers (2003) defines an innovation as "an idea, practice, or object that is perceived as new by an individual or other unit of adoption" (p.12). The innovation in this study was an idea, which, Rogers (2003) states has a slower rate of adoption. Based on the experiences of the participants the innovation diffusion process needed to be longer, this would have accommodated the slower adoption rate. - Participants became aware of the innovation (the new state standards) at a faculty meeting. To communicate or inform teachers of the innovation, the district and school used face to face meetings. The district informed the administrators of the school locations, who informed their curriculum coaches and the coaches informed the participants at face-to-face faculty meetings. To diffuse the innovation the communication channels that were used was web-based. A few face-to-face meetings

were noted by Participants 2, 3, 4, and 5. Two questions that Rogers (2003) state that individuals going through the innovation-decision process ask are: "What is the innovation?" and "How does it work?" (p.14). Participant 4 recalled that the meetings did not provide her with any new information and Participant 5 stated that she did not feel as though she learned anything at the meetings to help her implement the standards.

Communication Channels. The lack of effective communication and professional development played heavily in the experiences of the participants in this study. Participants indicated that they first learned of the new state standards from the literacy coach at their school location or from reading about it. The literacy coach and the participants had homophilous communications, meaning they communicated on the same level. They learned what the standards were by watching a video series about the standards. Diffusion dictates heterophilous communication is required, whereby, a change agent who is more technically knowledgeable communicates the implementation process (Rogers, 2003). The participants learned about how the new state standards were different from the previous standards through reading the standards themselves. The district did not use a heterophilous communication or a change agent, for professional development. Rogers (2003) states that diffusion insists that to some degree heterophilous communication must be present in the implementation process otherwise diffusion will not occur.

Time. To meet the districts, need of time constraints, professional development was implemented using web-based technology. When implementing an innovation, time is required to inform the participants, train the participants, and time for the process and

learning to develop and grow. Diffusing an innovation can take several years, from awareness to implementation, and is different for everyone (Rogers, 2003). All participants felt that the time allotted for training, processing new information, and to develop their pedagogical practice was inadequate.

Limitations of the Study

In a phenomenology study, a small sample size is adequate (Bhattacharya, 2017; Patton, 2002). Transferability was a limitation of this study, which was based on using a single research site and a small sample size. This study focused on participants in Grades K through 5 and did not include experiences or perceptions from those in Grades 6 through 12. In addition, the school location, the school demographics, and the district were not taken into consideration. Therefore, transferability may be limited to the same grade levels within the same district with the same demographics.

Researcher bias was also a limitation to this study, as the researcher's experience as a classroom teacher during the implementation process had the potential of biasing the interpretation of the data collected. However, this bias, was addressed by using a researcher's journal to record reflections and concerns. Additionally, careful attention was given to statements from participants that were discrepant from the researcher's experiences. The data was also reviewed numerous times to ensure accuracy of the participant perspectives.

Recommendations for Future Research

What follows are recommendations for future research. Recommendations and implications for practitioners will be found in the implications section.

Based on the finding of this study, recommendations for future studies include increasing the number of participants to further validate the finding of this study. As the participation was limited to Grades K through 5, future research should include participants from Grades 6 through 12. This study was also limited to one school in one district in a state with 67 school districts. Future studies should include multiple schools within one district, as well as multiple schools across districts. Ideally, a sampling of participants from Grades K through 12 from multiple schools, from all 67 school districts would provide a comprehensive representation of how effective the state mandated innovation and web-based professional development employed throughout the state impacted teacher learning of the new state standards.

Future research should include the framework used by the district and state to disseminate the innovation and the process used to implement the change. This study was limited to participant interviews. Documentation from state, district, and school location regarding their framework for the implementation process was not available. Therefore, future research should be conducted on the implementation process and the framework used by the state to deploy the innovation by gathering documentation from the school location, district, and the state.

Implications

This section includes positive social change on an individual, organizational, and societal level. In addition, recommendations for practice is included in this section.

On an individual level, the implication is for K-12 teachers with the potential of a positive impact on their professional development experiences. If the goal is to improve

student learning, as indicated by Donnell and Getting (2015), then those in charge of reform efforts need to make sure that the learning of teachers is improved as well. Teachers are tasked with building an educational foundation for students in Grades K through 12. Along with that task they must be prepared for a paradigm shift when districts, states, or their school location make mandated changes. Based on the results of this study, participants are willing to make the paradigm shifts mandated by the state and district. However, they perceive that they are not receiving adequate professional development to meet their pedagogical needs, and thus, are not meeting the needs of their students. In fact, all participants felt they still need training, and when asked if they felt the innovation was fully implemented, all participants said it was not fully implemented. Teachers are evaluated based on their pedagogical practice as well as the learning gains of their students. However, if teachers are not provided with adequate professional development to enhance their pedagogical practice and effectively meet the needs of their students, how can a district or state effectively evaluate them? Therefore, they should be allowed to experience the Rogers (2003) innovation diffusion process in its entirety. The results of this study could influence a positive social change because teachers could fully experience the diffusion and adoption process if the framework is implemented by districts and states.

On an organizational level, the implications are that K-12 educational organizations across the nation can learn what does not work with regards to web-based professional development from the experiences of the participants of this study. The participants in this study indicated that they were not adequately trained in the

innovation, that they require more training, they do not feel that they have successfully implemented the innovation, and that the framework with which the innovation was diffused, was not implemented in a fashion that enabled them to fully acquire the knowledge of the innovation needed to fully adopt and implement the innovation. Teachers need proper professional development to implement the changes they are required to do. In addition, the professional development needs to be adequate in quality and quantity, they need ongoing professional development not a one-day workshop, or a static video series. Teachers need interactive professional development from a change agent using heterophilous communication channels, as indicated by Rogers (2003). By adopting all facets of Rogers's (2003) diffusion of innovation theory and applying it in its entirety to their implementation process, districts and states could experience a positive social change allowing them to better meet the needs of their teachers. Based on the experiences and perspective of the participants, insights into theory, research, and model building of web-based professional development can be used by state educational systems. These systems can create a framework of web-based professional development that prepares every K-12 teacher, who is tasked with implementing mandated innovations. When teachers are prepared with the knowledge and tools needed to teach their students, then educational reform efforts may be realized.

On a societal level, the impact is shown when students in Grades K through 12 enter the next level of their education and are fully prepared for that next level. State and district education organizations can create this societal impact by focusing their efforts on professionally preparing their teachers to implement changes and thus, resulting in social

change as the changes would be implemented more successfully. The goal of every reform effort is not only to educate students but to ultimately prepare them for college and career and to equip them with skills to be productive members of society. Therefore, educational organizations need to first start with effective professional development of all K-12 teachers who are tasked with preparing these students in becoming productive members of society.

Conclusion

After eight years of the implementation of the new state standards participants feel that they still lack the training needed to successfully implement the new state standards. According to Rogers (2003) the rate at which an innovation is diffused varies; and an individual's adoption rate can take, days, months or even years. The district in which this study was conducted began the innovation process in 2010 with the adoption of the new state standards. The implementation of the innovation began for participants in 2011, with participants who taught Kindergarten. Those who taught First Grade and Second Grade began in 2011, and participants from grades 3 through 12 began the process in 2013. It has been seven years since the first participants were officially introduced to the new state standards and only five years for participants from Grades 3 through 12. No additional trainings were provided to the participants of this study since 2016. The participants do not foresee any further trainings regarding the standards. Yet, they all feel that more training is required for the successful implementation of the standards in their classroom. Despite the innovation process beginning seven years ago,

based on the lived experiences of the participants one would conclude that the innovation has not yet been fully implemented.

What should districts take from the experiences of these participants? One participant wanted to advise the district on this matter, stating that much of the professional development was web-based and some participants prefer professional development in a face-to-face setting, and some do not feel adept in web-based learning. Another participants' perspective is if the state and district was going to plan something as momentous as changing the state standards that affect every K-12 teacher and student, the implementation needs to be planned much better than what was brought forth. When determining the professional development and the implementation of an innovation, educational organizations, which includes districts and states, need to consider the differing learning needs of their teachers, the time the district provides for initial planning to start the school year, and how school-based administration allow teachers to use planning days throughout the school year.

The three themes discovered from the literature were: (a) education reform is a slow and consistent top-down process, (b) professional development was needed that was content specific that matched the level of experience and used multiple methods of professional development, and (c) extensive professional development was needed to understand the standards. In this study the three themes that were discovered. The first theme was more training was needed; this would align with extensive professional development to understand the standards but would also include implementation strategies and resources. The second theme was more planning time; time to not only

plan lessons but time to learn effective strategies and the how to use the new resources provided. The final theme was understanding the mathematics standards, this is in line with professional development that was content specific. The literature shows that professional development (Abika & Wilkinson, 2015; Bostic & Matney, 2012; Burks et. al, 2013; Collins & Laing, 2015; Lesaux et. al, 2014; Storandt et al., 2012) or organizational change and culture difference (Jamieson, Adelson & Dye, 2015; Lesaux et. al, 2014), or effective communication implementation (Maunsell, 2014; Smith, 2012; Surrette & Johnson, 2015) are thought to be the key to successful implementation of new state standards. Based on the experiences of the participants of this study professional development and effective communication are keys to successful implementation of the new state standards.

References

Abika, M. & Wilkinson, B. (2016). Adopting an international innovation for teacher professional development: State and district approaches to lesson study in Florida. *Journal of Teacher Education*, *67*(1), 74-93. doi: 10.1177/0022487115593603

Acar, İ. i., & Yıldız, S. m. (2016). Professional development of elementary school teachers through online peer collaboration: A case study. *Turkish Online Journal of Qualitative Inquiry*, *7*(4), 422-439. doi:10.17569/tojqi.79480

Anderson, K, Harrison, T., and Lewis, K. (2012). *Plans to adopt and implement Common Core State Standards in the Southeast Region states.* Issues & Answers Report, REL 2012–No. 136. Retrieved from https://files.eric.ed.gov/fulltext/ED528961 .pdf

Bakanay, Ç. C., & Çakır, M. (2016). Phenomenology and its reflections on science education research. *International Online Journal of Educational Sciences*, *8*(4), 161-177. doi:10.15345/iojes.2016.04.014

Barrett-Tatum, J., & M. Smith, J. (2018). Questioning reform in the standards movement: professional development and implementation of common core across the rural South. *Teachers & Teaching*, *24*(4), 384-412. doi:10.1080/13540602.2017.1401534

Blau, I., Peled, Y., & Nusan, A. (2016). Technological, pedagogical and content knowledge in one-to-one classroom: Teachers developing "digital wisdom." *Interactive Learning Environments*, *24*(6), 1215-1230. doi:10.1080/10494820.2014.978792

Bostic, J., & Matney, G. (2013). Overcoming a common storm: Designing professional development for teachers implementing the Common Core. *Ohio Journal of School Mathematics*, *67*, 12–19. Retrieved from http://hdl.handle.net/1811/78176

Burks, B. A., Beziat, T.L.R., Danley, S., Davis, K., Lowery, H., & Lucas, J. (2015). Adapting to change: Teacher perceptions of implementing the Common Core State Standards. *Education*, *136*(2), 253-258. Retrieved from https://ingentaconnect.com

Bybee, R. W. (2011). K-12 engineering education standards: Opportunities and barriers. *Technology & Engineering Teacher, 70*(5), 21–29. Retrieved from https://www.iteea.org/39191.aspx

Chen, C.-H. (2011). Transforming online professional development: The design and implementation of the project-based learning management system (PBLMs) for in-service teachers. *British Journal of Educational Technology*, *42*(1), E5–E8. doi: 10.1111/j.1467-8535.2010.01143.x

Chen, Z., & Reigeluth, C. M. (2010). Communication in a leadership team for systemic change in a school district. contemporary educational technology, *1*(3), 233-254. Retrieved from www.cedtech.net

Chien, H. Chia-Pin, K., I-Jan, Y., & Kuen-Yi, L. (2012). Examining the relationship between teachers' attitudes and motivation toward web-based professional development: A structural equation modeling approach. Turkish online journal of educational technology, *11*(2), 120-127. Retrieved from http://learntechlib.org

Class, B., & Schneider, D. K. (2014). Design issues for technology-enhanced formal

professional development. *Journal of Interactive Learning Research*, *25*(2), 161-186. Retrieved from http://www.editlib.org/p/40399/

Collins, L. J., & Liang, X. (2015). Examining high quality online teacher professional development: Teachers' voices. *International Journal of Teacher Leadership*, *6*(1), 18-34. Retrieved from https://www.cpp.edu/~ceis/education/international-journal-teacher-leadership/index.shtml

Connelly, L. M. (2015). Research roundtable. life-worlds in phenomenology. *MEDSURG Nursing*, *24*(2), 119-120. Retrieved from http://medsurgnursing.net

Dash, S., de Kramer, R. M., O'Dwyer, L. M., Masters, J., & Russell, M. (2012). Impact of online professional development on teacher quality and student achievement in fifth grade mathematics. *Journal of Research on Technology in Education*, *45*(1), 1–26. doi: 10.1080/15391523.2012.10782595

Dominguez C. C. M., Galán-González, J. L., & Barroso, C. (2015). Patterns of strategic change. *Journal of Organizational Change Management, 28*(3), 411-431. doi:10.1108/JOCM-05-2014-0097

Durand, F. D., Lawson, H. A., Wilcox, K. C., & Schiller, K. S. (2016). The role of district office leaders in the adoption and implementation of the Common Core State Standards in elementary schools. *Educational Administration Quarterly*, *52*(1), 45-74. doi:10.1177/0013161X15615391

Eilers, L. H., & D'Amico, M. (2012). Essential leadership elements in implementing Common Core State Standards. delta kappa gamma bulletin, *78*(4), 46-50. Retrieved from http://www.deltakappagamma.org

El-Bilawi, N. H., & Nasser, I. (2017). Teachers' professional development as a pathway for educational reform in Egypt. *Reflective Practice*, *18*(2), 147-160. doi:10.1080/14623943.2016.1251406

Florida Department of Education. (2010). Presentation: Florida Common Core State Standards Rollout Timeline. Retrieved from http://www.fldoe.org/core/fileparse.php/7605/urlt/0073272-ccssrollouttimeline.doc.

Florida Department of Education. (2013). Florida's Common Core Standards. Retrieved from http://www.fldoe.org/core/fileparse.php/7731/urlt/0074681-commonpres.pdf

Foulger, T. S., Burke, D., Williams, M. K., Waker, M. L., Hansen, R., and Slykhuis. D. (2013) Innovators in teacher education: diffusing mobile technologies in teacher preparation curriculum. *Journal of Digital Learning in Teacher Education, 30*(1), 21–29. doi:10.1080/21532974.2013.10784722

Goh, D., & Kale, U. (2016). The urban–rural gap: Project-based learning with Web 2.0 among West Virginian teachers. *Technology, Pedagogy & Education*, *25*(3), 355-376. doi:10.1080/1475939X.2015.1051490

Giorgi, A. (2012) The Descriptive Phenomenological Psychological Method. *Journal of Phenomenological Psychology 43*(1) 3–12. doi: 10.1163/156916212X632934

Gorozidis, G., & Papaioannou, A. (2014). Teachers' motivation to participate in training and to implement innovations. *Teaching & Teacher Education*, *39*, 1-11. doi:10.1016/j.tate.2013.12.001

Hall, G. E., & Hord, S. M. (2011). *Implementing change: Patterns, Principles, and*

    potholes (3rd ed.). Upper Saddle River, NJ: Pearson Education.

Hess, Fredrick M., and Michael Q. McShane. (2013). "Common Core in the Real World:

    EBSCOhost. Kappa magazine. *95*(3) Retrieved from https//: us.sagepub.com

Jamieson, D. W., Adelson, C., & Dye, L. (2015). Design as the Bridge Between Intention

    and Impact. *OD Practitioner*, *47*(3), 7-14. doi: 10.1007/978-3-319-52878-6_60

Jones, W. M., & Dexter, S. (2014). How teachers learn: the roles of formal, informal, and

    independent learning. *Educational Technology Research and Development*, *62*(3),

    367-384. doi: 10.1007/s11423-014-9337-6

Kao, C., Tsai, C., & Shih, M. (2014). Development of a survey to

    measure self-efficacy and attitudes toward web-based professional development

    among elementary school teachers. *Journal of Educational Technology & Society*,

    17(4), 302-315. Retrieved from

    https://www.jstor.org/stable/jeductechsoci.17.4.302

Kastelle, T., & Steel, J. (2011). Ideas are not innovations. Prometheus, *29*(2), 199-205.

    Doi:10.1080/08109028.2011.608554

Killion, J. (2013). Tapping technology's potential. *Journal of Staff Development*, *34*(1),

    10-14. Retrieved from www.learningforward.org.

Killion, J., & Treacy, B. (2014). Myths about technology-supported professional

    learning. *Journal of Staff Development*, *35*(2), 12-18.

Kyriakides, L., Christoforidou, M., Panayiotou, A., & Creemers, B. (2017). The impact

of a three-year teacher professional development course on quality of teaching: strengths and limitations of the dynamic approach. *European Journal of Teacher Education*, *40*(4), 465-486. doi:10.1080/02619768.2017.1349093

Learning Forward (n.d.). In learning forward. Retrieved from http://learningforward.org/who-we-are/professional-learning-definition#.VYwp2WYhMt8.

Lesaux, N.K., Marietta, S.H., & Galloway, E.P. (2014). Learning to be a change agent: System leaders master skills to encourage buy-in for reform. Journal of staff development, *35*(5), 40-45. Retrieved from www.learningforward.org.

Luther, F. D. (2015). Preparing for CCSS implementation: Determining the state of web 2.0 technology. *Delta Kappa Gamma Bulletin*, *81*(2), 47-55. Retrieved from http://www.deltakappagamma.org

Marrongelle, K., Sztajn, P., & Smith, M. (2013). Scaling Up Professional Development in an Era of Common State Standards. *Journal of Teacher Education*, *64*(3), 202-211. doi:10.1177/0022487112473838

Martinie, S. L., Kim, J. H., & Abernathy, D. (2016). "Better to be a pessimist": A narrative inquiry into mathematics teachers' experience of the transition to the Common Core. *Journal of Educational Research*, *109*(6), 658-665. doi:10.1080/00220671.2015.1020913

Matherson, L., & Windle, T. M. (2017). What do teachers want from their professional development? Four emerging themes. *Delta Kappa Gamma Bulletin*, *83*(3), 28-32. Retrieved from http://www.deltakappagamma.org

Matlock, K. L., Goering, C. Z., Endacott, J., Collet, V. S., Denny, G. S., Jennings-Davis, J., & Wright, G. P. (2016). Teachers' views of the Common Core State Standards and its implementation. *Educational Review*, *68*(3), 291-305. doi:10.1080/00131911.2015.1070333

Matsumura, L. C., Bickel, D. D., Zook-Howell, D., Correnti, R., & Walsh, M. (2016). Cloud coaching: Web-based learning holds promise, especially for districts with limited resources. *Journal of Staff Development*, *37*(4), 31-34. Retrieved from www.learningforward.org

Matulich, Erika, Raymond Papp, and Diana L. Haytko. (2008) "Continuous improvement through teaching innovations: A requirement for today's learners." *Marketing Education Review 18*(1), 1–7. doi: 10.1080/10528008.2008.11489017

Maunsell, P. (2014). Communication is Key to Common Core. *Phi Delta Kappan, vol. 95*(6), 61-65. doi: 10.1177/003172171409500613

Maxwell, J. (2013). *Qualitative Research Design: An Interactive Approach.* Thousand Oaks, CA. Sage Publications.

McComb, V., & Eather, N. (2017). Exploring the personal, social and occupational elements of teacher professional development. *Journal of Education and Training Studies*, *5*(12), 60-66. doi: 10.11114/jets.v5i12.2794

McKimm, J., & Swanwick, T. (2010). Web-based faculty development: e-learning for clinical teachers in the London Deanery. *Clinical Teacher*, *7*(1), 58–62. doi: 10.1111/j.1743-498X.2009.00344.x

Murphy, Michelle R., and Kathleen J. Marshall. (2015) "Common core reparation in special education teacher education programs: Beginning the conversation." *Teacher Education and Special Education*, *38*(3), 167–85. https://doi.org/10.1177/0888406415577453.

Mustafa, J., & Al-Mothana, G. (2013). Using the diffusion of innovation theory to explain the degree of English teachers' adoption of interactive whiteboards in the modern systems School in Jordan: A case study. *Contemporary Educational Technology*, *4*(2), 138-149. Retrieved from http://www.cedtech.net.

NGA and CCSSO (2010). Common Core State Standards. Washington D.C.: National Governors Association Center for Best Practices, Council of Chief State School Officers. Retrieved from www.corestandards.org

Patton, M.Q. (2002) *Qualitative Research & Evaluation methods. 3rd Edition.* Thousand Oaks, CA. Sage Publications

Patton, K., Parker, M., Tannehill, D. (2015). Helping teachers help themselves: professional development that makes a difference. *NASSP Bulletin*, 99(1), 26-42. doi: 10.1177/0192636515576040

Peled, Y., Medvin, M. & Domanski, L. (2015). Integrating IWB use in Western PA K-12 schools Districts: The professional development connection. *Journal of Interactive Learning Research, 26*(3), 289-305. Retrieved from https://www-learntechlib-org.ezp.waldenulibrary.org/primary/p/42001/.

Polikoff, M. S. (2013). Teacher education, experience, and the practice of aligned

instruction. *Journal of Teacher Education*, *64*(3), 212-225.

doi:10.1177/0022487112472908

Porter, A., McMaken, J., Hwang, J., and Yang, R. (2011). "Common Core

Standards." *Educational Researcher*, 40(3), 103-116. Retrieved from

www.sagepub.com

Rempe-Gillen, E. (2018). Primary school teacher experiences in cross-phase professional

development collaborations. *Professional Development in Education*, *44*(3), 356-

368. doi:10.1080/19415257.2017.1328455

Saderholm, J., Ronau, R. N., Rakes, C. R., Bush, S. B., & Mohr-Schroeder, M. (2017).

The critical role of a well-articulated, coherent design in professional

development: an evaluation of a state-wide two-week program for mathematics

and science teachers. *Professional Development in Education*, *43*(5), 789-818.

doi:10.1080/19415257.2016.1251485

Saenz-Royo, C., Gracia-Lazaro, C. & Moreno, Y. (2015). The role of the organization

structure in the diffusion of innovations. Plos ONE, 10(5), 1-13.

doi:10.1371/journal.pone.0126076

Salley, L. A., & Bates, C. C. (2018). Adding a virtual component to professional

learning. *Kappa Delta Pi Record*, *54*(3), 135.

doi:10.1080/00228958.2018.1481662

Santamaria, L., & Surroca, J. (2011). Matching the goals and impacts of R&D

collaboration. *European Management Review*, *8*(2), 95-109. doi:10.1111/j.1740-

4762.2011.01012.x

Sargent, T. C. (2015). Professional learning communities and the diffusion of

pedagogical innovation in the Chinese education system. *Comparative Education

Review*, *59*(1), 102-132. doi: 10.1086/678358

Seashore, K. (2009). Leadership and change in schools: personal reflections over the last

30 years. *Journal of Educational Change*, 10(2/3), 129-140. doi: 10.1007/s10833-

009-9111-4

Smith, J. A., & Sivo, S. A. (2012). Predicting continued use of online teacher

professional development and the influence of social presence and sociability.

British Journal of Educational Technology, 43(6), 871–882. doi: 10.1111/j.1467-

8535.2011.01223.x

Spiro, J. (2012). Winning strategy: Set benchmarks of early success to build

momentum for the long term. *Journal of Staff Development*, *33*(2), 10-12.

Retrieved from www.learningforward.org

Storandt, B. C., Dossin, L. C., & Lacher, A. P. (2012). Toward an understanding of what

works in professional development for online instructors: The case of PBS teacher

line. *Journal of Asynchronous Learning Networks*, 16(2), 121–162. Retrieved

from http://sloanconsortium.org.

Sunde, E. S., & Ulvik, M. (2014). School leaders' views on mentoring and newly

qualified teachers' needs. *Education Inquiry (Co-Action Publishing)*, *5*(2), 285-

299. doi:10.3402/edui.v5.23923

Surrette, T. S., & Johnson, C. C. (2015). Assessing the ability of an online environment

to facilitate the critical features of teacher professional development. *School Science & Mathematics*, *115*(6), 260-270. doi:10.1111/ssm.12132

Thoma, J., Hutchison, A., Johnson, D., Johnson, K., & Stromer, E. (2017). Planning for technology integration in a professional learning community. *Reading Teacher*, *71*(2), 167-175. doi:10.1002/trtr.1604

Twining, P., Raffaghelli, J., Albion, P., & Knezek, D. (2013). Moving education into the digital age: The contribution of teachers' professional development. *Journal of Computer Assisted Learning*, *29*(5), 426-437. doi: 10.1111/jcal.12031

Vanderlinde, R., & Brask, J. v. (2011). A New ICT Curriculum for primary education in Flanders: Defining and predicting teachers' perceptions of innovation attributes. *Journal of Educational Technology & Society*, *14*(2), 124-135. Retrieved from https://www.jstor.org/stable/jeductechsoci.14.2.124

Vu, P., Cao, V., Vu, L., & Cepero, J. (2014). Factors driving learner success in online professional development. *International Review of Research in Open And Distance Learning*, *15*(3), 120-139. doi: 10.19173/irrodl.v15i3.1714

Whitaker, S., Kinzie, M., Kraft-Sayre, M., Mashburn, A., & Pianta, R. (2007). Use and evaluation of web-based professional development services across participant levels of support. *Early Childhood Education Journal*, 34(6), 379-386. doi: 10.1007/s10643-006-0142-7

Yates, J., & Leggett, T. (2016). Qualitative research: An introduction. *Radiologic Technology*, *88*(2), 225-231. Retrieved from http://www.radiologictechnology.org/

Ying, W., Shuttlesworth, D., & Craven, J. (2015). On beginning to use the English

    Language Arts Standards of the CCSS: What Mississippi delta teachers say.

    Journal of Reading Education, *40*(3), 34-40. Retrieved from

    www.learntechlib.org

Zacher Pandy, J. & Aukerman, M. (2014). A four resources analysis of technology in

    the CCSS. *Research and Policy*, 91(6), 429-435. Retrieved from

    https://ezp.waldenulibrary.org/login?url=https://search-proquest-

    com.ezp.waldenulibrary.org/docview/1540088093?accountid=14872

Appendix A: Interview Protocol

Research Questions

1.What are the views of educators on how web-based professional development

has impacted the implementation process of the English Language Arts Standards

and Mathematics Standards?

i.   What do you know about the new state standards?

ii.   When and how did you experience your formal introduction to the new
      state standards?

iii. Did you receive any professional development or guidance pertaining

      to the implementation process of the English Language Arts Standards

      and Mathematics Standards? If so, how often?

iv.   How useful was the professional development or guidance to you in

      the implementation process?

v.   Do you think that you were able to implement (adopt) this program

      successfully in the class?

vi.   Do you think that the implementation of the new standards would

      make a significant change in your classroom?

vii. What do you think would be the students' reactions to this?

viii. Can you name any specific advantages or disadvantages that you see

      when this process is fully implemented?

2. What are the perceived barriers and the challenges faced in the attempt to make

the web-based professional development for the implementation of the new state

standards successful?

i. Did you face any resistance from any party when the new ELA and Math standards were implemented in your classroom? If so, what were they? And how did you overcome them?

ii. Did you receive any specific support from anyone at your location or district during the implementation process? If so, what kind? And how often?

iii. What are your feeling about the support you received?

iv. Is there anything that would have made this process more successful for you?

v. Did you face or see any reactions to the implementation from your peers or parents?

` vi. Have you got anything else to say which is relevant to this implementation program?