Walden University

College of Education

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Grace Cook

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Walden University
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Abstract

A Case Study of Curriculum-Based Organizational Change

in an Elementary Teacher Preparation Program

by

Grace Elizabeth Cook

MS, Stevens Institute of Technology, 2001

BS, Stevens Institute of Technology, 2001

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

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Abstract

The implementation of the Common Core State Standards in English/Language Arts and Mathematics into the kindergarten through 12th grade curriculum in the United States presents a unique opportunity for teacher preparation programs to realign their curriculum with the curriculum of the primary and secondary schools. However, it is unknown how teacher preparation programs are approaching this possible change. This qualitative descriptive case study examined the organizational change process that was employed by one teacher preparation program to incorporate the Common Core State Standards for Mathematics (CCSSM) into their curriculum. The change was examined through the organizational development lenses of Kotter and Rogers. Interviews and a focus group with key stakeholders in the change process ($N = 13$) along with analysis of documents such as syllabi, research plans, and curriculum provided data to answer the research question. Data were initially coded into 5 main organizational categories, establishing, defining, implementing, refining, and finalizing, then further coded based on emergent themes. The last 2 categories, refining and finalization, were not clearly evident in the data, and therefore it was more difficult to use a priori coding. The data revealed that the leaders of the organizational change developed and delivered professional development activities to train faculty and aligned syllabi of general education and teacher education classes with the CCSSM. The results of this study can be used to help other teacher preparation programs plan organizational change and provide motivation for programs that have yet to address the CCSSM.

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Dedication

This dissertation is dedicated to my parents, Leah and Gary. Thank you for filling me with a lifelong love of learning and allowing me to follow my own path.

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To my stepparents, Wayne and Julie: I could not have asked for a greater set of second parents to love and support me.

To Dr. Janet Strickland, Dr. Cheryl Keen, and Dr. Alan Seidman: You three have been an incredible support system throughout all these years. I cannot thank you all enough for pushing me through this process and humoring me through my 4 a.m. breakdowns. Words just are not enough.

To my eighth grade Algebra teacher, Mr. Hicks: You instilled a love of math in me that I try to pass on to my students every day.

To my husband, Dexter: You have supported me unconditionally throughout this long, long journey. I could not have done this without your love, encouragement, and cups of hot tea. Thank you for giving me the time and space that I needed.

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Chapter 1: Introduction to the Study

Organizational development, sometimes referred to as organizational change, is a planned, total system change process with top-down management that leads to a healthy, effective organization (Beckhard, 2006). The process is iterative and typically involves diagnosing, planning, implementing, and evaluating the change (Cummings & Worley, 2011). Additionally, the change often encompasses the implementation of an innovation such as an idea, new knowledge, or a physical object, such as computer software (Rogers, 1983). These innovations are sometimes forced on an organization by external or environmental forces (Rogers, 1983). The introduction of the Common Core State Standards (CCSS) is such an innovation being integrated into the curriculum of U.S. primary and secondary schools. In this case study, I explored how one university's elementary mathematics teacher preparation program adapted the curriculum to produce graduates who are knowledgeable in this innovation.

The CCSS, developed by the Council of Chief State School Officers and the National Governors Association, are national mathematics and English language arts and literacy standards, a standardized list of topics and skills to be covered in school from kindergarten through 12th grade in the United States (Common Core State Standards Initiative [CCSSI], 2012a). For states that adopt the CCSS, the content of the curriculum for each grade level will be identical. For some states, this adoption will involve a major change in the structure and content of their curriculum because the CCSS are more rigorous and in-depth than previous state standards (CCSSI, 2012a, 2012e; Porter, McMaken, Hwang, & Yang, 2011). As such, postsecondary institutions in those states

will need to adjust the teacher education curriculum to ensure that preservice teachers are prepared to support and provide learning environments and instruction that help students meet or surpass the CCSS. Some institutions may find the transformative change required to be challenging due to limited resources and inexperience in organizational development (Kotter, 1996). This type of transformative change is broader and deeper than standard educational reform (Futrell, 2010).

Teacher preparation program staff and faculty must be willing to reexamine the way they prepare teacher candidates. Such a reexamination involves a reinvention of systems to be more responsive and flexible (Futrell, 2010). Kindergarten through 12th grade standards impact the methodologies of teacher preparation, certification, and evaluation (Heck et al., 2011). Too often curriculum change in grade schools and higher education occur separately from each other (Futrell, 2010). The CCSS present an opportunity for simultaneous reform for teacher preparation programs and K-12 education. Such improvement of teacher preparation programs will improve new teachers who enter the K-12 system. In this study, I addressed the transformative organizational change of one elementary teacher preparation program through incorporation of the CCSS for Mathematics (CCSSM) into their curriculum.

Chapter 1 provides background information pertaining to the creation and implementation of the CCSS at the primary and secondary level in the United States. The problem statement and purpose statement of the study help to shape the research question. A conceptual framework based on organizational development is defined along

with the nature of the study. Definitions, assumptions, delimitations, and limitations are described. The significance of the study to higher education is discussed.

Background

To promote collaboration between states in order to pool and focus resources, multiple education policymakers and organizations called for the development of a set of national standards (National Education Association [NEA], 2010). A set of national standards would allow for shared assessments, shared policies, and shared instructional resources (NEA, 2010). The Council of Chief State School Officers and National Governors Association, along with the College Board, ACT, and Achieve, developed the College and Career Ready Standards for English language arts and mathematics (NEA, 2010). The College and Career Ready Standards defined the skills and knowledge essential for students to succeed in college and the workplace (NEA, 2010). After a review and revision process, the College and Career Ready Standards were approved by the states and used to create the CCSS for Mathematics and English Language Arts and Literacy in History/Social Studies, Science, and Technical Subjects (CCSSI, 2012b; NEA, 2010). The CCSS were reviewed and revised by the NGA, CCSSO, National Education Association, The College Board, Achieve, ACT, American Federation of Teachers, International Reading Association, National Council of Teachers of Mathematics, and National Council of Teachers of English (NEA, 2010). With the implementation of the CCSS, teacher education programs will need to incorporate these standards into their curriculum in order to prepare teacher candidates.

Problem Statement

The CCSS were developed to prepare students for the demands of college or workforce training programs (CCSSI, 2012a). The CCSS represent an increase in difficulty and complexity in the math and English language arts standards for many states (CCSSI, 2012a, 2012e; Porter et al., 2011). Preservice teachers must be prepared to teach to the new standards.

Little research has been conducted concerning how traditional elementary teacher education programs are adapting their curriculum to meet the demands of the CCSSM. This lack of research is a problem because teacher preparation programs are not sharing information through professional associations, journals, websites, and so on, regarding whether they have addressed the standards, and if so, how.

The Association of Public and Land-Grant Universities (2011) advised that colleges and universities needed to revise their current curriculum in order to train teacher candidates to implement the CCSS. In addition, the study of how teacher preparation programs are aligning their curriculum with the CCSS was suggested as a priority line of inquiry in Heck et al.'s (2011) research agenda for understanding the influence of the CCSSM, a project sponsored by the National Science Foundation. This line of research was based on feedback from numerous math educators and math education and policy researchers. Similarly, the Conference Board of the Mathematical Sciences (2011) decided that knowledge of the CCSS was one of the more important topics to be highlighted in the second Mathematical Education of Teachers report. Educational organizations are calling for change, but few resources or research has been

found about how teacher preparation programs have made any changes to incorporate the CCSS.

In this study, I addressed the gap in the literature by focusing on organizational change made in response to the CCSSM at one teacher preparation program. As of September 2014, 43 states, Washington DC, and four territories had adopted the standards (CCSSI, 2012c). The standards are being put into widespread use in K-12 school and cannot be ignored by teacher education programs.

Purpose of the Study

The purpose of this qualitative case study was to understand the change process that occurred when traditional teacher education program faculty and administrators adapted their program to integrate the CCSSM through a college-based initiative. The intent was to discover and describe what actions were taken to address the CCSSM at the case school. Using in-depth interviews, observations, a focus group, and artifact review, I gathered information about implementation and responses. The results will allow the school to reflect upon their progress and identify areas of improvement. While readers may be drawn to a focus on the CCSS that is common in the media, such as arguments over its creation, high stakes testing, and its use in K – 12 curriculum, this research focused on organizational change implemented in a university teacher preparation program because of the adoption of the CCSSM.

Research Question

What actions have a traditional elementary teacher preparation program's faculty and staff taken to incorporate the Common Core State Standards for Mathematics into their curriculum?

Conceptual Framework

Teacher preparation programs will need to revise their curriculum through organizational change to meet the difficult demands of the CCSSM in order to ensure that their graduates are capable of successfully communicating and teaching the topics in the CCSSM. Organizational development theory describes how and why change occurs in organizations and what can motivate the change. This study was grounded in organizational development theory.

I viewed the research question through the lens of organizational development theories developed by Kotter (1996) and Rogers (1983). Kotter's and Rogers's organizational development theories provide a framework for organizational change based on a step-by-step process. Planned change theory guides all organizational development efforts (Cummings &Worley, 2011). Change theories, such as Kotter's and Roger's, describe the stages of change and help organization's individuals implement these stages (Cummings & Worley, 2011). The stages of Kotter's and Rogers's theories were used to help interpret the organizational development steps taken by the program faculty in order to implement change through a case study tradition. I synthesized the eight steps in Kotter's theory and the five steps in Rogers's theory into five descriptive categories to use as an explanatory framework: *establishing a basis for the change*,

defining the change, *implementing the change*, *refining the change*, and *finalizing the change*.

Nature of the Study

I employed a qualitative descriptive case study for the research. Qualitative research involves developing rich descriptions of processes and building concepts with data collected by the researcher (Marshall & Rossman, 2011). Case studies are best used to focus on specific programs or processes (Creswell, 2012; Yin 2013). In addition, a descriptive case study provides a rich and detailed description of a program or progress (Merriam, 2009). I collected all data from one teacher preparation program that had undergone organizational change.

Information was gathered through three sources: semi structured interviews with faculty, staff, and administrators who participated in the organizational change process; a focus group with initiative participants; and a review of artifacts such as grant proposals, syllabi, and committee notes. Data were analyzed and coded with Dedoose in order to discover themes relevant to Kotter's and Rogers's organizational change stages. An initial coding was performed using five main organizational codes: establishing, defining, implementing, refining, and finalizing. After this initial review, any recurring themes were identified as subcodes, and the data were coded a second time with these subcodes.

Definitions

Accreditation: The process of a college, university, or program receiving a certain level of approval for operating at a level of quality and integrity from a U.S. Secretary of

Education recognized education organization (The National Council for Accreditation of Teacher Education, 2012; U.S. Department of Education, 2013).

Common Core State Standards: The set of mathematics and English language arts and literacy standards created by the National Governors Association Center for Best Practices, Council of Chief State School Officers and released in 2010 (CCSSI, 2012a; NEA, 2010).

Elementary education: Kindergarten through fifth grades (CCSSI, 2012d).

Organizational change (or development): Planned, total system change process with top-down management that leads to a healthy, effective organization (Beckhard, 2006).

Teacher education (or preparation) program: An accredited college/university-based program that graduates students with the qualifications needed to teach a specific subject in the program's home state (The National Council for Accreditation of Teacher Education, 2012).

Teacher candidates/preservice teachers: Individuals enrolled in a teacher education program.

Assumptions

I assumed that participants would respond truthfully and completely to all interview questions and would provide representative documents. In addition, I assumed that administrators would be willing to truthfully discuss successes and failures in the organizational change whether or not these actions reflected poorly on the change. Without these assumptions, the information gathered from participants would be

unusable. I also assumed that participants would be able to accurately remember the events; while the organizational change is ongoing, it began only a few years ago in 2010. Additionally, I assumed that the publicly available documents about the change would provide data to allow me to answer my research question. There was a risk that the public documents that initially led me to this case would not reflect what I found upon extensive data collection.

Scope

The study focused solely on the organizational development process of an elementary mathematics teacher preparation program whose faculty and administrators chose to incorporate the CCSSM into the curriculum. The program is a part of a public university located in the mid-South region of the United States. Members of the teacher preparation program along with members of the university Teaching and Learning Center (TLC), members of the Mathematics department, and an internal university reviewer were interviewed and asked to participate in the focus group. Only stakeholders who played a direct role in the change process were initially included in the study. As the research progressed, it was necessary to speak with other members of the university to understand elements of the change process.

Delimitations

All data collected through documents were limited to this university. In addition, the study was focused on organizational curriculum changes and not changes in pedagogy. The focus was on the organization, rather than the individual instructor.

Limitations

Because this study was limited to one teacher preparation program at one university, conclusions drawn may not be applicable to other programs with different student populations. In addition, regulations related to teacher preparation, credentialing, and certification vary from state to state and might have an impact upon changing curriculum to include the CCSSM. Therefore, teacher preparation programs in different states from the case school might have additional obstacles to overcome if attempting to implement a similar plan.

Significance

In this study, I described how one university-based teacher preparation program responded to the adoption of the CCSSM. The results of this study can be used to create an organizational change plan to integrate the CCSSM into other teacher preparation programs. This plan would provide guidelines and potential best practices. In addition, the findings of this study may serve as motivation for teacher preparation programs that have yet to address the CCSSM. Discussions that took place during the study could help the faculty and staff of the teacher preparation program to determine if additional changes are required in the program structure.

Summary

The introduction of the CCSS for Mathematics and English Language Arts and Literacy into the curriculum of a majority of K-12 schools in the United States demands a response from teacher preparation programs. Teacher candidates need to be prepared to teach to these new standards. This study explored the organizational changes of one

collegiate teacher preparation program caused by the integration of the CCSSM into their curriculum. A qualitative case study was used to gather information through interviews, a focus group, and artifact review.

Chapter 2 is a literature review pertaining to the CCSS and organizational development. Current peer-reviewed literature on the CCSS and college/university curriculum based organizational change are examined. Classic literature pertaining to organizational development is used to develop the conceptual framework for the study. Topics for the literature review include the CCSS, curricular-based organizational development, step-based organizational development, and teacher preparation programs. Chapter 3 is a discussion of the research methodology including the research design and rationale, the role of the researcher, and issues of trustworthiness. In Chapter 4 the results of the case study are discussed, and in Chapter 5 the results are interpreted and recommendations are made.

Chapter 2: Literature Review

The CCSS represent an effort to standardize state curriculum standards in order to uniformly prepare students for the workplace or college (CCSSI, 2012a). When compared to the majority of current state standards, the CCSS are a more difficult and complex set of standards in mathematics and English language arts (CCSSI, 2012a, 2012e; Porter et al., 2011; Schmidt, Houang, & Cogan, 2011). Therefore, teacher preparation programs will need to ensure that their programs reflect these new standards in order to properly educate teacher candidates (Heck et al., 2011). Little research can be found regarding what types of changes teacher education programs have made or how those changes have been made. The purpose of this qualitative case study was to detail the change process that occurred when traditional teacher education program faculty and administrators adapted their program to integrate the CCSSM. A mid-South university's elementary education program was this study's primary focus.

An extensive literature review revealed a dearth of information regarding teacher education programs' responses to the CCSS. Several organizations and researchers have called for research regarding teacher education programs and the CCSS, especially in mathematics (ASCD, 2012; Heck et al., 2011; Wilson et al., 2011). While many surveys have indicated that state education leaders are concerned about the responses of programs and many higher education officials have stated that changes are in progress (Greenberg, McKee, & Walsh, 2013b; McMurrer & Frizzell, 2013), a review of the current literature fails to reveal much information. This lack of information indicates a gap in the literature pertaining to teacher education programs' implementation of the CCSSM.

Literature Search Strategy

I used multiple education and business databases to search for articles and documents starting from 2009 pertaining to the CCSS, teacher preparation, and organizational change. I gathered journal articles from peer-reviewed journals found through library databases and Google Scholar searches. The databases I searched included Academic Search Complete, Business Source Complete, Education Research Complete, ERIC, Teacher Reference Center, SAGEJournals, and ProQuest Central. I used the following search terms and phrases in various combinations to gather appropriate articles: *Common Core State Standards*, *common core*, *state standards*, *teacher preparation*, *teacher education*, *college of education*, *higher education*, *organizational change*, *organizational development*, *Kotter*, *Rogers*, and *curricular change*. I also searched for variations and abbreviations on the search terms such as *org dev*, *curriculum change*, and *teacher ed*. In addition, a Google Scholar alert provided daily e-mails with articles and websites pertaining to *Common Core State Standards*, *teacher*, and *preparation*.

Because so few peer-reviewed articles were available, I also gathered white papers and policy papers from websites of various state and federal governments and American universities and colleges. I also searched through the websites of Common Core affiliated organizations such as CCSSO, National Governors Association, Educational Testing Service, and Achieve, as well as educational and teaching organizations such as the National Council of Teachers of Mathematics, Council of Chief State School Officers, and the National Council of Teacher Quality. I found additional

documents through a review of daily online education publications such as *The Chronicle of Higher Education*, *Inside Higher Education*, and selected editions of *Education Week*.

I found very little research regarding organizational change of curriculum and organizational change based on the CCSS. This lack of research is partially due to the fact that the standards were only released in 2010 (NEA, 2010). Some states have adopted the standards and begun incorporating them into the K – 12 curriculum, while others have partially adopted the standards or rejected the standards outright (CCSSI, 2012c). Many states are arguing the merits of the common core in their legislative bodies. (Common, HB237, 2013; Common, SB190, 2013; Common, SB0193, 2013; Curriculum, HB565, 2013; Education, SB167, 2013; Prohibiting, HB2289, 2013; Public, HB25, 2013). As such, I analyzed articles regarding organizational change in educational settings.

This chapter provides a discussion comparing the CCSSM to old state standards, analyzing the preparedness of teachers and teacher candidates, examining previous education mandates and states' current actions, and considering suggested lines of research concerning teacher education and the CCSSM from education organizations. Having established the differences in the new and old standards, the need for improved teacher education, and the need for research into the CCSSM's implementation in the first part of the literature review, I present a conceptual framework through the organizational development research and step based methods of Rogers and Kotter that was used to understand one program's effort to implement the CCSSM into a teacher preparation program.

CCSSM Compared to Previous State Standards

The CCSS present a common list of standards for participating states in the United States. States and schools determine how the standards are integrated into the curriculum (Heck et al., 2011). Several researchers have suggested that the CCSSM are more in-depth and difficult than previous states' standards (Heck et al., 2011; Porter et al., 2011; Carmichael, Wilson, Porter-Magee, & Martino, 2010). Porter et al.'s (2011) analysis of the alignment between the CCSSM and the then current state standards utilized the Surveys of Enacted Curriculum, a nationally recognized content analysis procedure. Information was available for 27 states, with 14 of them having data for third through eighth grades (Porter et al., 2011). While these data do not cover all 50 states, they provided a broad view of the previous state standards.

Porter et al. (2011) found that the CCSSM and the state standards had low to moderate alignment with each other. The CCSSM placed lower emphasis than state standards on memorization, performing procedures, and conjecturing while emphasizing increased levels of demonstrating understanding and solving nonroutine problems (Porter et al., 2011). This emphasis indicated that, on average, the CCSSM stressed more importance on higher cognitive demands as opposed to the cognitive demands made by the state standards. Porter et al. (2011) found this shift most apparent in Grades 3 through 6. Comparisons of enacted curriculum among fourth grade teachers showed a greater emphasis on memorizing, conjecturing, and demonstrating (Porter et al., 2011). This indicated that most fourth grade teachers were focusing on the lower cognitive demands when teaching.

In general, Porter et al. (2011) found the CCSSM to be more focused, as opposed to broad, than the then state standards. The elementary CCSSM showed an increased percentage of standards related to number sense, operations, measurement, consumer applications, basic algebra, and advanced geometry and a lower percentage of emphasis on advanced algebra, geometric concepts, data displays, statistics, probability, analysis, trigonometry, special topics, functions, and instructional technology (Porter et al., 2011). The CCSSM emphasized depth of content over breadth.

Researchers at the Fordham Institute, a nonprofit educational research group, ranked the CCSSM as seven points out of seven in content and rigor (Carmichael et al., 2010). The researchers awarded points on criteria such as content chosen, coverage and order of topics, and level of rigor (Carmichael et al., 2010). Based on a 2010 review of state standards, California, the District of Columbia, Florida, Indiana, and Washington were the only states whose previous standards had the same ranking of seven out of seven points (Carmichael et al., 2010). The majority of states had standards that were less difficult than the CCSSM. If teacher preparation programs are still educating teacher candidates using the old standards as a guide, Porter et al.'s (2011) and Carmichael et al.'s (2010) review support the claim that prospective and current teachers will require additional training in order to teach these new rigorous standards.

Underprepared Teachers and Teacher Candidates

Reports showed that the current curriculum being presented in many elementary mathematics teacher education programs in the United States was not aligned to the CCSSM and failed to educate teacher candidates with a rigorous mathematics education

(Heck et al., 2011; Wilson et al., 2011). Teacher preparation programs are facing increased pressure from outside sources, such as professional societies, local and national governments, and educational think-tanks, to improve their programs and graduate more effective teacher candidates (American Federation of Teachers [AFT] Teacher Preparation Task Force, 2012; Imig, Wiseman, & Imig, 2011). Competition presented itself in the form of Teach for America, the New Teacher's Project, proprietary schools, and state run alternate route programs (AFT Teacher Preparation Task Force, 2012; Imig et al., 2011). Improving the teacher education curriculum is a necessity in these turbulent times.

Each year, over 200,000 teacher candidates graduate from U.S. teacher preparation programs (Greenberg et al., 2013b). These programs vary widely with respect to curriculum, courses, and levels of preparation (AFT Teacher Preparation Task Force, 2012; Greenberg et al., 2013b). The CCSSM can impact teacher preparation, teacher certification, and professional development (AFT Teacher Preparation Task Force, 2012; Heck et al., 2011; Wilson et al., 2011). Aligning teacher preparation curriculum with the CCSSM is considered a top priority by several researchers (AFT Teacher Preparation Task Force, 2012; Heck et al., 2011; King, 2011; Wilson et al., 2011). This alignment would bring some uniformity between states and colleges in regard to their teacher education programs.

Teacher Preparation Programs

Several studies have reported that current teacher preparation programs are not adequately preparing teacher candidates to teach mathematics, especially at the

elementary level. The Trends in International Mathematics study surveyed final year teacher candidates from approximately 900 programs in over 17 countries (Schmidt, Burroughs, & Cogan, 2013). From the results, researchers produced a benchmark of five necessary classes for primary mathematics teachers. Of those surveyed in the study, only 56% of the American teacher candidates had taken all five suggested primary benchmark classes (Schmidt et al., 2013). Based on these results, Schmidt et al. (2013) suggested that elementary teacher preparation programs must improve their programs to compete internationally and to produce graduates who are qualified to teach mathematics.

In addition, the National Council of Teacher Quality's Teacher Preparation report, a ranking of 1,209 U.S. university and college based teacher preparation programs, found that 65% of undergraduate elementary teacher preparation programs and 98% of graduated elementary teacher preparation programs failed to provide coursework that addressed essential mathematics topics in breadth and depth (Greenberg, McKee, & Walsh, 2013a). This supported Banilower et al.'s (2013) analysis of the 2012 National Survey of Science and Mathematics Education. They found that based on the National Council of Teachers of Mathematics five core classes (number and operations, algebra, geometry, probability and statistics), only 10% of teachers surveyed had completed all five at the collegiate level. Thirty-two percent of those surveyed completed three to four classes, while 57% of the teachers had only completed one to two of the classes (Banilower et al., 2013). Thirty percent of the undergraduate and 92% of the graduate programs in Greenberg et al.'s (2013a) study failed to provide any math content courses in their teacher preparation curriculum. Of the remaining programs analyzed by

Greenberg et al. (2013a), 10% of the undergraduate programs addressed the topics breadth-wise while only 25% of the undergraduate programs and 2% of the graduate programs addressed them breadth-wise and depth-wise.

In a study of over 1,000 teacher education programs, Greenberg et al. (2013a) found that many elementary mathematics programs focused on methods courses, while content courses were less prevalent or sometimes nonexistent. Greenberg et al. (2013b) additionally evaluated the added sufficient value of each program in regard to the CCSS in a variety of ways with a four star rating system. In the category of Common Core Elementary Math, the average score for the undergraduate elementary programs was 1.3 out of 4 stars and 0.1 out of 4 stars for the graduate programs, with 72% of the programs earning between 0 and 2 out of 4 stars (Greenberg et al., 2013b). A majority of the programs evaluated, especially at the graduate level, showed little evidence of rigorous, if any, mathematics content coursework. The mean semester credit hours of required elementary mathematics content coursework were 4.0 for undergraduate programs and 0.3 for graduate programs (Greenberg et al., 2013b). It appears teacher preparation programs are failing to educate preservice teachers who will be able to effectively teach the type of mathematics specified by the CCSSM.

Professional Development

Many programs fail to provide a strong mathematics background to their teacher candidates based on previous state standards due to the lack of classes, as described in the previous section. If the CCSSM are more difficult content wise, future teacher candidates will find themselves further behind (AFT Teacher Preparation Task Force,

2012). This problem carries through in weak professional development for current teachers. Of current elementary school teachers surveyed in the 2012 National Survey of Science and Mathematics Education, 77% of them felt they were very well prepared to teach numbers and operations (Banilower et al., 2013). However, that percentage dropped to 56% for measurement and data representation, 54% for geometry, and 46% for early algebra (Banilower et al., 2013). Banilower et al. also found that 77% of the same elementary teachers felt well prepared to teach mathematics, which suggested that elementary teachers felt that elementary mathematics was predominantly numbers and operations. Their beliefs could be why teachers felt less prepared to teach the more advanced topics of measurement and data representation, geometry, and algebra. Future elementary teacher graduates need a strong mathematics foundation in order to teach the harder CCSSM.

To implement a set of new standards and to have teachers become competent in the teaching of those new standards, this amount of training seems vastly inadequate. Other surveys directly related to the CCSS showed that 29% of teachers in states that have adopted common core standards had not received any training pertaining to the CCSS (Editorial Projects in Education Research Center, 2013). Of those who had received some training, 12% received less than 1 day, 16% received 1 day, 31% received 2 to 3 days, and 13% received 4 to 5 days (Editorial Projects in Education Research Center, 2013). An American Federation of Teachers sponsored survey (Hart Research Associates, 2013) found that 57% of the 763 teachers surveyed felt their school district was prepared to implement the standards, while 39% felt the districts were only

somewhat or not ready to implement the standards. Of those teachers, 53% felt they were not given enough professional development related to the CCSS. Twenty-two percent of those surveyed had not received any training as of March 2013 and of those that received training for the CCSS, only 43% felt that it was adequate (Hart Research Associates, 2013).

Banilower et al. (2013) found that over a 3-year period, 70% of teachers surveyed had 15 hours or less of any mathematics related professional development. In the Editorial Projects in Education Research Center study (2013), 35% of those teachers who received training felt the training was not high quality. The professional development for current teachers regarding the CCSSM, and mathematics in general, is inadequate. Therefore, teacher preparation programs should adapt their curriculum in order to better educate their future graduates. The programs should not depend on school systems to bring their graduates up to date on the standards (Heck et al., 2011). To be competent teachers, the teacher candidates should have a firm grasp of the standards when they graduate and before they enter the classroom.

Calls for Research and Change to Teacher Education

ASCD (2012) and Heck et al. (2011) have suggested that higher education needs to adjust the curriculum to integrate the CCSS into their programs. Many states have adopted the standards, implemented them within the K-12 curriculum, and begun high-stakes testing as of the 2013 school year. Teacher candidates must be prepared to teach mathematics at the demanding levels of the CCSSM (ASCD, 2012). Additionally, teacher preparation programs need to understand how to teach the mathematical practices

of the CCSSM and how those can be integrated into the curriculum (Heck et al., 2011; Wilson et al., 2011). Heck et al. (2011) consulted the CCSSM authors and coordinators, math educators, and math and policy researchers regarding the key areas of research for the CCSSM. Among the several lines of suggested research was the need to understand how the CCSSM influences the higher education system (Heck et al., 2011). Heck et al. (2011) also suggested asking questions concerning how teacher preparation programs aligned with the CCSSM, how curriculum decisions were made, and how the programs were adapted to incorporate the standards. The Leadership Collaborative of the Association of Public and Land-Grant Universities stressed that the role of higher education included not only preparing future teachers and revising curriculum for working with the CCSSM but also conducting research on the impact of the CCSSM (Wilson et al., 2011).

Wilson et al. (2011) suggested that disciplinary courses and professional preparation courses needed to be changed to incorporate the CCSSM. Several studies showed that current classes were not sufficient for the mathematics required for the CCSSM (Greenberg et al., 2013a, 2013b; Schmidt et al., 2011; Schmidt et al., 2013). Preservice teachers need the opportunity to master the new material in the CCSSM (Wilson et al. 2011).

Mandated Education Reform

Education reform in K-12 education and higher education, especially teacher preparation, often occurs as two separate, independent initiatives (Futrell, 2010). Very rarely has there been an opportunity for such overlap as is presented by the

implementation of the CCSS. Previous K-12 reforms have included the space race of the 1950s, equity issues of the 1960s, the minimum competency standards movement of the 1970s, and the reform associated with A Nation At Risk in the 1980s (Futrell, 2010). These reforms, however, focused almost exclusively on K-12 and provided little purpose or reason for a collaborative higher education reform. No Child Left Behind accelerated education reform into the 21st century and has been one of the dominating forces behind education reform in K-12 education (Futrell, 2010; Terry, 2010). Recent K-12 education reforms have revolved around STEM education, 21st century skills, professional learning communities (PLCs), and national teacher certification standards (Futrell, 2010). Higher education has responded to some of these reforms, such as STEM Education and 21st century skills, but in a parallel manner, not a joint manner. Little research reflects how these movements have effected teacher preparation on a larger scale.

Individual colleges and universities have implemented education reform prior to the introduction of the CCSS. Thirty teacher preparation programs participated in the Teachers for a New Era program implemented in 2001 by the Carnegie Corporation of New York (Poliakoff, Dailey, & White, 2011). This program sought to ground teacher education in sound evidence, engage the arts and sciences, and promote clinical practice (Poliakoff et al., 2011). Poliakoff et al.'s study focused on the organizational change that occurred at each school as the new program was implemented.

Programmatic Response to Mandated Change

Many programs undergo curriculum review as mandated by school requirements or accreditation organizations. Oliver and Hyun's (2011) analysis of the curriculum

review at Ashland University revealed the inner workings of a comprehensive curricular reform at the postsecondary level mandated by the school itself. Oliver and Hyun (2011) found barriers to change such as time constraints and stakeholder participation coming from internal and external forces. They proposed that a shared vision and appropriate organizational infrastructure were keys to successful organizational change, while stressing the importance of focusing on the individual as well as the culture of the organization. Kotter (1996) and Rogers (1983), as discussed later in the chapter, shared many of the same beliefs and concerns.

Merton and Clark (2009) examined internally prompted curricular change at a small engineering school, while Farris, Demb, Janke, Kelley, and Scott's (2009) study of a school of pharmacy revealed curricular change instigated by a change in national standards. Farris et al. (2009) used Kotter's framework to study curricular change, while Merton and Clark utilized Schein's work on culture and Clark's organizational saga lens. Both studies stressed the importance of taking culture into account even though different frameworks were used. Both changes were guided by new standards, but showed different levels of success based primarily on how well culture was considered in the change process.

States' Current Actions

States' responses to the CCSS have varied due to political, personnel, and fiscal constraints. These responses included changing state assessments to align with the CCSS, revising teacher certification requirements, and developing professional development for new and current teachers (Kober & Rentner, 2011). In a 2010 survey,

researchers found that 42 state deputy superintendents were committed to the adoption of the CCSS and had no plans to change the decision (Kober & Rentner, 2011). The number one reason for this commitment was the apparent rigor of the CCSS (Kober & Rentner, 2011).

Many state education officials had concerns regarding the participation of higher education in the implementation of the CCSS. Many state deputy superintendents of education regarded aligning teacher preparation program content with the CCSS as a major challenge (Kober & Rentner, 2011; McMurrer & Frizzell, 2013). State and education officials also showed concern with working with higher education teacher preparation programs to align the teacher preparation content with the CCSS (Kober & Rentner, 2011; McMurrer & Frizzell, 2013). This indicated that there is a need for teacher preparation programs and state education departments to have meaningful conversations about the incorporation of the CCSS and to share resources and ideas about implementation.

Many state education agencies reported that higher education teacher preparation programs were, in some way, preparing teacher candidates to teach the CCSS; however McMurrer and Frizzell (2013) found in their analysis of the Center on Education Policy's states survey that a few state education agencies did not know what teacher preparation programs were doing in this regard. Changes being made included revisions to teacher preparation curriculum, including academic and pedagogical content, and requiring more content courses (Kober & Rentner, 2011; McMurrer & Frizzell, 2013). However, Kober

and Rentner's (2011) survey showed that some state deputy superintendents of education did not have an exact idea of the changes being made within the programs.

Efforts are being made within state education agencies to engage with university and college based teacher preparation programs, but the results vary by state and by intensity. Each state is adopting the same set of standards but the interpretation, implementation, and results will be different (Heck et al., 2011). Many state education agencies do not appear to know what the programs are doing even though researchers have stressed the importance of studying how programs are aligning with the CCSSM and how the changes developed (Heck et al., 2011). Teacher preparation programs need to do a better job of sharing their changes and communicating and cooperating with the state education agencies. This could also lead to opportunities for states to share resources as they work with teacher preparation programs to implement changes (Heck et al., 2011; NEA, 2010).

Not all states are supportive of the CCSS. As of September 2014, six states and Puerto Rico are not using the CCSS (CCSSI, 2012c). In several other states, bills have been brought before the state legislature to reject the common core standards either in its entirety or certain parts of it, or delay the implementation (Common, HB237, 2013; Common, SB190, 2013; Common, SB0193, 2013; Curriculum, HB565, 2013; Education, SB167, 2013; Prohibiting, HB2289, 2013; Public, HB25, 2013). As of September 2014, only five of these bills had passed their respective state legislatures (Ujifusa, 2014).

Case Studies and Organizational Change

Effective organizational development is a planned change process led by leaders, managers, and groups that help to create a healthy environment in an organization (Beckhard, 2006; Kotter, 1996; Rogers, 1983). The process involves diagnosing, planning, implementing, and evaluating the change (Cummings & Worley, 2011). Organizational development often involves the diffusion of an innovation throughout an organization (Rogers, 1983). An innovation is any new idea being introduced into an organization, such as the CCSSM (Rogers, 1983). Innovations in education that have required planned change included maximizing use of Wi-Fi capabilities in the classroom and the implementation of innovative teaching methods such as "active learning" (Lu, Quan, & Cao, 2009; Pundak & Rozner, 2008). The process of implementing the CCSSM into a teacher preparation curriculum will likely require planned transformative change. An organizational development framework as described by Kotter (1996) and Rogers (1983) details a planned, stage based method of creating change. The theories of Kotter and Rogers are widely used and respected in the field of organizational development and innovation diffusion. Each theorist was cited several thousand times in peer-reviewed journals and books in the field in 2013 alone.

Case Studies on Organizational Development

To examine organizational change within an organization, many researchers employed the use of case studies. Case studies involve intense descriptions and analysis of a single bounded system with a focus on events and processes (Creswell, 2012; Merriam, 2009; Rubin & Rubin, 2005). The methodology allows for the exploration of a

problem (Creswell, 2012). I reviewed 11 studies on organizational change and all of the researchers used a qualitative case study or an analysis with similar qualities to a case study where a single site was studied through the use of qualitative data collection such as interviews and focus groups, but they were not specified as case studies. A majority of the studies used interviews and document analysis, just as I used. Data from qualitative interviews help researchers develop rich descriptions to assist in answering research questions (Rubin & Rubin, 2005). Document analysis provides another source of information to enhance the validity of the study (Merriam, 2009). Furthermore, I reviewed an additional 17 articles, which were not used in this dissertation, concerning organizational development, and six of those articles used a case study format.

A majority of the articles employing case studies used only one case. A single case study allows a researcher to delve deeply into the background and narrative of the process being researched (Baxter & Jack, 2008). The phenomenon of organizational change can be viewed within an actual organization. In addition, researchers often use a "one-shot case study" (p. 9) design to explore a specific event or an activity being introduced into a program (Dawidowicz, 2011). The implementation of the CCSSM into a teacher education program would be an appropriate use of the one-shot case study. As seen through the literature review, not many teacher preparation programs have implemented organizational change to incorporate the CCSSM. Therefore, the location I have chosen for my case study is a unique environment. A single case study is appropriate if the situation is unique (Baxter & Jack, 2008). A deeper discussion of single case studies and validity risks follows in Chapter 3.

Lack of Success in Organizational Change

Too frequently, change has disappointing effects on organizations from wasting resources to burning out employees (Kotter, 1996). Change almost always involves some negative effects, so it is important for organizations to attempt to minimize those effects (Kotter, 1996). Kotter (1996) found that organizations can make a number of errors when attempting to implement change. These included allowing complacency, failing to create powerful guiding groups, failing to create and communicate a powerful guiding vision, permitting obstacles to derail change efforts, failing to create short-term wins or using short-term wins to declare success, or failing to incorporate change into the corporate culture (Kotter, 1996). Barriers in higher education can include lack of resources such as time, untrained staff, funding and staffing cuts, lack of institutional support, and an excessive focus on bureaucracy (Nahata et al., 2010; Parker & Quinsee, 2012).

In their narrative of curricular change at City University London, Parker and Quinsee (2012) found that many faculty members saw curriculum design as administrative work and often focused on content rather than design or delivery. This disconnect between design and implementation led to failures in previous implementations of institutional curricular change at the school. In another example of organizational change failure, Merton, Froyd, Clark, and Richardson's (2009) analysis of an engineering school's implementation of a freshmen program found that the organizational development group failed to take the culture of the school into account

when implementing the new curriculum. As a result, Merton et al. (2009) proposed that the freshman curriculum failed to achieve its program goals and garner staff support.

Kotter (1996) found that such errors could lead to inflated time, staff, and monetary costs, and failure to achieve real change results. Real transformative change takes time and cannot be sped up (Rogers, 1983). Organizations must be realistic in their resource commitments when planning the change process.

Stakeholders Involved in Change

People often view change as a solitary event led by a highly visible individual (Kotter, 1996); a decision is made, then implemented, and then employees deal with the consequences. Real organizational change is a multi-step process with input from multiple stakeholders and guidance from leaders and managers (Kotter, 1996; Rogers, 1983).

Rogers (1983) divided stakeholders into innovators, early adopters, early majority, late majority, and laggards. Innovators are the first adopters of the change. These can be individuals, groups, or entire organizations depending on the scope of the change and the size of the social system (Rogers, 1983). Innovators and early adopters are the best resources for spreading information and helping to implement the change. Rogers (1983) found that the early and late majority are slower to adopt, while the laggards are very resistant to change. The earliest adopter of the CCSS, the innovator according to Rogers (1983), was the state of Kentucky on February 10, 2010 (CCSSI, 2012c). The next two states, Wisconsin and West Virginia, did not adopt the CCSS until June 2, 2010 (CCSSI, 2012c).

Stakeholders can include internal and external groups and individuals. In education settings, faculty, administrators including deans and chairs, and students are typical stakeholders (Farris et al., 2009; Lu et al., 2009; Nahata et al., 2010; Oliver & Hyun, 2011). An entire division or college of a school can be regarded as a single entity stakeholder (Nahata et al., 2010). Sometimes stakeholders involve adopters and non-adopters of the innovation such as in Lu et al.'s (2009) study on the adoption and nonadoption of Wi-Fi among faculty members.

Processes of Change

Kotter (1996) and Rogers (1983) described organizational development as a series of steps or phases that take an organization through the process of change. The steps are shown in Table 1. I have adapted the steps into five descriptive categories found in the third column of Table 1: *establishing a basis for the change*, *defining the change*, *implementing the change*, *refining the change*, and *finalizing the change*. These five categories further guided this literature review of organizational change and helped with the analysis of the data collected in the study.

Table 1

A Comparison of Kotter's and Rogers's Processes

Rogers's steps	Kotter's steps	Descriptive category
Agenda setting	Urgency, coalition	Establishing a basis for the change
Matching	Vision, communication	Defining the change
Redefining/restructuring	Empowering	Implementing the change
Clarifying	Generating, consolidating	Refining the change
Routinizing	Anchoring	Finalizing the change

Note. The information in column 1 is paraphrased from *Leading Change*, by: J. P. Kotter, 1996, Boston, MA: Harvard Business Review Press. The information in column 2 is paraphrased from *Diffusions of Innovations* (3rd ed.), by: E. M. Rogers, 1983, New York, NY: The Free Press.

I discuss each of these steps and how they relate to previous examples of organizational development and curriculum change.

Establishing a basis for change. To establish a basis for the change, the first step, managers and leaders need to examine the organization and its environment. They should look for signs of complacency in order to address those signs to create a sense of urgency (Kotter, 1996). For instance, at Ohio State University (OSU), an assessment by an organizational development specialist created urgency for renewing vision and strategic priorities within the school of pharmacy (Nahata et al., 2010). Similarly, changes in pharmacy education, including an accreditation mandate, prompted the

college of pharmacy in Farris et al.'s (2009) case study to implement major organizational change.

Rogers (1983) recommended searching for where the innovation can add value to the organization as a means of creating urgency. The members of the organization need to see why the change is necessary and how it will benefit them. Rogers (1983) described this as the relative advantage of the change. Without a relative advantage, an innovation or change is less likely to be supported.

In addition to creating this need for change in the organization, Kotter (1996) recommended setting up a guiding coalition. This group should be composed of individuals with power, expertise, credibility, and leadership (Kotter, 1996). Rogers (1983) recommended using opinion leaders to help guide the change: individuals with influence and prestige among their peers and who are perhaps early adopters. The college of pharmacy in Farris et al.'s (2009) study created two committees of leaders to help with their change process; however, overlapping responsibilities caused some initial confusion. Alternately, Nahata et al. (2010) found that the OSU division of pharmacy created one vision and strategy group with a clear purpose that was able to implement cultural changes when needed.

The guiding coalition needs leaders and managers who are willing to commit to the change process and deal with the consequences that may arise. These consequences include those that are desirable and undesirable, direct and indirect, and anticipated and unanticipated (Rogers, 1983). The guiding coalition must also possess real power to make the necessary changes (Kotter, 1996). Kotter (1996) stressed that the coalition

creates the common goal and helps move the change process towards that goal. OSU used a vision and strategy group to first deal with cultural issues, then create a new vision for the division based on a SWOT (strengths, weaknesses, opportunities, and threats) analysis (Nahata et al., 2010). The school empowered the group to remove barriers before working on the new vision. Empowerment to remove barriers is another idea suggested by Kotter (1996).

Defining the change. To define the organizational change, leaders need to create a vision statement as the second step in the process. A vision statement should be succinct and clear, for it acts as the guiding principle for all stakeholders in the change effort (Kotter, 1996). The college of pharmacy in Farris et al.'s (2009) study started the change process with an unclear vision and had to modify it as they went along; however the guiding coalition remained committed to the overall vision throughout the change process. The vision provides an overall picture of the new and improved organization with specific and achievable goals, but flexible enough to incorporate alterations that may arise (Kotter, 1996). Rogers (1983) further suggested that the vision should make a connection between the innovation and a problem or weakness of the organization. In this way, individuals can easily understand how the change can help the overall organization. Kotter (1996) found that without an easy to follow vision, organizational change could often devolve into a group of disconnected efforts, reforms, and projects.

Both Kotter (1996) and Rogers (1983) agree that once a vision statement has been created, it is important to share that statement with all stakeholders inside and outside of the organization. Kotter (1996) stressed that information should be shared repeatedly

through formal and informal lines of communication throughout the organization; a process referred to as diffusion by Rogers (1983). These lines can include large and small group meetings, websites, mass e-mails, or memos (Kotter, 1996; Rogers, 1983). The earliest adopters of Wi-Fi technology at a Midwestern state university gathered information from technical conferences and field magazines to help with their decision to adopt (Lu et al., 2009). Lu et al. (2009) also found that early adopters used more interpersonal lines such as colleagues, faculty meetings, students, and librarians. Alkhateeb, Khanfar, and Loudon's (2009) study of physicians' adoption of pharmaceutical detailing found most interpersonal communication to occur informally between colleagues. The later someone adopted the innovation, the more likely they were to gather information from informal sources.

Leaders and managers should be prepared to answer questions and keep communication moving back and forth between stakeholders (Kotter, 1996). Frequently information flows from a group within the organization that is experienced with the innovation to groups that are not experienced (Rogers, 1983). This diffusion of information allows knowledge to be transmitted from experienced to novice users.

Rogers (1983) found that important information to relay can involve relative advantage of the innovation, compatibility, complexity, trialability, and observability. Stakeholders needs to understand how the innovation is advantageous to them, how it works in the current culture, how difficult it is to use or understand, how it can be tested, and how they can see its results. High trialability, ability to test, has been found to be easiest in forms of technology such as wi-fi and e-detailing software where potential

users are given the opportunity to use computers and to test the technology (Alkhateeb et al., 2009; Lu et al., 2009). However such technology lends itself to low visibility and observability unless the interested party is physically using it (Alkhateeb et al., 2009; Lu et al., 2009). Technology can prove very complex to those without a regular internet connection or to users with limited computer skills (Alkhateeb et al., 2009; Lu et al., 2009). The relative advantage of an innovation varies for individuals within an organization. Several instructors in Lu et al.'s (2009) case study found little use for wi-fi technology in their classroom, while physicians in Alkhateeb et al.'s (2009) study found an increased advantage to using e-detailing software to relay pharmaceutical information to physicians because of its ease, quality of information, and efficiency. These factors are all part of Rogers's (1983) innovation-decision process, influencing the individual's decision regarding why, when, and how to adopt the innovation.

Implementing the change. Multiple stakeholders will be involved in this third step in the process of change and will require guidance from leaders and coordination from managers (Kotter, 1996). Kotter stressed that empowering employees to enact the change is one of the best ways of implementation (Kotter, 1996). The change becomes individually driven and therefore more important and internalized for the individual. Adopters typically tweak the change to meet their situation and will sometimes need to change organizational structures in order to successfully implement the change (Rogers, 1983). Pundak and Rozner (2008) found that instructors in their case study incorporated the parts of innovative teaching methods that best suited their teaching styles. Hence, the change was not fully implemented by all stakeholders. Kotter (1996) found that leaders

and managers might avoid partial implementation by empowering employees towards change through training, explaining the vision, encouraging new behaviors, and facilitating the removal of barriers. This may also involve difficult conversations with stakeholders who are resilient to change: the laggards of the adopters (Kotter, 1996; Rogers, 1983).

Refining the change. Short-term wins help leaders determine if change is on the right track in this fourth stage of change (Kotter, 1996). These wins help clarify the change and provide evidence of the connection between the organization and the change (Rogers, 1983). Without these types of wins, stakeholders can become disillusioned with the process. Kotter (1996) found that evidence of success must be apparent, otherwise there is the risk of individuals giving up on the change. He also discovered that it is important that leaders create the opportunity for these wins, not just hope that they occur naturally during the process. In an implementation of an open source learning management system, college officials used pilot programs to showcase the benefits of using the new system (Uy, 2010). Short-term wins should be significantly related to the change and easy to identify, while avoiding tricks or stunts (Kotter, 1996). Stakeholders will not take the change seriously and stay committed if they do not see evidence of progress in a reasonable amount of time.

Kotter (1996) also proposed that short-term wins allow the guiding coalition to make alterations to the process and fine-tune the change (Kotter, 1996). OSU's college of pharmacy's vision and strategy group invited all faculty to attend a faculty retreat in order to participate in refining the change. Farris et al. (2009) and Licina (2012) found

that additional personnel were hired to act as facilitators of change. These personnel provided necessary assessment and evaluation during the final stages of the change while sometimes acting as liaisons between different parts of the organization. While it is important to celebrate short-term wins, Kotter cautioned that they should not be viewed as a final victory in the change process. Momentum must be maintained in order for the change to become a part of the culture of the organization (Kotter, 1996). Kotter found that individuals or even entire organizations can revert back to pre-innovation behaviors and patterns if the change is not finalized.

Finalizing the change. To finalize the change, it is important to show how the new innovation improves the overall organization and how it is integrated, and therefore inseparable, from the organization (Kotter, 1996; Rogers, 1983). This may take a significant amount of time. The change becomes a part of the culture through altered behaviors and new, shared values or norms (Kotter, 1996; Rogers, 1983). Farris et al. (2009) found that the curricular changes became embedded in the college culture when individual faculty members incorporated the changes. The change is integrated into the culture to the point where it would be very difficult to separate the two. At OSU, a new administrative structure was created in the division using existing faculty members as strategic area leaders (Nahata et al., 2010). This empowered faculty and created an internal structure to support the new vision. Unfortunately this type of cultural change may involve removing personnel who are actively attempting to block the change (Kotter, 1996). It is important to keep the lines of communication open between stakeholders, managers, and leaders to minimize these unpleasant consequences.

Summary and Conclusions

An exhaustive literature review was performed to gather information related to organizational development, the CCSS, teacher preparation, and curriculum change. A conceptual framework of organizational development relating to Kotter's and Rogers's change theories was analyzed using recent case studies. The CCSSM were compared to previous state standards and found to be more difficult. As such, it was determined that current elementary teachers and teacher candidates will be unprepared to teach to them. Calls to research were shared along with the actions states that have adopted the CCSS into their primary and secondary school curriculum. Little to no research was found pertaining to specific actions being undertaken by teacher preparation programs in each state. This case study is a descriptive analysis of the changes implemented by one elementary teacher preparation program in order to incorporate the CCSSM into their curriculum.

Chapter 3 is an explanation of the research methodology for the case study. The research design is discussed and a rationale is provided. My role as a researcher is discussed, followed by an explanation of the participant selection process and the development of the research instruments. The data analysis plan along with a discussion of issues of trustworthiness is shared.

Chapter 3: Research Method

Introduction

The purpose of this qualitative case study was to explore and understand the change process that occurred when traditional teacher education program faculty and administrators adapted their program to integrate the CCSSM. This chapter presents the research process that was employed to gather information concerning the change process.

Research Design and Rationale

The research question of this study focused on the actions and processes of a single teacher preparation program at a university in regard to incorporating the CCSSM into the curriculum. The research question was as follows:

> What actions have a traditional elementary teacher preparation program's faculty and staff taken to incorporate the Common Core State Standards for Mathematics into their curriculum?

As this research focused on gathering information in order to form a narrative of organizational change, qualitative research was most appropriate. Qualitative research explores realities constructed by individuals and is used to understand processes that individuals undertake (Marshall & Rossman, 2011; Merriam, 2009). In addition, Creswell (2012) found qualitative research appropriate when a "problem or issue needs to be explored" (p. 47).

Approaches to Qualitative Research

There are many approaches to qualitative research. Some of the most popular include phenomenonology, grounded theory, case study, ethnography, and narrative

analysis (Creswell, 2012; Merriam, 2009). Research in phenomenological studies focuses on experiences and meanings for individuals (Creswell, 2012; Merriam, 2009). This doctoral study focused on the changes in the organization, not a particular experience of an individual. Researchers in grounded theory studies seek to develop a theory of practice based on data gathered (Creswell, 2012; Merriam, 2009). The goal of this study was not to develop theory regarding the process of organizational change, but instead to describe and analyze the process of organizational change. Ethnographic researchers explore the shared patterns of human society and culture (Creswell, 2012; Merriam, 2009). This type of research is not appropriate because the study did not focus on a shared cultural group. The purpose of a narrative analysis is to share the story of lives and frequently includes biographies of single individuals (Creswell, 2012; Merriam, 2009). This dissertation research focused on an organization and not on recording the life stories of the individuals in the organization.

Case study research focuses on a single individual or group as an individual in order to provide a rich and detailed description (Dawidowicz, 2011; Merriam, 2009). A case study was an appropriate qualitative approach to addressing the research question because the goal of this research was not to make broad generalizations regarding overall organizational change, but rather to focus on the processes of a specific program (Creswell, 2012). This case study focused solely on the teacher preparation program, TLC, Mathematics department, and associated staff and faculty of one university. In addition, case study research focuses on bounded systems with information gathered from multiple sources such as interviews, observations, and document analysis (Creswell,

2012; Merriam, 2009; Rubin & Rubin, 2005). Case studies allow for flexibility in the research process thereby allowing researchers to follow new leads depending on the data collected (Dawidowicz, 2011). This descriptive case study described the process that occurred in this closed system of one university's teacher education program.

Role of the Researcher

I was the sole researcher for this case study and gathered all data as an observer and performed all data analysis. I conducted all interviews and led the focus group. I treated all participants with respect during interviews and the focus group. I collected program artifacts from the university website and directly from study participants. I did not provide any incentive for participating in the study and participants were advised that they could leave the study at any time without pressure. I do not have a personal or professional relationship with any members of the campus where I conducted my research. In all interactions I attempted to remain professional, neutral, and objective.

Throughout the data collection and analysis, I recorded my thoughts and reflections in a journal. Journaling allowed me to focus on my conceptual framework and how my data related to the framework. This thought process allows researchers to focus on inductive thinking and avoid deductive reasoning (Baxter & Jack, 2008). In addition, journaling is a time for self-reflection and self-critique during the study (Maxwell, 2013). Sharing these reflections with a member of my committee for feedback helped me identify potential areas of bias and subjectivity and address those accordingly.

Methodology

The methodology section provides a description of the participant selection logic, instrumentation, and the data analysis plan. The single case study was selected through a thorough Internet and database search, followed up by e-mailing the top selection. The instruments used in the interviews, document analysis, and focus group are discussed, and a plan for analyzing the data collected through these instruments is reviewed.

Participant Selection Logic

To gather data for the study, an appropriate teacher preparation program was selected. The program must have experienced organizational change as a result of integrating the CCSSM into their curriculum. Using Internet and database searches for the search terms *ccss*, *Common Core State Standards*, *math*, *teacher preparation*, *college of education*, and *curriculum*, I created a list of several schools that had published descriptions and analyses of their organizational change. Further research into the extent of the change on those campuses helped me to narrow the list to one strong candidate campus and two backup candidates. The strong candidate campus had faculty and staff who had published several peer-reviewed articles pertaining to the organizational change and had an extensive website dedicated to the process. However, these articles were not in-depth and only gave a general overview of the process. Additionally, this university's change process was supported through an independently funded grant and was prompted through the university's home state's adoption of the CCSS as the official state standards. The level of documentation required for such a grant ensured there was adequate data for a one case sample.

This method of purposeful sampling was appropriate for qualitative research according to Maxwell (2013). Because a specific sample was required for this case study, the school was chosen purposefully as opposed to using a randomly selected school. Also, Light, Singer, and Willett (1990) recommended using purposeful sampling when there are a limited number of sites. As many colleges and universities have not actively incorporated the CCSS into their curriculum or, if they have, they are not publically sharing that information, the selection of cases was very limited.

My research question revolved around the process of change within a teacher preparation program and the perspectives of the people involved. I planned to delve deeply into the process, so I focused my attention on only one program. Miles, Huberman, and Saldana (2013) stated that small samples allow for in-depth research. While it would be interesting to profile several such programs, I was limited by time constraints and by my personal resources. I did not have any research assistants and needed to perform all data collection on my own. In addition, many programs had not shared information regarding their process as readily as the selected case and it was therefore difficult to determine if they had experienced any organizational change or were willing to share it. As such, a sample size of one was appropriate for this case study. From this sample, I attempted to interview all members involved in the organizational change.

I selected one school that had exhibited organizational change because of the implementation of the CCSSM. My case study consisted of a single program but involved several subsettings as described by Miles et al. (2013). These subsettings

included the Mathematics department, the College of Education, and the TLC. I contacted several individuals in these subsettings through e-mail to determine if they were interested in participating in a case study. All contacted individuals showed interest, and a College of Education faculty member volunteered to be my community partner for this study. The community partner verified that IRB approval would not be needed from his or her own university and obtained permission from the dean to sign off on the community partner consent form. I attempted to interview all individuals, approximately 13 faculty and staff members, involved in the change process. These included faculty members from the teacher preparation program and the Mathematics department and administrators of the change process from the TLC. The case school provided an e-mail to the Walden University IRB indicating their willingness to partner with me for this study.

Instrumentation

Data were gathered through interviews, artifacts, and a focus group. A majority of data was gathered during a one-week site visit to the case school. This visit occurred following IRB approval from Walden University. IRB approval from the case school was not deemed necessary by the case school's IRB.

As the school is located at quite a distance from my home, I attempted to conduct all interviews during my visit week so that they were face-to-face. Any interviews that could not be scheduled during this time were conducted through FaceTime. A semistructured interview technique was used. Semistructured interviews involve broad topic areas to be explored under a few predetermined questions (Merriam, 2009). These

types of interviews allow for flexibility within the questions and allow interviewees to shape their story in a more natural manner. The interview guide for the individual interviews can be found in Appendix A.

Interviews helped me answer the research question by revealing what actions were taken and how those actions were implemented. The interview questions were based on the conceptual framework and sample questions from an advanced qualitative research course at Walden University. All questions were vetted by my dissertation committee members along with fellow students and colleagues. As interviews progressed, data were reviewed to ensure that the research question was being answered. If there were any issues, the interview questions were revised.

Interview protocols were developed using APA guidelines. With participant permission, all interviews were recorded using recording software on a Macintosh computer. A digital recorder and cassette recorder were used as a backup. In-person interviews took place one-on-one, or in one case with two individuals who worked closely together, in a comfortable campus setting with minimal noise. In addition to recording the interview, I took notes pertaining to facial expressions and body language during the interview. I attempted to limit interviews to one hour maximum in order to ensure participant comfort and to accommodate schedules. Interviewees had the opportunity to review complete transcripts at a later date, after transcription, in order to add information or clarify any statements.

In addition, I held a focus group with initiative participants. I conducted the focus group after a majority of the individual interviews. In this way, I was able to review the

interview results and look for common themes that I could then ask the focus group to expand upon. Interview and focus group transcripts and recordings were analyzed using Dedoose.

Further information was gathered from archival data from before and after the organizational change such as syllabi, department meeting notes and agendas, guiding coalition meeting notes and agendas, vision statements, and action/strategic plans. Syllabi showed how classes were adjusted, an important part of curriculum, and meeting notes and agendas revealed the steps and actions taken to incorporate the CCSSM into the teacher preparation curriculum. Coding archival data revealed information related to each of the five organizational categories explained in the next section: establishing, defining, implementing, refining, and finalizing. Several departments of the school maintained a website dedicated to the change process. I gathered archival data through this website. I also asked participants if there were any additional documents that I could view and copy that were not available through public channels. All documents were analyzed using Dedoose. These data showed the actions taken throughout the initiative and how those actions changed the curriculum of the teacher preparation program.

Triangulation. Data triangulation uses multiple sources of information to help enhance the validity of research results (Guion, Diehl, & McDonald, 2011; Merriam, 2009). These different sources of information often take the form of stakeholders in qualitative research (Guion et al., 2011). I interviewed multiple stakeholders involved in the change process including faculty from the Mathematics department and College of

Education and administrators of the initiative. The responses of each of these stakeholders were compared to discover common themes.

Methodological triangulation occurs when data from multiple methods are compared to seek common themes (Guion et al., 2011). I collected data through interviews, document analysis, and a focus group. Coding data from these different methods allowed me to discover themes that were shared across the data collected.

Data Analysis Plan

I used Dedoose, a qualitative research program, to perform my data analysis. All data gathered, interview transcripts, artifacts, and articles, were entered into Dedoose and coded. Coding helped me to note patterns and themes in order to find relationships between stages, and to then build a logical chain of evidence (Miles et al., 2013). Data were initially coded into five organizational categories based on the conceptual framework: establishing, defining, implementing, refining, and finalizing. These were broad categories developed prior to the interview in order to fracture the initial data (Maxwell, 2013). Following this initial coding, I reviewed the data to determine any recurring themes and patterns. Subcodes were developed based on these recurring themes and patterns. The data were coded a second time using the subcodes. Any discrepant themes that emerged were noted and analyzed. To ensure intracoder reliability, a member of my dissertation committee reviewed the first interview that I coded. To increase the reliability of my coding, I also asked a colleague to code one interview and compare it to my own coding of the same interview to see if there were areas to which I needed to pay closer attention. I was the sole coder for the full data set.

Internal validity. Internal validity refers to how correct or credible the descriptions, conclusions, and results of a study are (Maxwell, 2013). Minimizing biases and validity threats adds to the internal validity of a study. Yin (2013) found that internal validity is mainly a concern for explanatory case studies because they are seeking to show causality. This study was a descriptive case study and did not seek to determine causality. However, there is still a risk to the validity if the researcher attempts to force a result or description based on a conceptual framework (Maxwell, 2013; Yin, 2013). To attempt to minimize the biases and threats to internal validity I viewed all data as objectively as possible. I did not attempt to force data into one of my initial five descriptive categories. Because I was creating new codes after my initial coding with the descriptive categories, I was able to draw connections to any new ideas that arose that differed from the conceptual framework. In addition, I used the review of a transcript by a committee member to identify any potential biases in my coding of the data. Journaling, as described in the previous sections, also allowed me to explore any areas of subjectivity and to address them immediately.

Issues of Trustworthiness

To establish credibility and dependability, I triangulated the data gathered from interviews, artifacts, and a focus group as described in the previous section. In addition, I allowed all interviewees to review transcripts of their own interviews and add any additional information or clarify any of their statements to ensure confirmability of the data. I used thick description language to allow readers to interpret and transfer possible suggestions and methods to their own programs.

Ethical Procedures

To ensure an ethical study, IRB approval was obtained from Walden University. All participants completed the informed consent procedure outlined below. Participants of the study had the option of leaving the study at any time for any reason.

All participant names were kept confidential and pseudonyms were used instead. A trusted colleague who was unaffiliated with the case study university transcribed all audio recordings. The individual signed a confidentiality agreement prior to transcribing the data. All data and audio files were stored on a password-protected computer and on a password-protected cloud account. I was the only person with access to the computer and the cloud account.

Informed Consent Procedure

Each participant completed consent forms before the interview and focus group were conducted. The Sample Consent Form for Adults provided by the Walden Research Center was adapted to obtain consent. This form included information regarding background, procedures for the interview, voluntary nature of the study, risks, payment, privacy, and contacts and questions. This form can be found in Appendix C. The interview protocol was outlined, and the interview questions were provided to participants beforehand. No payment was given for participation, but refreshments were provided by the college at the focus group in conjunction with a monthly meeting.

Summary

A qualitative case study was conducted to gather information pertaining to organizational change at a single teacher preparation program. I used interviews, a focus

group, and artifact review to gather pertinent information. Data were coded initially with five broad categories using Dedoose. Additional codes were developed following an analysis of data. Triangulation was used to establish the confirmability of the results. All procedures were reviewed to ensure strict adherence to ethical standards.

In Chapter 4, I share the results of the case study. The setting along with participant selection, data collection and analysis, and evidence of trustworthiness are discussed. Rogers's and Kotter's steps of organizational change are used to frame the discussion of the results.

Chapter 4: Results

Introduction

This study examined the change process of a traditional teacher education program as the faculty and administrators adapted their curriculum to integrate the CCSSM. In this chapter, the setting, participant selection, data collection, and results of the qualitative case study are explained. The research question of this study focused on the actions and processes of a single teacher preparation program at a university in regard to incorporating the CCSSM into the curriculum: What actions have a traditional elementary teacher preparation program's faculty and staff taken to incorporate the Common Core State Standards for Mathematics into their curriculum? Data were collected through document analysis, interviews, and a focus group.

Setting

The teacher preparation program selected is a part of a public university located in the mid-South region of the United States. The university was implementing Stage 2 and Stage 3 of the three-stage initiative at the time of this writing. This research study focused solely on Stage 1 of the change.

While not the focus of this study, I did examine the program requirements and course descriptions for the program. The program required a college algebra course, three levels of mathematics for elementary school teachers, and an elementary math methods course. In addition, students had the option of one mathematics elective: problem solving, models, statistical reasoning, or applied statistics.

Participant Selection

The interview participants consisted of former and current faculty and staff from the university. The current faculty included one assistant professor from the Mathematics department, two professors and two assistant professors from the Curriculum and Instruction department of the College of Education, one adjunct faculty member from the College of Education, two administrators from the TLC, and one assistant professor from the Educational Leadership department of the College of Education. The former faculty member had been an assistant professor in the Mathematics department. Several faculty involved in Stage 1, professional development and syllabi revision, have either left the university or dropped out of the PLCs. All of those interviewed, except the adjunct faculty member and the professor from the Educational Leadership department, had participated in the initiative from the beginning. The Educational Leadership department assistant professor joined the university partway through the initiative and participated solely as an evaluator.

The focus group participants included 7 of the 10 participants of the interviews. In addition, three other PLC members contributed in the focus group: an associate and assistant professor from the English department and a professor from the History department.

Data Collection

For this case study, data were collected through a document analysis, individual or group interviews, and a focus group. Individual interviews were conducted with eight former and current faculty members, while a joint interview was conducted with the two

TLC administrators. A majority of the interviews were held in private offices. The interview with the two administrators from the TLC was held in a meeting room adjoining their office, while the interview with the former faculty member was held by SKYPE the week after the site visit. Interview lengths varied from 10 minutes to 90 minutes. Interviews were recorded using Audacity on a MacBook Pro with backups recorded on a digital recorder and a cassette recorder. Transcripts were created from the Audacity recordings.

The only variation from the original interview data collection plan was that the two administrators from the TLC wished to be interviewed together. Because they work so closely with one another, this deviation was logical. During their interview, we were interrupted by an incoming group and had to move into their office adjoining the meeting room.

A focus group was conducted with 10 participants in a meeting room during a luncheon provided as a part of a regular meeting of the initiative. The math faculty member and history faculty member joined the focus group approximately 45 to 60 minutes into the 90-minute meeting. Audio was again recorded using the MacBook, the digital recorder, and the cassette recorder. No unusual events occurred during the focus group.

Documents were collected from public websites maintained by the university. In addition, documents were e-mailed to me or uploaded to Dropbox by initiative participants and the operations specialist. These documents included syllabi (31), meeting notes (51), PowerPoint presentations (11), grant proposals and executive

summaries (8), a roster (1), schedules (8), lesson plans (2), evaluations (3), and journal articles and press releases (12). Meeting notes were only required to be kept the first year of the initiative, so there are no notes pertaining to meetings following the first stage of the initiative. These documents were analyzed using Dedoose, a mixed-methods data analysis program.

Data Analysis

All documents, recordings, and transcripts were uploaded into Dedoose. Each file was classified by three descriptors: department source, type of document, and associated PLC. Department source descriptors included *Anthropology*, *Communications*, *Economics*, *Education* (this descriptor included the Curriculum and Instruction department and the Educational Leadership department), *English*, *Geography*, *History*, *Mathematics*, *Political Science*, *Psychology*, *Science*, *Social Science*, and *Sociology*. Because some of the documents were not related to a particular department the following department sources were also added: *tlc*, *professional development*, *evaluation*, and *all*. Types of documents included *article*, *evaluation*, *grant*, *information*, *interview*, *lesson plan*, *minutes*, *presentation*, *roster*, *schedule*, *syllabus*, and *legislature*. The associated PLCs included *all*, *communication*, *English*, *executive*, *mathematics*, *n/a*, *natural science*, *social science*, *super*, and *teacher preparation*.

In the first round of review, excerpts were created and coded for all documents and interviews using five parent codes: *establishing, defining, implementing, refining, and finalizing*. During this initial review, I created a timeline in order to keep track of the changes the organization went through. This helped me to establish guidelines for what

actions fell into each of the five original parent codes and which fell outside of them. I also kept track of recurring themes in order to develop emergent codes. These additional codes were *evaluation*, *next step*, *obstacles*, *presentation*, *plcs*, and *interesting*.

The excerpts were coded again according to the emergent codes. *Interesting* was used to keep track of excerpts that did not fall under any other main parent codes but were still possibly related to organizational change. As PLCs were a major part of the organizational change, I thought it would be useful to track the references to them in the documents, but there were so many that this code became trivial, and I removed it from the list of codes. Any information related to the internal evaluation performed during the initiative was coded under *Evaluation*, while the *Presentation* code was used to keep track of dates and locations of presentations. There were many references to specific obstacles during the initiative so I tracked those separately with the *Obstacles* code.

Afterwards, I reviewed the excerpts coded as *PLC* and *Interesting*. All of the excerpts coded as *PLC* were recoded as *Defining* or *Implementing* because of the overlap with the codes. Excerpts coded *Interesting* were coded with one of the other parent codes or were deemed irrelevant to the research question.

Evidence of Trustworthiness

As described in Chapter 3, credibility and dependability were established through transcript review and a triangulation of data. A copy of the interview transcripts was sent to each participant through e-mail to allow for them to add any additional information, clarify any statements, or to retract any comments. Three interviewees made additional comments, while the remaining did not.

The document, interview and focus group codes were compared to ensure accuracy. Thick descriptive language that included quotes from interviews, the focus group, and the documents was used to ensure transferability of the information shared.

To ensure intracoder reliability, I had a committee member review my coding for an interview transcript. In addition, I had two trusted colleagues code the same transcript using Dedoose. In order to maintain confidentiality during others' coding processes, I replaced all identifying names with pseudonyms and removed all date references. Based on this feedback, I adjusted approximately 2% of the coding.

To allow for reflection, I kept a journal throughout the data gathering and coding process. Following each interview, I reviewed my typed notes and recorded my reflections through Audacity. I reviewed these reflections while coding to help ensure that I was maintaining an impartial view throughout the process. In addition, I kept a notebook next to me during the coding process to record any ideas or additional questions that occurred to me. After I had finished coding, I reviewed these notes and made revisions to my writing or contacted participants with further questions.

Results

The results have been grouped by the following themes: establishing a basis for the change, defining the change, implementing the change, refining the change, finalizing the change, and obstacles. The first five themes were the predetermined codes used in the first round of coding as guided by the conceptual framework of Rogers's (1983) and Kotter's (1996) work . Obstacles occurred throughout all five stages of change so they were grouped under their own theme because of their importance to the change process.

As a precursor to investigating the five stages of the change process, I sought to determine the faculty's interpretation of the state legislation that prompted the initiative. Many faculty members interviewed stated that in response to statewide college graduation and retention rates, the state legislature passed a law to introduce rigorous mathematics and English standards, promote appropriate assessment, and increase the effectiveness of teachers. A high number of students in the state were not college ready and almost half required some form of remediation math and/or English at the college level. Interviewees and the focus group saw the law as a mandate for higher education and K-12 education to work together and provide a seamless transition from K-12 to higher education and then back to K-12 for new teachers. Faculty described many different goals of the law: school improvement at the P-16 level, reduced remediation rates, increased passing rates of students in remedial classes, enhanced teacher preparation, increased college and career readiness, and improved instruction for the CCSS.

Prior to the initiative, several other efforts had sought to implement large-scale change at the university. While I did not specifically ask about previous efforts, several interviewees discussed these prior efforts in their interviews as a way to preface certain actions in the current initiative. Previous efforts were mainly administrator rather than faculty driven. During this initiative the university focused on faculty in an effort to learn from their mistakes. In addition, they sought a neutral party to oversee the initiative.

Establishing a Basis for the Change

The first descriptive category, as seen in Table 1, was *establishing a basis for the change* a combination of Rogers's agenda setting stage and Kotter's urgency and coalition stages. The state law provided the urgency, as described by Kotter (1996), to initiate change at the study university. Colleges and universities in the state were required to incorporate the CCSS into their general education and teacher preparation classes. One of the College of Education faculty members described this law as a "disruption to the norm," and that it really shook up faculty members in many departments at the university. Others stated that college faculty would not have changed if not for the law. Another education faculty member described "meltdowns" in which instructors, especially in the Mathematics department, were upset about changing instructional strategies. The faculty member commented that "you teach the way you were taught" and the incorporation of the CCSS disrupted this practice for many.

Faculty reported that the administration wanted a faculty driven change overseen by individuals who were nonpolitical, well-respected experts with the appropriate credentials. The administration wanted chair support but did not want chairs running the initiative. Several interviewees stressed the efforts to make this a grass-roots bottom-up initiative. The initiative would be a detailed and complex operation that required campus-wide faculty participation. The administration selected two staff members of the TLC to lead the initiative. The members of the TLC were very active on campus with professional development and well regarded. In addition, both staff members were former faculty members of the College of Arts and Sciences.

The TLC members recruited an additional faculty member with experience in teacher preparation and educational policies. In turn, after the grant to fund this transition was written, that faculty member recruited another member with experience in standards and K-12 teachers. These four formed an executive PLC. These four were recognized in the campus community as experts in the CCSS and in pedagogy. All members of the executive PLC thought they worked well together and that each possessed certain strengths and skills. One of the TLC members was characterized as "logistically organized" while the other could "see issues in a broad sense." The first recruited member had connections and experience at the state level, while the second recruited member acted as a spokesperson at many professional development meetings. In addition, an operations specialist was brought on to assist with record keeping, budgeting, and logistics. Many interview participants deemed the operations specialist invaluable to the process.

The executive PLC oversaw the administration of the initiative, which entailed delegating funding, supporting participants, training facilitators, developing intellectual property, troubleshooting, and reporting to the state. The guiding coalition was tasked with applying for a non-competitive grant in order to meet the requirements of the state law. The first three members helped write the grant, with the fourth member being brought on after its approval. The grant was administered by a state run council for postsecondary education. All public universities in the state were encouraged to apply for the grant. Other than the grant money, the executive PLC was encouraged to use existing resources when possible.

Beyond that, some members of the executive PLC felt unfocused and that "they were making it up as they go along." Once the grant was awarded the executive PLC had to determine what exactly to do. Many involved in the initiative perceived the agency awarding the grant as being very hands off and not providing specific guidance as to the direction the university should take in its execution of the state mandate.

The initiative was initially broken down into three phases by the grant writers, each phase with its own product as shown in Table 2. However, based on interviews, meeting notes, and university reports, there was overlap between phase 1 and 2 and some confusion over what constituted phase 1 versus phase 2.

Table 2

Phases of Initiative

Phase	Timetable	Actions	Product
1	18 months - completed	• Establish executive, super, and content area PLCs • Learn about CCSS and PLCs • Align syllabi with CCSS	• Aligned syllabi • Online training modules
2	Start after completion of Phase 1 - ongoing	• Recruit more faculty to initiative • Learn about assessment, instructional strategies, retention • Develop instructional strategies based on best practices and aligned syllabi	• Faculty use instructional strategies
3	Start 1 year after start of Phase 2 - ongoing	• Recruit more faculty to initiative • Learn advanced assessment techniques • Use assessment tools as well as their results	• Pre/inservice teachers and school leaders demonstrate application of CCSS in lesson planning, instruction, assessment, and leadership activities

In summary, in the first stage, the university determined a general course of action to meet the needs of the state legislature. A guiding coalition, the executive PLC, was assembled to start the planning process for the initiative. The executive PLC developed a three-phase process which led to *defining the change*.

Defining the Change

After establishing the grounds and urgency for change, the next stage of the process was *defining the change*. In the initial application for the grant, three of the four members of the executive PLC had two broad goals: revise syllabi related to teacher preparation to incorporate the CCSS and provide professional development to faculty in regard to aligning course content and pedagogy with the CCSS. The guiding coalition met to decide how to start the initiative and how to engage faculty from all across the university. They decided to implement an embedded PLC model for the initiative, which would allow members to be involved in two PLCs at all times. In this way, all participants would feel empowered by being both a leader and a follower.

Embedded professional learning communities. Much of the executive PLCs initial conversations revolved around what exactly a PLC was. The TLC had used faculty learning communities to administer professional development since the 1980s, the usual focus being a book or other reading. In a faculty learning community, there is a specific problem that is being researched and studied. Many participants revealed that the confusion concerning the PLCs came from there being two different PLC models used at the university: the Stiggins/Dufour and the Milton Cox (Miami) models. The Milton Cox (Miami) PLC, frequently referred to as a faculty learning community, is

made up of faculty members, graduate students, and university faculty that focus on either cohorts within the university or a specific topic (Cox, 2014). This model focuses on building social connections within the community (Cox, 2014). The Stiggins/Dufour model treats the whole school as the learning community and frequently focuses on interventions for individual students (DuFour, 2005). However, interviewees stated that both models focus on a community format, rather than a committee.

The executive PLC decided to create an embedded PLC model that combined aspects of the Stiggins/Dufour, the P-12 and College of Education standard PLC, and the Milton Cox (Miami), the university standard PLC, models. Each content area (mathematics, natural science, English, teacher education, social science, and later communications) had a PLC with one facilitator. These PLCs focused on a course product rather than an individual student or class. There was also a super PLC composed of all the content area facilitators and the members of the executive PLC. The facilitators shared information from the super PLC in the content area PLCs, while providing feedback to the members of the executive PLC. In this way, information moved up and down the PLCs as shown in Figure 1.

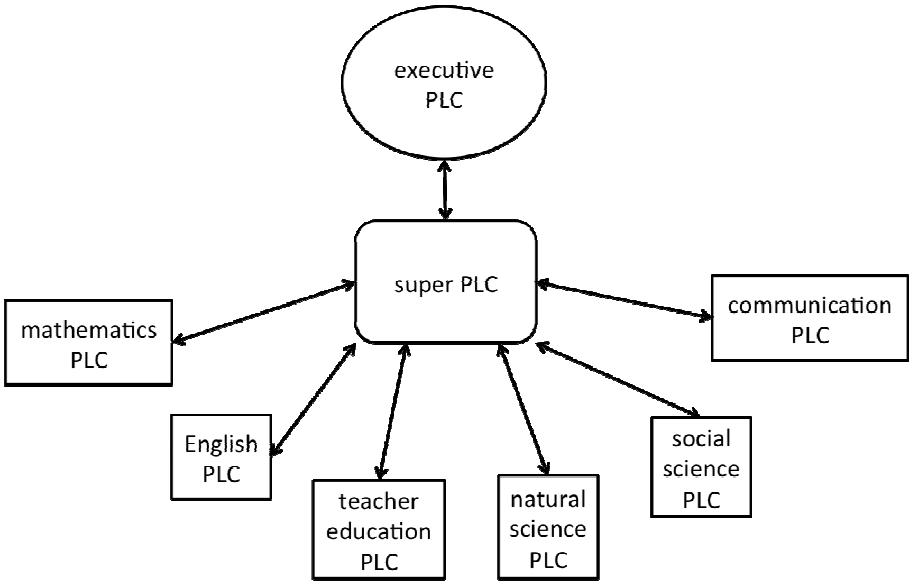

Figure 1. Professional learning community structure. This figure shows the relationship between the executive PLC, the super PLC, and the content area PLCs.

Based on previous campus initiatives and research, the members of the executive PLC felt that the key to the success of the initiative was keeping the content area facilitators engaged in the process. The super PLC would allow for all the facilitators to check in and ask questions. Each PLC met one to two times a month.

PLCs were thought to be more engaging than traditional forms of professional development and group meetings. Interviewees and focus group members described PLCs as faculty driven and viewed them as open-ended, reflective, and innovative. The facilitators guided the PLC, but decisions would be made by consensus. The executive PLC members thought the faculty would be more likely to make sense of standards and make connections with the CCSS to their courses using the embedded PLC model. This would allow the faculty to reexamine traditional assessments and instructional practices.

Vision plan. Defining the vision of the change is a requirement to defining the change (Kotter, 1996). Interviewees and focus group participants discussed many overreaching visions of the initiative: prepare the best teacher possible, make faculty understand that student retention was their responsibility, and impact pedagogy. In the content classes, that meant having faculty model best practices and good teaching strategies. To do this, the executive PLC developed two goals for the initiative: align syllabi to the common core and provide professional development for the teacher preparation and arts and sciences faculty. The syllabi would include those from general education, teacher education, and teach education content courses. Professional development would revolve around the state legislation, the CCSS and CCRs, assessment, and improving retention. These initiative goals aligned with the strategic goals of the university. A member of the executive PLC described the vision as having four key steps. The first was to create awareness of the CCSS within the faculty. Next was to have faculty ask "What does this [the CCSS] mean for my class?" Third, the faculty would consider how to assess the CCSS in their classes. Finally, the faculty would understand their own and the university's connection to K-12 education.

One member of the executive PLC described the initiative as a "multi-pronged approach" that led to "systematic change in content knowledge and approaches to teaching." However, one of the math faculty commented that they weren't sure if there was an overall goal to each of the subject areas. Other faculty felt there was an overarching vision of incorporating the standards, but that the specifics were not clear. Members of the focus group described the vision as "100% universality" with "100%

participation and penetration." When questioned about whether or not the vision changed during the initiative, no matter what the participants viewed as the vision, there was a general consensus that the vision remained the same.

In order to carry out the perceived vision of the plan, the executive PLC first needed the university faculty and staff to understand the problem. They planned to use the grant money to have large group workshops in order to recruit more participants to the initiative and begin professional development. The executive PLC wanted as many faculty as possible to understand how the CCSS impacted their students and their instruction. They assumed that faculty would own the process if they were a part of the syllabi alignment and a part of the professional development. Most faculty needed grounding in the standards, coming from departments that did not have experience working with standards or worked with very vague standards.

Alignment chart. The executive PLC wanted to avoid faculty going through the motions of aligning the syllabi without making any actual changes in the way the course was taught. They stressed that they wanted something beyond merely reviewing a syllabus and coming up with a list of standards that the syllabi aligned to. A list of standards would not have given them any relevant information. In addition, one executive PLC member wondered "Faculty must consider are the students using the standards as learners? Or as teachers?" Two members of the executive PLC created an alignment chart to assist with the process. The chart required faculty to first determine if the student was using the standard as a learner or as a teacher. Second, the faculty had to determine how the student was using the standard with one of four categories:

1. Instructors expect students to describe the standard
2. Instructors expect students to use the skills of the standard with support
3. Instructors expect students to use the skills of the standard without support
4. Instructors expect students to use the skills of the standard strategically

This chart would allow faculty to align courses with the CCSS and align student learning outcomes with the CCSS and the CCR (college and career readiness) standards. In addition, the executive PLC members thought the chart would allow faculty to analyze the "depth of student's learning and applications of each standard." The faculty who aligned the syllabi and the CCSS would be teaching those courses, therefore allowing them time to reflect on the connections between assessment, pedagogy, and the CCSS.

Communication. To share information about the initiative, e-mail and face-to-face were mainly used. Several participants stressed that informal communications were common at the university indicative of the culture of the university. E-mail was mainly used for scheduling meetings and logistics pertaining to the initiative. Participants were invited to join the content area PLCs through direct invitations in e-mail or by face-to-face. The executive PLC gathered people who they knew would participate: "the usual suspects" described one of the TLC administrators, and who would bring experience, specific skills, or a specialty to the group.

Information from the content area PLCs and the super PLC was shared on a Blackboard board website. This was also used during the implementation and later phases of the initiative. The Blackboard site served as a storage facility for meeting notes, sample syllabi, articles, and agendas. The interviewees and focus group reported

that no back and forth interactions took place on the Blackboard site such as discussion boards. The teacher education and mathematics PLCs along with English and social science used the Blackboard site frequently. The natural science and communications PLC did not post to the site. The executive committee considered developing a public website to share all the information from the initiative with other universities, but this did not come to fruition. However, they did work with the grant organization to contribute to a best practices website.

Summary. In the defining stage, the executive PLC established an embedded PLC model in order to prepare for implementation of the initiative. The PLCs would help carry out the vision of training the faculty in the CCSS and aligning course syllabi with the CCSS. To assist with course alignment, an alignment chart of four categories was created by the executive PLC. The PLCs shared this and other information through informal and formal channels of communication including Blackboard and face-to-face. This alignment chart and the embedded PLC structure helped lead the university into the next stage, implementing.

Implementing the Change

The findings suggest that this stage of the change process incorporated Rogers's (1983) redefining/restructuring stage and Kotter's (1996) empowering stage. The guiding coalition chose to use PLCs to help execute professional development and to guide the revising of the syllabi. An aggressive goal of reaching 100% of the faculty who taught general education and aligning 100% of the general education syllabi was set for this phase.

Participation in the content area PLCs was not mandatory. In that way, members self-selected themselves and guaranteed at least a minimal amount of interest. Each content area PLC was limited to 8 to 12 members. PLC members were specifically invited to participate, often from suggestions by the department chairs. These invitees were described as "the usual suspects" and "campus changemakers." The executive PLC wanted to include more faculty, but did not want the PLCs to get too unwieldy. It was suggested to create another level of PLCs. A few sub-PLCs were created, mainly springing from the English PLC and the teacher education plc, such as grading practices, assessment, grading, and rigorous reading. One interviewee described how the middle school methods instructors from all subject areas worked as a sub-PLC to review the syllabi for those courses. The mathematics PLC broke up into small groups based on courses, but did not use a PLC structure according to one interviewee.

The first large group meeting was held at the beginning of the spring semester following the grant approval. PLC facilitators and participants, members of the general education committee, department chairs, and administrators were invited. This meeting included training on the embedded PLC model (which included discussions on PLCs versus committees), training for the content area PLC facilitators, and training about the CCSS, including the history, how the CCSS affect higher education, what do instructors currently know about the CCSS, and what are the differences between the CCSS and the old state standards. Discussions centered around how the CCSS are currently used at the university, how will that change with the initiative, what support will the faculty need for understanding and using the CCSS, and how to use the alignment chart developed by

members of the executive PLC. Different content area faculty were grouped together to discuss how the standards affected content classes versus how the standards affected teacher education classes. The executive PLC wanted to ensure that the university faculty really understood what was happening in the K-12 realm. Faculty surveys and assessments provided feedback to the effectiveness of the training. A follow-up meeting was held at the end of the spring semester. The content area PLCs shared their successes and failures with each other while receiving additional training pertaining to assessment, literacy, best practices in pedagogy, and the alignment chart. A separate training for part-time faculty followed in August of the same year.

The content area PLCs were assigned the task of identifying key content courses to align with the CCSS and deconstructing the relevant standards. In addition, according to the document analysis, some content area PLCs considered which courses were dull for students and instructors and how to improve upon them and also how to make more courses project or seminar based. Because natural science and social science did not have CCSSs yet, they were supposed to align their courses with the CCSS literacy standards and the CCRs while keeping assessment in mind. In regards to professional development, discussions revolved around engaging more faculty and training them to implement the changes in syllabi. Following this meeting, six faculty leaders were sent to a training session for the Stiggins/Dufour PLC model run by the creators. The executive PLC determined that it was better for the faculty leaders to obtain training directly from the PLC model creators as opposed to receiving it as second hand information from other trainers.

The content area PLC's main goals were to engage in scholarly reading and discussion about the CCSS and align syllabi to the CCSS and CCR standards, appropriate to their content area, while also considering assessments and pedagogy that used the CCSS and appropriate instructional strategies. In addition, the PLC members were tasked with recruiting more people to the initiative. In several interviews and during the focus group, faculty described the initiative as a virus. The goal was to "infect" a lot of people, and the PLCs would determine how to find new hosts for the virus. To help with participation, stipends were provided first for participation in the PLC, then later for the alignment of syllabi, whether done individually or with a group. In addition, lunch was provided at Super PLC meetings and professional development meetings as incentive. The executive PLC members believed it was important to provide compensation for the work because many participants taught up to four separate courses each semester. This was in addition to research and service requirements. According to responses in the internal evaluation following Stage 1 of the initiative, many participants would not have participated if not for this remittance. The members of the executive PLC thought that the embedded PLC structure contributed to the high enthusiasm and high levels of participation at the beginning of the initiative, but it appears to have been a combination of factors. In reflection, many of the interviewees considered the interactions with faculty at the PLC meetings to be the most effective part of the initiative and that the PLCs helped to open lines of communication within and between departments.

At the onset of the initiative, the English, mathematics, and teacher education PLCs were tasked to revise five syllabi each, while the social science and natural science

PLCs were to revise one to two syllabi each. The content area PLCs then identified 111 key courses within the general education and content area curriculum to align over the remainder of the initiative.

Aligning the curriculum with the analysis chart was reported by both interviewees and focus group participants to be difficult and stressful. People thought it would be easy to use. It required a large of time and discussion within the content area PLCs and between colleagues. One content area PLC refused to use the chart, according to interviews and meeting notes, and did not submit any aligned syllabi. However, in other PLCs, interviewees revealed that it prompted big changes within courses.

Teacher education PLC. Many of the interviewees commented on the teacher education PLC's enthusiasm for the initiative from the beginning. Many felt that this type of alignment was a part of their professional duties. The initiative gave them the opportunity to streamline learning objectives and ensure modeling of best practices to preservice teachers into the courses.

The teacher education PLC decided to align the language arts and mathematics methods courses (elementary, middle, and high school) first, specifically the reading methods courses, due to the importance of reading in all subject areas. Most programs within the college of education stemmed from those reading courses. In addition, the PLC members focused solely on the undergraduate classes. Teacher education was one of the PLCs to do extensive work with their adjuncts as revealed through the interviews and meeting notes. Many of the interviewees stressed that the members of the teacher education PLC had many intense discussions concerning the alignment of the courses

with the CCSS. They were willing to adopt but wanted to ensure that they understood the reasons for the alignment and how they would best benefit the course. Even with the intense discussions, many of the members commented that they found the process of working with one another quite easy and agreeable. All the teacher education PLC members had been K – 12 teachers at one point and were familiar with curriculum changes and working with standards, unlike other departments. Many interviewed stated how teacher education was used to change so the initiative was easier for them to adopt.

The members compared the alignment charts of classes across the teacher education program to determine if students were reaching the fourth, the highest, category of using the standard at some point. General education courses were not expected to meet the fourth category so they were not reviewed for this aspect. At this point of the initiative, the PLC had not had the opportunity to determine what is missing from its courses.

According to interviews, the initiative alignment allowed faculty to "sit down with the standards and ask 'Which course do students do this?'" and to focus on that alignment. Work groups within the PLC collaborated to align the syllabi. The groups reviewed the student learning objectives for each course and the CCSS, made revisions, and aligned course assessments with the standards. The teacher education PLC members integrated readings about the CCSS into the methods courses in addition to student activities that incorporated the CCSS. Several interviewees spoke of increased usage of rubrics in the methods courses both for the instructors and students use. Many shared the opinion that it was a tedious process, but rewarding in the end.

The teacher education PLC was one of the few PLCs to work with individuals outside of the university. They collaborated with K-12 teachers in several sub-PLCs. In addition, two PLC members acted as liaisons with the state Department of Education, one working with mathematics and the other working with English/language arts.

Mathematics PLC. Because mathematics standards were available, the members of the mathematics PLC found it very easy to start their work unlike the natural science or social science PLC members. In the opinion of the mathematics faculty interviewed, the CCSSM focused on fewer new concepts being introduced at each grade level. The initiative gave them the "ability to sit down and really look at courses" and search for any gaps depth-wise. Many of the math classes did not require significant changes to ensure alignment with the CCSSM because of changes made in previous initiatives. In addition, members of the Mathematics department rather than members of the College of Education taught the secondary mathematics methods courses, so they had those classes to consider also.

The mathematics PLC facilitator recruited mathematics faculty who were either already involved or were interested in teacher preparation. The mathematics PLC initially thought about aligning their developmental courses, but an educational organization within the state decided to address these types of courses. However, one member stated that they reviewed the courses anyway and meeting minutes from the fall semester reveal a discussion concerning those courses. One member of the mathematics PLC remarked that many of the activities involved in the initiative were already underway in the Mathematics department, such as learning about the CCSS and their

effects on higher education. Another member commented that the CCSSM did not change what students were supposed to learn, instead it affected the mastery of the subject. The biggest difference, however, was with the introduction of the eight mathematical practices.

The members of the mathematics PLC held many discussions about modeling versus lecturing in the teacher education classes, teaching college algebra, teaching geometry with pedagogy, and the need for remediation. One interviewee commented that they sought to align the mathematics courses between and within departments based on pre-requisite courses. However, other interviewees commented that they worked individually and did not work with other departments. When questioned about integrating literacy or English standards into the mathematics curriculum, one faculty member stated that it "would have been nice, but [we] only had a limited amount of time."

The mathematics PLC had a very strong leader in the beginning that helped motivate the group. This facilitator had a connection with many members of the teacher education PLC thereby helping with communication efforts. However, the facilitator left the university part way through the initiative, which caused the group to lose some of their momentum. According to interviews, after the syllabi were revised, the mathematics PLC reached a point where they were unsure as to their next steps.

Professional development. Members of the executive PLC gave presentations and training sessions concerning the CCSS and the initiative at several local colleges and universities in addition to regional conferences. In their own words, they became the

experts and the consultants on these issues. In addition, a training module pertaining to the state legislature was developed for faculty usage.

At the university level, the executive PLC held three training sessions for initiative participants, while some content area PLCs held sessions for their departments as revealed through meeting notes. A majority of professional development activities occurred informally within the content area PLC meetings according to meeting notes and interviews. Many PLCs shared readings and resources through Blackboard or during the usual meetings.

Summary. During the implementation phase, the content area PLCs aligned syllabi using the alignment chart and both the executive PLC and the content area PLCs conducted professional development related to the initiative and the CCSS. The teacher education PLC and the mathematics PLC worked to align classes with the CCSSM and literacy standards that were relevant to preservice teachers, including elementary mathematics teacher candidates.

Refining the Change

Additional general education and content area courses were added throughout the initiative as more money became available, according to the meeting notes. At the end of the fall semester, the original grant money had been used, so an additional grant was rewarded. This additional grant went entirely to syllabi revision. In December of the first year, more courses were selected for alignment and all math education courses were aligned. These additional courses were either taken by freshmen or proving to be "major roadblock(s) for students." By the end of the second summer, 64 courses had been

aligned with the CCSS which included 100% of the general education and teacher education courses. The executive PLC redistributed money in the budget to allow for more syllabi alignment; therefore additional courses were included for revision bringing the total revised syllabi to 111.

Plans were made to set up a website with training modules, quizzes, and a certificate towards completion of professional development for faculty and adjuncts, but this plan was cancelled. The organization that provided the grant developed the modules instead. The executive PLC members instead developed a best practices module in order to share their knowledge. This was completed partway through the summer of the first year so the module money was shifted to syllabi alignment.

In the fall of the first year, a sixth content area PLC, communication, was added. The PLC included one facilitator and two faculty members. The members received training related to the alignment chart and revised two syllabi. In addition, the requirements for all content area PLC participation were revised in order to ensure that faculty were fully participating. Members were required to attend 80% of the content area PLC meetings in order to receive a stipend.

Summary. The executive PLC refined the change process in several ways during the initiative. As money became available, the initiative shifted more towards course alignment and providing stipends for that work. Plans to create a training website were dropped when the grant organization stepped in. An additional content area PLC, communication, was added while the PLC attendance requirements were changed. This refining led into the last stage, finalizing the change.

Finalizing the Change

One hundred percent of the selected syllabi were aligned during Phase I of the initiative. A summer retreat was held during the second year to allow faculty to collaborate and listen to concerns about the process.

The internal evaluation revealed that the PLC model had influenced change to many individual instructors. Many mathematics and teacher education faculty surveyed were now able to identify courses in their departments that were "critical to teacher prep." Interviews revealed that other departments felt more connected to the general education curriculum, especially teacher preparation. Fifty three percent of those surveyed were fully implementing the changes. However, 44% would only do this if it was required or seemed relevant to them, and 3% had no plans to abide by the changes. Members of the Mathematics department and the college of education stated in interviews that they were sure that the syllabi and standards were being used in their departments. Overall, the evaluation revealed that the university considered Phase I of the initiative successful based on faculty feedback. Faculty expressed a greater understanding of teacher preparation and the CCSS.

According to many of the interviews, in teacher education, this change became a department standard and was internalized in the culture. Many participants stated that they were able to make better connections between the outcomes, assessment, and instruction in their courses. They felt empowered to implement new ideas in their classrooms such as formative assessment, project based learning, small group activities, and classroom discussion. In the math methods courses, very specific student learning

objectives forced a change in the way teachers taught. In addition, only instructors who understood the changes were used in those courses according to interviews.

Most interviewees had concerns about maintaining and finalizing the change at the university. There was a "need to ensure fidelity to the syllabi and standards"; they could not simply hand a revised syllabus to an instructor and expect adherence, especially in courses were multiple instructors taught. However, there was no formal follow-up other than the evaluation to determine what changes were actually made in the classroom. Pockets of resistance still remained in several departments according to interviews, focus group participants, and meeting notes.

Interviewees and focus group participants had many suggestions as to what needed to occur for finalization. These ideas included adding more sub-PLCs, getting more buy-in from faculty, deans, the provost, and chairs, and obtaining additional funding for professional development and training, especially for the alignment chart. Compensation for faculty was mentioned in several reports and during interviews along with recognizing professional development within the tenure/promotion process as a way of sustaining the momentum of the initiative. The work of the PLCs needed to continue even after formal meetings ceased, especially if funding was not available. Several reports in the document review suggested using existing university infrastructure and systems to monitor and sustain the change, especially in monitoring the progress of preservice teachers. Faculty leaders were also deemed important to support the change and integrate it into the culture of the university. Finally, many participants thought that just having more time to "soak in all the changes" would help with the finalizing process.

Several participants expressed frustration with the current direction, or lack of direction, of the initiative. Some PLCs were still actively involved with initiative efforts, while other were unsure of the next steps. Some interviewees felt there was little closure from upper levels and that support had waned. However, they saw their work as being valuable and not just "busy work." One participant in the evaluation commented, "I feel like it would be bad practice to not implement it with my students. I feel like I would not be doing my job if I didn't." One interviewee felt that the continued hard work of the initiative participants was key to sustaining the change. For those faculty who aligned the syllabi, they reported a sense of ownership with the process, and the executive PLC felt that this ownership was key to sustaining the change. The executive PLC believed that faculty who could see the benefits in their classroom would help sustain the change and spread its use amongst other faculty.

The evaluation sought to determine if real change had occurred at the university because of the initiative. However, the question arose "What does real change mean to each person?" This proved difficult to measure because it involved a personal change that was subjective and hard to track according to one interviewee. In determining if the change was finalized, the university relied on self-reported faculty responses to a survey.

Stakeholders

Rogers (1983) divided stakeholders into innovators, early adopters, early majority, late majority, and laggards. In the initiative, the executive PLC members could be described as the innovators. They were the first university members to participate in the initiative, thereby guiding its direction and actions. The early adopters were the

facilitators of the content area PLCs: the members of the super PLC. These individuals expressed interest in the initiative and were recruited to participant in the change. The members of the executive PLC and the super PLC helped share information about the initiative as Rogers's (1983) described. The members of the content area PLCs constituted early adopters and early majority. They volunteered to participate in the initiative, but some showed some resistance initially and needed to be convinced. The laggards consisted of those that did not participate in the initiative and those that were initially a part of the content area PLCs, but then dropped out.

Obstacles

There were a number of obstacles that were encountered during the initiative. These were revealed in individual interviews, during the focus group, and through the document analysis. These included traditional obstacles described by Kotter (1996) and Rogers (1983) such as money, time, and leadership. Additional obstacles arose surrounding PLCs, standards, general education, the alignment chart, staffing, and changes in thinking.

Grant money issues. At the beginning of the initiative, there were issues with the use of the grant money. The university administration and the organization administering the grant had very specific requirements for how the money could be used. In addition, there were changes in whether or not the money could be used for stipends. The executive PLC explained that this caused a lot of initial confusion; however, they also stressed that the administration itself was not an obstacle. At this point, the grant money has been fully used. The executive PLC members hope that the content area PLCs will

continue to meet and work on assessment and pedagogy with the CCSS even without receiving stipends.

PLC issues. During the defining phase, there was confusion between the different types of PLCs based on the P-12 model, Stiggins/Dufour, and the higher education model, Milton/Cox. This was overcome through training at the first large group meeting at the beginning of the spring semester. Participants were allowed to discuss the differences between the types of PLCs and participate in training sessions. In addition, concerns about the process were brought to the super PLC.

Working with standards. Many English faculty were unaccustomed to working with standards. They typically had the flexibility to develop classes around areas of interest and expertise according to one interview. For social science and natural science, there were no content standards for those subjects so they were forced to work with literacy and/or math standards. Several interviewees brought up the issue of students themselves not being used to working with the CCSS, especially the math standards and the eight mathematical practices. The CCSS had only been in the schools for approximately 2 years at the beginning of the initiative.

According to interviews, many faculty did not understand how K – 12 standards affected what they taught. They questioned: "If students were not college ready, how does that effect what the faculty needed to do?", thereby shifting "blame" to the K-12 teachers. Not all faculty agreed that their job was to make students successful. Many faculty members outside of the college of education did not see how their classes related to teacher preparation. Faculty outside of the College of Education had little experience

with K-12 education. Many interviewees and focus group participants wished that there had been more support from the deans and chairs in order to convey the importance of the initiative and to get more buy-in from faculty. Interestingly enough, according to the internal evaluation, 12% of those surveyed believed that faculty should not have been a part of the alignment process. Additionally, some interviewees mentioned concerns about intellectual freedom in classes, but that did not appear to affect any actions in the initiative.

General education issues. Interviewees revealed that the general education committee did not feel like they were a part of the initiative even though many general education courses were going through the alignment with the CCSS. In addition, there was some confusion about the general education curriculum as related to teacher preparation. Most general education classes were taught by adjuncts thereby creating more problems with attempting to train the large number of adjuncts that rotated through the courses. While there was mention of creating new courses, specifically to replace courses that students and faculty did not like, this proved very difficult especially when it came to general education courses. The process for creating a new course and getting it approved through the committee was a long process that most PLCs were not willing to take part in. However, one PLC did create a new introduction course to help acclimate students to the culture of the state and university level reading and writing.

Alignment chart issues. The alignment chart was mentioned in the documents, interviews, and focus group as a major cause of stress and frustration in the initiative. It required a very lengthy process of review for the courses. Faculty had difficulty putting

aside enough time to use it fully. In addition, it required a lot of training in order to use it properly. One PLC expressed so much frustration with the process that they refused to use the chart and did not submit any revised syllabi.

Changes in thinking. Interviewees and focus group participants described how the initiative presented a paradigm shift for many faculty and how difficult that shift was. Interviewees recalled other faculty explaining how "I've always done it this way" and how they were only familiar with lecturing. Faculty had the tendency to teach the way they were taught. An interviewee from the College of Education pointed out that it would be difficult to teach group work through lecturing. Some faculty commented that the initiative really helped them understand how their subjects were connected to teacher preparation. One faculty member from the College of Education responded that those other faculty were "responsible for training those teachers who taught future college students", while another suggested the "need to model best practices to teacher prep students." However, there was often a difference of opinion as to the best pedagogy and teaching methods.

There was resistance to the initiative at the content level PLCs, but many interviewees suggested that this was caused by caution as opposed to opposition to the initiative. However, one PLC, while initially enthusiastic showed a great amount of resistance in the end. Members could not understand how literacy standards influenced their classes and some "refused to play along" as shown by meeting notes and interviews. Another PLC had naysayers in the beginning, but those individuals dropped out of the PLC. The resistance within that PLC prompted many discussions individually and at the

super PLC level. These discussions eventually led to support for the initiative. In another PLC, some faculty joined then dropped out, and there was minor friction caused by personality conflicts. Near the end of the first phase of the initiative, super PLC and content area PLC attendance dropped as interest waned. Because PLC participation was voluntary and stipends for participation had not been continued, many were not surprised about the decrease in momentum. One interviewee stated that having so many faculty involved in one initiative was paramount to "herding cats" in its difficulty.

Staffing issues. Turnover was another problem. One member of the executive PLC stated that the full-time faculty had a 50% turnover rate in the last 5 years. They stated that the "institutional culture doesn't get transmitted" with this type of turnover. The facilitator of the mathematics PLC and the communications PLC left partway through phase I of the initiative. Interviews revealed that the mathematics PLC spent most of the fall semester that year trying to regroup and train new PLC members. In the College of Education, turnover led to three different assessment instructors during the span of the initiative. This created another obstacle in how to train new full-time and adjunct faculty. This remained a persistent problem throughout the initiative and led to concerns about maintaining the initiative in future semesters. Some PLCs actively reached out to their adjuncts in regard to training while others depended on the adjuncts themselves seeking training for the CCSS.

Time issues. As described by Kotter and Rogers, time was an issue throughout the initiative. Many participants found it difficult to set aside the amount of time required to work with the alignment chart. Faculty members at the university did not receive

course releases for participation in the initiative. In addition to the PLC meetings and the syllabi alignment, faculty had to teach four classes, participate in committee assignments, and complete research requirements. It is interesting to note that several members of the math PLC felt that they did not know what to do and therefore had time to spare.

Leadership issues. There were a variety of issues and concerns about leadership throughout all stages of the initiative as revealed through the interviews, focus group, and internal evaluation. While most agree that the university leadership and grant organization leadership were strong at the beginning of the initiative, interest waned throughout the process. Some participants felt that money was "thrown" at them and then they were set adrift to use it as they saw fit. Turnover at the grant organization left a leadership vacuum at the highest level resulting in a loss of direction and no closure according to one interviewee. To some the university lost interest and moved onto other initiatives and concerns such as marketing, recruitment, and online classes. In addition, the state legislature has focused their efforts on other portions of education.

Summary. Numerous obstacles arose throughout the initiative. Some were easy to remedy while others continued to interfere with the process throughout. Traditional change obstacles as described by Kotter (1996) and Rogers (1983), such as time, money, and lack of interest, persisted throughout. In addition, university and department specific obstacles were dealt with by the executive PLC and the content area PLCs.

Summary

Over 300 faculty members were trained to align course content and pedagogy with the CCSS. The initiative made many faculty aware of the instructional, pedagogical,

and assessment needs of their classes. Faculty had the opportunity to delve deeply into the standards and determine how the CCSS affect many aspects of their classes. More than 100 syllabi were aligned over an 18 month period in a university wide initiative. One faculty member commented that they were "amazed at what they did with so little initial money." The change process was grouped using five descriptive categories pulled from the theories of Kotter (1996) and Rogers (1983). In Chapter 5, I use the theoretical framework of Kotter (1996) and Rogers (1983) to interpret the results and make recommendations for future research.

Chapter 5: Discussion, Conclusions, and Recommendations

Introduction

In this chapter I present a summary of the findings of the case study. I interpret the findings through the lenses of organizational development theories developed by Kotter (1996) and Rogers (1983) and empirical literature. The change process at the setting is outlined in five categories related to organizational development theory. I also discuss obstacles in the process, limitations of the study, recommendations, and implications of the study.

Overview

The CCSSM and CCSS English/Language Arts were introduced in 2010 by a joint state initiative in the United States (CCSSI, 2012a; National Education Association (NEA), 2010). While many states have adopted the standards and introduced them into their K-12 curriculum, few colleges and universities have integrated the standards into their teacher education curriculum. In this case study the integration at one teacher preparation program in a university setting (referred to as Southeastern State in this chapter) was documented through the following research question:

> What actions have a traditional elementary teacher preparation program's faculty and staff taken to incorporate the Common Core State Standards for Mathematics into their curriculum?

I collected data through interviews, a focus group, and document analysis and coded the data by five main categories based on the organizational development theories of Kotter (1996) and Rogers (1983): *establishing a basis for the change*, *defining the*

change, *implementing the change*, *refining the change*, and *finalizing the change*. The data aligned well with the first three stages of the conceptual framework. The last two stages were not as clearly defined in the data, which made it more difficult to use a priori coding. As such, the data revealed the sequential nature of change demonstrated by the framework even though not all stages were completed.

The data revealed that the program faculty took two main steps to integrate the CCSSM into their curriculum:

- Developed and delivered professional development activities to train faculty about the CCSS, the syllabi alignment process, and the state legislature.
- Aligned syllabi of general education and teacher education classes with the CCSSM

These were the two actions that were implemented and revised during the change process. Finalizing these two actions proved to be a complex task for Southeastern State.

Summary of Five Stages of Change Process at Southeastern State

Following the enactment of state legislation mandating the adoption of the CCSS, Southeastern State selected two individuals from the TLC to lead the initiative. They gathered two more university faculty members to form an executive PLC. This PLC established an embedded PLC structure consisting of content area PLCs and a super PLC in order to implement the initiative. The content area PLCs were led by facilitators who were also a part of the super PLC. Facilitators for the content area PLCs were recruited and trained. Members of the executive PLC developed an alignment chart in order to ease the integration of the CCSS into course syllabi. Large group training sessions were

held in January and May of the first year of the initiative in order to provide training to facilitators and other interested faculty in regard to the state legislature, the CCSS, the alignment chart, and the PLC structure.

The content area PLCs met and created lists of classes that would be aligned with the CCSS. These classes included general education and teacher preparation classes. Members of the content area PLCs used the alignment chart to align the syllabi with the standards over several months. More classes were added to the lists as more funding was obtained and as other funds shifted. Many departments held their own professional development sessions to help full-time and adjunct faculty understand the curriculum changes.

Interpretation of the Findings

In Chapter 2, research was reviewed pertaining to the CCSSM and previous state standards, underprepared teachers and teacher candidates, mandated education reform, states' current actions, and organizational change including the five stages of change. In this section I describe how the findings of the case study support or do not support the previous research and organize the interpretation according to the relevant sections of Chapter 2.

Underprepared Teachers and Teacher Candidates

Heck et al. (2011) and Wilson et al. (2011) both found that many elementary mathematics teacher education programs were not aligned to the CCSSM. Prior to the initiative the curriculum at Southeastern State was not aligned to the standards. The

university was one of the first teacher preparation programs in the United States to develop a plan to adopt the standards.

Imig et al. (2011) and the AFT Teacher Preparation Task Force (2012) noted the presence of outside forces, such as a state legislature in the instance of Southeastern State, applying pressure to programs in order to produce more effective teachers. In addition, many of the faculty interviewed felt that their job as educators was to produce the best teacher possible, so they did not take issue with the mandate to incorporate the standards. Others noted that a majority of their students required remedial education in math, English, or both when entering the university. Working with a student population that entered underprepared added additional issues to the program. If the CCSSM were more in-depth and difficult than the previous standards, then teacher candidates would be even more underprepared in some cases.

I compared the program requirements and course descriptions for the elementary teacher education program to the five benchmark classes that Schmidt et al. (2011) listed in their 2011 study of international teacher education programs. These courses were university level number theory, university level probability, math instruction, measurement, and numbers. As mentioned previously, the university requires a college algebra course, three levels of mathematics for elementary school teachers, and an elementary math methods course. In addition, students have the option of one mathematics elective: problem solving, models, statistical reasoning, and applied statistics. It appears that the university offers four of those five subjects as requirements in their program and an elective to cover the remaining course (probability is offered in

the modeling course). Basic number theory was covered in the college algebra course, measurement and numbers are covered in the mathematics for elementary school teachers courses, and methods is covered in the math methods course.

When compared to Banilower et al.'s (2013) research on the National Council of Teachers of Mathematics' five core classes (number and operations, algebra, geometry, probability, and statistics), the teacher education program offered classes in all those areas, but the probability and statistics courses were electives. Statistical data were covered in one of the mathematics for elementary teacher courses. Per Greenberg et al.'s (2013a) research, the university performed better than 30% of the programs by offering math content classes. While I had no way of determining the depth versus breadth of these courses, it appeared that the teacher preparation program at the case study school offered a broad range of mathematics classes to its elementary teacher candidates.

Several studies of elementary mathematics teacher education programs showed that current mathematics courses were not sufficiently difficult enough for the new common core standards (Greenberg et al., 2013a, 2013b; Schmidt et al., 2011; Schmidt et al., 2013). Faculty interviewed felt that most of their mathematics classes required little to no change in order to incorporate the standards. One interviewee suggested that Southeastern State had already been moving towards "toughening up" their program through previous initiatives.

Mandated Education Reform

The change at Southeastern State was prompted by state legislature regarding national standards. The change in the school of pharmacy in Farris et al.'s (2009) study

also initiated curricular change because of a change in national standards, but it was not mandated by a state government. Many other schools revised their curriculum due to internal forces (Oliver & Hyun, 2011; Merton & Clark, 2009).

Farris et al.'s (2009) and Merton and Clark's (2009) studies both stressed the importance of taking culture into account during the change force as a factor to success. At Southeastern State, the leaders elected to use PLCs to facilitate the change because the PLCs had been successfully used within the university for several years. One administrator stated that the university had "a tradition of face to face communication" and that the reason they adopted the PLC model was because they "had introduced the notion to the university. So the university had a professional learning community culture that" they "could just tap right, tap right in. They were used to getting together and solving problems in a group, in a collaborative setting." The PLCs worked well within culture of the university. Other universities considering incorporating the standards into their teacher education or general education curriculum might want to consider using PLCs in their organizational change process.

States' Current Actions

In the realm of higher education, each state that adopted the CCSS is able to adopt the CCSS in their own way. In the case of Southeastern's state, a law was passed to enforce adoption of the standards and to integrate them into teacher preparation programs among other things. The state provided initial funding and support to begin the integration. Each university in the state that accepted the funding was tasked with developing a plan for implementation. Southeastern State developed and successfully

implemented a two-prong plan of aligning course syllabi and implementing professional development training through the use of PLCs and a syllabi/CCSS alignment chart. As Kober and Rentner's (2011) and McMurrer and Frizzell's (2013) research showed, many state education agencies and superintendents were not aware of the actions of higher education in regard to the integration of the CCSS. Southeastern State and its state appeared to have a more structured and informed approach to the adoption and implementation of the standards.

Organizational Change

I combined Kotter's (1996) and Rogers's (1983) stages of organizational change into five steps. This section interprets the data collected from the case study through the lens of the five steps.

Establishing a basis for the change. An analysis of the interviews, the focus group, and documents illustrated Rogers's agenda setting stage and Kotter's urgency and coalition stage, which I had combined into an initial stage called *establishing a basis for the change*. During this time, which occurred prior to the first spring semester of the initiative, urgency was established through the state legislature. Kotter (1996) stated that leaders must create urgency in order to overcome complacency within an organization. Because the initiative was a mandatory change, this change did not initially seek to overcome complacency; however, complacency did become an obstacle in the change. Rogers (1983) stressed the need to share the relative advantage of the innovation, the CCSS in this case, with potential participants. The sharing of the relative advantage appeared to occur during the professional development that occurred in the third stage,

implementing change, rather than this first stage because professional development was one of the two goals of the initiative. It might have helped to gather more people to the initiative as a means of outreach regarding the CCSS before the implementation phase, but that would probably have been difficult logistically. Holding off this outreach until the professional development large group meeting in January appeared to be a good choice for Southeastern State.

The university created a guiding coalition in the form of the executive PLC. This guiding coalition created the vision statement for the initiative and guided the change process in an administration capability.

Defining the change. Once the guiding coalition was formed, the leaders sought to define the process and goals of the initiative. The executive PLC created a vision statement related to teacher training that helped to guide the initiative. They communicated the vision informally through face-to-face interactions, and formally through channels of communication such as Blackboard and e-mail.

In addition to sharing the relative advantage, Rogers (1983) recommended discussing trialability, observability, compatibility, and complexity of the innovation, the CCSS in this case, with potential participants. Participants needed the opportunity to resolve each of these innovation qualities within their own experiences in order to adopt them.

Trialability. Due to the nature of the legislature and the initiative, trying the standards out in a classroom before implementation was not a viable option. The syllabi

were revised and used in the classroom within the year. The implementation phase was the trial.

Observability. The standards had recently been integrated into the K-12 curriculum and very few universities or teacher preparation programs had begun utilizing them. As such, there was no way for the participants to observe the CCSS in the post-secondary classroom. In fact, the university became the forerunner in integrating the CCSS into their curriculum.

Compatibility. Members of the Mathematics department and College of Education had experience working with standards in addition to many of the College of Education instructors being former K-12 teachers. However, in the remaining departments, many faculty members had never used standards in their classrooms. These faculty members had difficulties relating their work to the CCSS. The executive PLC attempted to alleviate concerns through professional development activities, pushback still existed.

Complexity. The CCSS proved difficult for some departments to interpret and use. The executive PLC held professional development sessions in an effort to provide training and clarity to the standards. In addition, an alignment chart was developed to help with aligning the standards and the class syllabi. However, many participants in the initiative still had difficulty with the process and one department refused to participate in aligning syllabi.

Implementing and Refining the Change

The Implementing the Change category combined Kotter's (1996) empowering step and Rogers's (1983) redefining/restructuring step. The syllabi alignment and course

changes empowered faculty to implement new ideas in their classrooms such as formative assessment, project based learning, small group activities, and classroom discussion. The embedded PLC structure also empowered participants by training them as leaders and allowing them to share their knowledge with other participants. Opinion leaders were recruited to the super PLC and the content area PLCs lining up with Rogers's (1983) suggestion.

The original grant was so broad that there was a general fluidity and flexibility to the initiative. As such, parts of the implementing and refining stages overlapped or merged together. As soon as implementation began, the executive committee began refining the change which Kotter and Rogers described as clarifying, generating, and consolidating the change. There was no clear delineation between these two categories. Many changes were made "on the fly" and sometimes, unfortunately, resulted in confusion for the members of the super PLC and the content area PLCs according to interviews and the results of the document review.

Finalizing the Change

In this final category, the change must be routinized and anchored within the culture of the organization (Kotter, 1996; Rogers, 1983). Most interviewees agreed that this was an area of weakness in the initiative. There were many suggestions as to how to finalize the initiative, but few measures were taken by the PLCs mainly due to lack of funds and faculty turnover.

To summarize the interpretation of the findings, while many parts of the initiative corresponded to the change processes described by Rogers (1983) and Kotter (1996),

there were some exceptions. The first two of the five changes were quite evident. The *implementing the change* and the *refining the change* stages combined into one hybrid step, while the final stage, *finalizing the change*, failed to be fully implemented due to lack of funding and support.

Limitations of the Study

The transferability of the results of this case study to different programs could be limited by factors such as student demographics and teacher certification requirements. This university traditionally serves first-generation college students in the mid-South region of the United States. Many of these students are required to take at least one English or mathematics remedial course. Teacher preparation programs with different student populations may require different avenues to incorporating the CCSS into their curriculum other than syllabi revisions using an alignment chart. Additionally nontraditional teacher preparation programs, such as online or alternate route, may require different approaches to incorporating the CCSS. Because teacher certification requirements vary from state to state in the United States, the approach used may not be appropriate in certain areas of the country.

This organizational change required a lot of hands-on and group work among faculty. The type of change revealed in the study would probably work best with smaller campuses where faculty were used to using PLCs or other working groups. In addition, faculty would need to be familiar with a wide variety of classes or at least have the opportunity to become familiar with them in a somewhat short period of time.

By the time of the interviews, one of the two main goals of the initiative had been fulfilled: revising general education and teacher education syllabi so they were aligned with the CCSS in mathematics and English/language arts. In regard to the professional development aspect, most of the full-time faculty had participated in at least two sessions dedicated to the syllabi changes. Due to the high rate of turnover at the university, many new faculty and adjuncts will still require training. Additionally Stage 2 and Stage 3 of the initiative are ongoing, so those objectives and results were not included in this case study.

The conceptual framework used in this case study would be appropriate to use in other settings. Both Rogers's and Kotter's theories have been applied separately to settings found in education, the military, and health as shown in Chapter 2. Combining the overlapping parts of the two theories and incorporating Rogers's analysis of stakeholders provides for a thorough framework of analysis.

Recommendations

Based on the results of this case study, I developed four recommendations for future research. These involve use of syllabi and CCSS in the classroom, preservice teachers, assessment, and other standards.

Some of the participants in the case study expressed concerns that the changes in the syllabi and the standards were not being used in the classrooms. The internal evaluation found that almost half of those faculty surveyed were considering, despite the syllabi revisions, partial or no implementation of the changes. A study would be useful to determine how the standards are being used in the classroom and at what level the

implementation is. In addition, this would help determine the level of finalization, as mentioned in the final stage of the conceptual framework, for this case study. Many participants suggested ways of finalizing the initiative, but those ideas had not been enacted as of the closing of my case study.

Another possible study would be to track current preservice teachers and continue to follow them into the teaching profession in order to determine the affect or effectiveness of the changes in the curriculum. If one of the university's goals was to prepare better teachers, then it is important to follow-up with the product of the initiative, teachers. If preservice teachers are struggling in certain classes or are not performing adequately out in the field, then changes would need to be made to the curriculum again.

Many of the participants in the case study discussed assessment and its connection with the CCSS. Stage 2 of the initiative included learning about assessment while Stage 3 included learning about advanced assessment techniques and using those tools and their results in the classroom (see Table 2). Future research could examine how the assessments are used to continue to fine tune the syllabi alignment with the CCSS.

This case study focused on alignment with the CCSS, specifically mathematics. Currently, there are common core standards for mathematics and English language arts and literacy. Next generation science standards have been released through the efforts of a 26 state team (Achieve, 2014). Next generation arts standards were completed in June 2014 (National Art Education Association, 2014). Incorporating these new standards will most likely have different requirements and challenges than aligning with mathematics. While the methods used in this university's initiative to incorporate the mathematics

standards could be transferred to other programs, incorporation of different subject area standards may require different approaches. This would be another focus of future research.

Implications for Social Change

The movement towards national curriculum standards is a contentious issue and does not appear to be leaving the spotlight of the national discussion any time soon. Even the few states that have dropped the common core have decided to adopt new standards, created in-state, for mathematics and English (Associated Press, 2014). As new standards are adopted, teacher preparation programs need to be prepared to integrate those standard into their curriculums. This case study could be used to develop an organizational change plan for such an endeavor on campuses. In addition, it could inform adopters of possible obstacles that they could face in implementation. Additionally, reading about the change process could prompt discussions at universities and colleges that had not considered integrating standards into their curriculum.

Integrating the CCSSM into the curriculum of a teacher education program could produce better-prepared teachers for the classroom. A majority of the states are still using the CCSS in their state curricula, so teachers need to be prepared to teach the standards. In addition, assessments in those states will be aligned to the standards whether the assessments are state-created or provided by the Partnership for Assessment of Readiness for College and Careers (PARCC) or Smarter Balanced Assessment Consortium (SBAC) (Partnership for Assessment of Readiness for College and Careers, 2014; Smarter Balanced Assessment Consortium, 2014). Teacher candidates need to be

able to understand the assessments in order to help their students be successful. Students in those classrooms will have the advantage of better-prepared teachers.

Conclusion

The CCSS represent a new innovation in higher education. The university at the center of this case study integrated this innovation into its teacher preparation curriculum through an organizational change process. While the actions taken may have demonstrated adherence to the initial stages suggested by Kotter (1996) and Rogers (1983), the latter stages of refining and finalizing failed to materialize clearly. As such, it appears that the change might not have been fully integrated into the culture of the university based on the results of the university-conducted evaluation. Other programs that might be interested in incorporating innovations into their curriculum must be aware of the importance of the final two stages of organizational change. Without full integration into the culture, the innovation can fall to the wayside (Kotter, 1996; Rogers, 1983). It is important to finalize the change in the culture so the organization does not revert back to its previous unchanged state.

The university in this case study is somewhat unique due to the nature of the state legislature and the leaders of the initiative. Because the change occurred only a few years ago from this case study, it is too soon to determine if the program will revert to its previous state. In addition, the leaders of the initiative are leaders on campus and have influence within their departments. I believe that the motivation and efforts of these individuals are helping to perpetuate and maintain the change. However, if these leaders were to leave, and if the change were not solidified within the culture, I would have

concerns about the staying power of the change. Conversely, the impetus for this initiative was a state legislated mandate. This legislature creates an external pressure to maintain the change no matter who leaves the school that other programs might not have to deal with. However, the overall change experience of this teacher education program revealed much about the organizational development process and could provide guidance for other such programs.

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Appendix A: Interview Guide

Good morning, I'm Grace Cook from Walden University. Thank you for agreeing to meet with me today. As I mentioned before, I am interested in schools that have instituted organizational change due to the integration of the Common Core State Standards into their College of Education elementary mathematics curriculum. [Insert University Name] has released a quantity of information related to the [Insert Initiative Name] so I am interested in hearing about your role and experiences during the organizational change.

1. Describe how [Insert Initiative Name] came about.
    a. What was the overall vision of the initiative at the beginning?
    b. From your perspective, how would you describe the initiative, looking back and at the present efforts?
    c. Did the overall vision change during the process? If so, how?
2. Describe your role in the process.
    a. Describe the department's role.
    b. Did your campus role change after the initiative was in place? If so, how?
    c. Are you a part of any working committees? If so, which ones and what is your role?
3. Describe your experiences working with others during the planning and implementation of the initiative.
    a. Sometimes leaders are assigned in projects. We typically refer to them as formal leaders, whereas informal leaders are those who take on leadership roles informally or naturally during a project. Who were the formal leaders in the initiative?
        i. What was their role in the process?
        ii. What type of interactions did you have with them?
    b. Did any informal leaders emerge during the process?
        i. What was their role in the process?
        ii. What type of interactions did you have with them?
    c. Did any community partners, perhaps different departments or a group from outside the university, work with you during the initiative? If so, who were they?
        i. What were their roles?
        ii. How did they become a part of the process?
    d. Who did you perceive was most willing to adopt the initiative and why?
    e. Who did you perceive showed the most resistance to adopting the initiative and why?
        i. If they adopted, in your perception how were they persuaded to change their views?
4. What were the formal channels for sharing information during the initiative? What types of information was shared in this way?

   a. What were the informal information channels? What types of information was shared in this way?
   b. How was it determined how information would be shared? For example, was priority information always shared through a certain channel?
5. Describe the obstacles, big or small, that you faced during the initiative.
   a. How did you approach them?
   b. Are they still present and if so, how are you dealing them?
6. What do you perceive is the most critical part of the initiative for the university and what is the most critical part for you?
   a. What do you perceive as most critical to sustaining the change?
7. Describe what are or have been the most successful and least successful aspects of the initiative?
8. What, in your view, was missing from the initiative?
9. Is there anything else you would like to tell me?

Appendix B: Focus Group Guide

Focus Group Guide

Good morning, I'm Grace Cook from Walden University. Thank you for agreeing to participate in this focus group today. As I mentioned before, I am interested in schools that have instituted organizational change due to the integration of the Common Core State Standards into their College of Education elementary mathematics curriculum. [Insert University Name] has released a quantity of information related to the [Insert Initiative Name] so I am interested in hearing about the experiences with organizational change.

I'd like for each of you to introduce yourself, describe your role at [Insert University Name], and describe your role in the [Insert Plan Name].

I have interviewed several participants in the [Insert Initiative Name]. I would like to hear your reactions and thoughts concerning various actions in the initiative that I have noticed through my preliminary analysis of the data. I have also discovered some areas that participants appeared to disagree about and would like your feedback on these. I welcome any reflections you've had since we talked in the interview. I am also eager to hear any responses you have to what you hear your colleagues share in this focus group.

Sample types of questions: *[specific questions will be developed after a preliminary review of the individual interviews]*

1. Based on the interviews, I've developed the following timeline of events and actions regarding the initiative.
    a. Does this timeline appear accurate?
    b. Are there any events or actions that should be added?
2. Based on the interviews, I've developed the following list of informal and formal leaders.
    a. Does this list appear accurate?
    b. Would you add anyone else to the list?
3. Based on the interviews, I've developed the following list of informal and formal lines of communications.
    a. Does this list appear accurate?
    b. Would you add any additional lines of communication?
    c. From this list and as a group, which three lines would you consider most useful for communicating?
    d. Which were least useful?
4. Based on the interviews, I've developed the following list of obstacles.
    a. Does this list appear accurate?
    b. Would you add any additional obstacles?

   c. From this list and as a group, which three obstacles would you rank as the most difficult to overcome?
   d. Which were the easiest?
5. Is there anything else you would like to tell me regarding the initiative?

Appendix C: Consent Form

You are invited to take part in a research study of [Insert Initiative Name]. The researcher is inviting individuals involved in the [Insert Initiative Name] to be in the study. This form is part of a process called "informed consent" to allow you to understand this study before deciding whether to take part.

This study is being conducted by a researcher named Grace Cook, who is a doctoral student at Walden University.

Background Information:
The purpose of this study is to understand the change process that occurred when the [Insert Initiative Name] was implemented.

Procedures:
If you agree to be in this study, you will be asked to:

- ____Participate in a maximum 1 hour long face-to-face interview.
- ____Participate in a 1 to 1.5 hour long focus group.

Here are the main questions:

1. Describe how the [Insert Initiative Name] came about.
2. Describe your role in the process.
3. Describe your experiences working with others during the planning and implementation of the initiative?
4. What were the formal channels for sharing information during the initiative?
5. Describe the obstacles, big or small, that you faced during the initiative?
6. What do you perceive is the most critical part of the initiative for the university and what is the most critical part for you?
7. Describe what are or have been the most successful and least successful aspects of the initiative?
8. What, in your view, was missing from the initiative?

The researcher may contact you after the interview and the focus group for clarification to information you shared. You will be allowed to review the typed transcript of your interview through email and contribute any feedback you may have.

Voluntary Nature of the Study:

This study is voluntary. Everyone will respect your decision of whether or not you choose to be in the study. No one at Walden University or [Insert School Name] will treat you differently if you decide not to be in the study. If you decide to join the study now, you can still change your mind later. You may stop at any time.

Risks and Benefits of Being in the Study:
Being in this type of study involves some risk of the minor discomforts that can be encountered in daily life, such as being uncomfortable with a question. Being in this study would not pose risk to your safety or wellbeing.

Discussions that take place during the study could help the faculty and staff of the teacher preparation program to determine if additional changes are required in the program structure.

Payment:
There is no payment for participating in the study.

Privacy:
Any information you provide will be kept confidential. Audio recording will be used for the interviews and will be transcribed by a trusted resource who will also sign a confidentiality agreement. The researcher will not use your personal information for any purposes outside of this research project. Also, the researcher will not include your name or anything else that could identify you in the study reports. Data will be kept secure by being kept on a password protected computer and in a password protected cloud account. Data will be kept for a period of at least 5 years, as required by the university.

Contacts and Questions:
You may ask any questions you have now. Or if you have questions later, you may contact the researcher via email at Grace.Cook@waldenu.edu. If you want to talk privately about your rights as a participant, you can call Dr. Leilani Endicott. She is the Walden University representative who can discuss this with you. Her phone number is 612-312-1210. Walden University's approval number for this study is **02-26-14-0106126** and it expires on **February 15, 2015.**

The researcher will give you a copy of this form to keep.

Statement of Consent:

I have read the above information and I feel I understand the study well enough to make a decision about my involvement. By replying to this email with the words "I consent", I am agreeing to participate.

Curriculum Vitae

Education

Walden University **2005 – 2014**
Ph.D.: General Education GPA: 4.0
Dissertation Title: A Case Study of Curriculum Based Organizational Change in an Elementary Teacher Preparation Program

New Pathways to Teaching Program **2003 – 2004**
New Jersey City University, 15 graduate credits

Stevens Institute of Technology **1996 – 2001**
Masters of Science: Applied Mathematics, Graduate Certificate: Statistics
Bachelors of Science: Applied Mathematics (with honors), Minor: Literature

Licensure

Standard Certificate for New Jersey, Teacher of Mathematics
Highly Qualified Teacher, New Jersey Department of Education
Advanced Professional Certificate for Maryland, Mathematics 7-12 Expires: 12/31/17

Experience

New York City Department of Education **New York City, NY**
Math Content Reviewer 2/2014 – present

Bloomfield College **Bloomfield, NJ**
Assistant Professor of Mathematics 7/2014 – present
Visiting Assistant Professor of Mathematics 8/2013 – 7/2014
Freshman Mathematics Program Coordinator 8/2013 – present
Consultant for Summer Math Program 3/2013 – 8/2013

West Morris Central High School **Chester, NJ**
Mathematics Homebound Instructor 2/2013 – present

Homework Helpers of Long Valley **Long Valley, NJ**
Mathematics and Science Tutor 12/2012 – present

Educational Testing Service **Princeton, NJ**
Outside Item Writer 1/2013 – present
Assessment Specialist, I/II 9/2010 – 1/2013

Berkeley College **Woodland Park, NJ**
Mathematics Adjunct Faculty 9/2010 – 12/2010
Math Coordinator for Academic Support Center 5/2008 – 9/2010

The Princeton Review **Madison, NJ**
PSAT/SAT Teacher and Tutor 6/2007 – 9/2010

Centenary College **Hackettstown, NJ**
Mathematics Adjunct Faculty 9/2007 – 5/2008, 8/2011 – 12/2011

Boonton High School **Boonton, NJ**
Mathematics Teacher 8/2004 – 6/2007

Kittatinny Regional High School **Newton, NJ**
Mathematics Teacher 9/2003 – 6/2004

Kumon Math and Reading Center **Hasbrouck Heights & Cliffside Park, NJ**
Mathematics Tutoring Specialist, Student Assessment Assistant 2/2003 – 8/2003

Hoboken Board of Education **Hoboken, NJ**
Substitute Teacher, Certified 3/2003 – 8/2003