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# Teacher and Administrator Perceptions of Administrative Responsibilities for Implementing the Jacobs Model of Curriculum Mapping

Valerie Lyle

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Valerie Lyle  
*Walden University*

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Valerie Lyle

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Walden University  
2010

Abstract

Teacher and Administrator Perceptions of Administrative Responsibilities for

Implementing the Jacobs Model of Curriculum Mapping

by

Valerie Lyle

M.A., Southern Illinois University, Carbondale, 1983

B.S., Southern Illinois University, Edwardsville, 1976

Doctoral Study Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Education

Teacher Leadership

Walden University

December 2010

## Abstract

The problem that compelled this study is one faced by district across the nation, which is the alignment of district curriculum with state standards and assessments. The Jacobs model of curriculum mapping was developed to address these alignment issues. The Jacobs model represents a large scale change initiative, and large scale reforms may be unsustainable if leaders misunderstand the magnitude of change and its impact on leadership. The purpose of this multiple case study was to explore administrator and teacher perceptions of administrative responsibilities for implementing the Jacobs model of curriculum mapping in a rural Midwestern school and how administrative leadership impacted teacher perceptions of sustainability. The conceptual framework for this study was based on change theories in relation to the work of Fullan and Senge. Data were collected from multiple sources, including interviews with 25 teachers at the elementary, middle, and high school levels and 5 administrators at all instructional levels. Archival documents and artifacts from 5 school years were also collected. Single case data was inductively analyzed and coded into 3 frames of analysis, and a cross case analysis of patterns, relationships, and themes was conducted. The findings of this study identified leadership challenges that impeded sustainability. Results suggest that for large scale reform to be successful, leaders need to identify and address potential change barriers and assume non-traditional leadership roles and responsibilities. Implications for positive social change include raised teacher awareness about the need for curricular alignment with state standards and the importance of horizontal, vertical, and lateral collaboration to address curricular gaps and redundancies in order to improve student learning.



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## Dedication

I would like to dedicate this study to Dr. Anthony Chan. Dr. Chan began this doctoral process with me and guided me through until the final chapters of my dissertation. Due to illness, Dr. Chan had to resign as my doctoral chair and from my doctoral committee. However, I am very cognizant and appreciative of the support, guidance, and encouragement he provided me. He challenged my thought processes and in doing so sparked personal insights and fostered my intellectual growth. I consider myself very fortunate and privileged to have had the opportunity to work under his guidance. I am grateful to him for helping me reach this point in my academic career.

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I am extremely grateful to the administrators and teachers of Wards Mill School District #4 for being willing to participate in my study. I am deeply appreciative of the candor with which you responded to my inquiries. I am hopeful that the information we have provided about the challenges we faced and the lessons we learned during the implementation process will be beneficial to others. I would like to thank Heidi Hayes Jacobs for suggesting a leadership study as the focus of my dissertation.

I would like to thank the members of my doctoral committee for their support and guidance. I would especially like to thank my chair, Dr. Deanna Boddie. I can not begin to adequately express the deep gratitude that I have for all you have done to help me complete this doctoral journey. It has been a pleasure to learn from you.

## Table of Contents

List of Tables .....	v
Section 1: Introduction to the Study .....	1
Introduction.....	1
Background to the Problem .....	3
Problem Statement.....	14
Purpose of the Study.....	15
Research Questions.....	15
Nature of the Study.....	16
Conceptual Framework.....	19
Operational Definitions.....	21
Assumptions.....	25
Scope of the Study .....	27
Delimitations.....	27
Limitations .....	28
Significance of the Study.....	29
Summary.....	30
Section 2: Literature Review .....	34
Introduction.....	34
Inclusion Criteria .....	37
Exclusion Criteria .....	38
Factors Influencing Educational Reform.....	38

Changing Purpose of Education.....	42
Change in Leadership Theories .....	44
Change Theory.....	46
Magnitude of Change.....	49
Leadership Roles during the Change Process.....	52
Jacobs Model of Curriculum Mapping .....	61
Background and Potential.....	61
Leadership Challenges .....	66
Review of Similar and Differing Methodologies.....	69
Summary of Critical Curriculum Mapping Studies .....	74
Summary .....	77
Section 3: Research Method .....	80
Introduction.....	80
Restatement of Research Questions.....	81
Research Design.....	82
Researcher’s Role .....	85
Data Collection Instruments and Plan.....	87
Unobtrusive Data .....	87
Interviews.....	93
Context of the Study .....	98
Setting .....	93

Participants.....	99
Data Analysis Plan.....	102
Interview Data Files.....	103
Unobtrusive Data Analysis.....	108
Inductive Analysis.....	109
Theoretical Proposition.....	111
Validity and Reliability.....	112
Ethical Considerations.....	114
Summary.....	117
Section 4: Results.....	118
Introduction.....	118
Review of Data Collection.....	118
Data Organization.....	125
Level 1 Data Analysis: Emerging Understandings.....	130
Level 2 Data Analysis: Single Case Findings.....	137
Administrative Case.....	137
Summary of Findings for Administrative Case.....	165
Teacher Cases.....	167
High School Teacher Case.....	168
Summary of Findings for High School Teachers Case.....	191
Junior High School Teachers Case.....	196
Summary of Findings for Junior High School Teachers Case.....	217

Elementary School Teachers Case.....	221
Summary of Findings for Elementary School Teachers Case .....	245
Level 2: Cross-Case Analysis .....	249
Cross-Case Analysis Findings .....	252
Theoretical Proposition.....	256
Discrepant Data.....	261
Evidence of Quality .....	263
Conclusion .....	267
Section 5: Discussion, Conclusions, and Recommendations.....	268
Overview.....	268
Interpretation of Findings .....	272
Implications for Social Change.....	281
Recommendations for Action .....	283
Recommendations for Further Study .....	286
Reflection on Researcher’s Experience .....	287
Conclusion .....	290
References.....	292
Appendix A: Forms.....	309
Appendix B Audit Trail .....	315
Appendix C: Sample Unobtrusive Document and Memorable Quotes File.....	318
Appendix D: Coding.....	320
Curriculum Vitae .....	323

## List of Tables

Table 1. <i>Administrative Perspectives of Factors Leading to Initiative Buy-in</i> .....	139
Table 2. <i>Administrative Perspectives of Leadership Attributes Inhibiting Buy-in</i> .....	142
Table 3. <i>Administrative Perspectives of Leadership Attributes to Promote Buy-in</i> .....	143
Table 4. <i>High School Perspectives of Factors Leading to Initiative Buy-in</i> .....	169
Table 5. <i>High School Perspectives of Leadership Attributes Inhibiting Buy-in</i> .....	171
Table 6. <i>High School Perspective of Leadership Attributes to Promote Buy-in</i> .....	172
Table 7. <i>High School Trends in Mapping Perceptions</i> .....	175
Table 8. <i>High School Trends in Maps Housed in Internet-based System</i> .....	184
Table 9. <i>Junior High Perspectives of Factors Leading to Initiative Buy-in</i> .....	197
Table 10. <i>Junior High Perspectives of Leadership Attributes Inhibiting Buy-in</i> .....	199
Table 11. <i>Junior High Perspectives of Leadership Attributes to Promote Buy-in</i> .....	200
Table 12. <i>Junior High Trends in Mapping Perceptions</i> .....	206
Table 13. <i>2006-2007 Professional Development Training for Junior High Teachers</i> ...	211
Table 14. <i>Junior High Maps Housed in Internet-based System</i> .....	213
Table 15. <i>Elementary Perspectives of Factors Leading to Initiative Buy-in</i> .....	222
Table 16. <i>Elementary Perspectives of Leadership Attributes Inhibiting Buy-in</i> .....	226
Table 17. <i>Elementary Perspectives of Leadership Attributes to Promote Buy-in</i> .....	227
Table 18. <i>Elementary Trends in Mapping Perceptions</i> .....	237
Table 19. <i>Instructional Level Sustainability Perceptions</i> .....	260

## Section 1: Introduction to the Study

### **Introduction**

Sanctions established for Title I schools in the No Child Left Behind (NCLB) Act of 2001 have resulted in an increased interest in strategies to align curriculum with assessment standards and learning targets, which students must master in order to achieve Adequate Yearly Progress (AYP) (Barton, 2006; Guilfoyle, 2006). Although the NCLB Act stipulates that all schools are expected to have 100% of their students achieve proficiency targets in English Language Arts and Math by 2013-2014, only Title I schools are subject to federal NCLB sanctions. Title I schools are schools that receive federal funding and have large percentages of children from low-income families. State sanctions may also be imposed upon districts that do not meet AYP targets. Sanctions and corrective actions increase in severity if AYP targets have not been met for three or more years (“Frequently Asked,” 2007; Guilfoyle, 2006).

The Jacobs model of curriculum mapping provides a framework for aligning curriculum to standards that states use to determine if schools have met AYP proficiency targets. The Jacobs model also provides a framework for social change and the establishment of district-wide professional learning communities in which teachers and administrators collaborate to identify and problem-solve curricular issues inhibiting student achievement (Hale, 2008; Jacobs, 1997, 2004; O’Neil, 2004; Truesdale, Thompson, & Lucas, 2004; Udelhofen, 2005).

Unlike traditional curriculum guides, which represent the intended or specified curriculum, the Jacobs model includes monthly maps generated by each teacher.

Monthly maps developed by individual teachers are called Diary Maps. These maps represent the actual or implemented content and skills that students experience during a given month. Diary Maps also indicate how the content and skills were assessed and aligned with standards upon which AYP is measured (Hale, 2008; Jacobs, 1997; Udelhofen, 2005).

Marzano (2003) contended that the discrepancies between the intended and implemented curriculum are problematic factors that impede student achievement. Articulation based on the implemented curriculum, which is documented in the Jacobs model of mapping, provides a more cogent means of assuring that students' transitions among the grade levels is not wrought with unintentional gaps and redundancies in content, knowledge, or skills. Documenting the implemented curriculum also provides a more reliable means of monitoring the alignment of the curriculum with standards students must master to achieve proficiency targets (Hale, 2008; Jacobs, 1997; Udelhofen, 2005).

Jacobs (1997, 2003, 2004) contended that mapping in the 21<sup>st</sup> century should include the use of Internet-based mapping technology. Mapping software afforded a mechanism to house and retrieve maps from multiple years. Mapping software also included various search and report features for data analysis and monitoring curriculum. Additionally, Internet-based technology provided quick access to mapping information among teachers in a school or among schools within a district. Finally, Internet-based mapping technology provided a database for formulating data-informed decisions

pertaining to the students' actual experiences. Therefore, it is possible to identify gaps and redundancies that might impede student learning.

Jacobs (2004) suggested that mapping can serve as a hub for decision making and designing professional development opportunities. Analyzing and reflecting on the data within maps provides a means of determining site-based professional development requirements. For example, an analysis of maps might reveal an over reliance on one method of assessment or an over reliance on lower-level comprehension questions. Therefore, professional development might focus on a variety of assessment opportunities which promote higher-level thinking among students. Mapping information can be used to identify site-based professional development requirements and design job-embedded learning opportunities. Mapping can serve as a professional development hub focused on data-informed decisions instead of district-imposed opportunities which may be irrelevant to specific site-based requirements.

A framework that aligns the implemented curriculum to standards used to measure AYP proficiency targets as well as an electronic means to quickly identify and address gaps and monitor curriculum alignment is alluring. The benefits and potential challenges posed by the Jacobs model of curriculum mapping are described in more detail in Section 2.

### **Background to the Problem**

Mapping proponents warn that the success of a mapping initiative is dependent upon the leaders' understandings of the complexity of the mapping process and the magnitude of social change it represents for a district. The Jacobs model of curriculum

mapping is an on-going process that requires restructuring to provide time for mapping and articulation using mapping information. Mapping proponents recommend a year of planning and professional development for principals and teacher leaders prior to initiating implementation of mapping. Advanced planning and preparation are necessary to identify and address potential obstacles (Hale, 2008; Holt, 2004; O'Neil, 2004; Johnson & Johnson, 2004; Johnson & Lucas, 2008; Truesdale, Thompson, & Lucas, 2004).

Although the high school and junior high school levels in Wards Mill School District #4 (pseudonym) are not Title I schools, they failed to meet AYP for four consecutive years. As a result, both levels were given Academic Watch Status (AWS) and were eligible for additional state sanctions ("Frequently Asked," 2007; "Guidance to Districts," 2008; Interactive Illinois Report Card 2007a, 2007b). In an attempt to improve student achievement, the Jacobs model of curriculum mapping was introduced into the school district during the 2005-2006 school year at the high school and junior high school levels. Mapping was initiated at the five elementary schools during the 2006-2007 school year.

Mapping represents a second-order change for Wards Mill School District #4 (pseudonym) and administrators implemented mapping without a clear understanding of the processes in the Jacobs model of curriculum mapping and the degree of social reform it represents for this district. Furthermore, mapping was implemented without an understanding of how the magnitude of change impacts stakeholders and leadership

responsibilities and roles, which are leadership imperatives. As a result, this initiative has been met with false starts, resistance, and confusion.

Marzano, Waters, and McNulty (2005) defined a second-order change as a change which is a dramatic departure from past practices, requires the acquisition of new skills and knowledge, and conflicts with existing norms and values. Curriculum mapping represented several paradigm shifts for Wards Mill School District #4 in terms of leadership and how curricular and professional development decisions were formulated. The traditional practices and norms within Wards Mill School District #4 were founded on top-down leadership, teachers working primarily in isolation, and limited collaboration among teachers and schools. Therefore, propositions in curriculum mapping represented a second-order change for Wards Mill School District #4. Mapping challenged traditional administrative and instructional practices and mental models of teachers and administrators within Wards Mill School District #4. According to Senge (2006), these mental models are deeply ingrained assumptions.

Curriculum mapping proponents warn that this initiative takes several years to be fully implemented. They emphasize the importance of at least a year of advance preparation and collaboration between teams of administrators and teachers to identify and formulate plans to address potential obstacles. Teams of administrators and teachers need to be provided with professional development in mapping processes, that include the development of a common mapping format, quality map development, and use of the mapping technology (Hale, 2008; Holt, 2004; Johnson & Johnson, 2004; Johnson & Lucas, 2008; Truesdale, Thompson, & Lucas, 2004). Mapping proponents emphasize

that mapping is a multifaceted initiative requiring on-going support and professional development in the skills required to create maps, usage of the Internet-based software, collaborative review of mapping information, collaborative planning and sharing of practice, and teacher leadership (Hale, 2008; Holt, 2004; Johnson & Johnson, 2004; Johnson & Lucas, 2008; Truesdale, Thompson, & Lucas, 2004).

During the initial phase of curriculum mapping, a small team of high school and junior high school Wards Mill School District #4 teachers were provided with limited and conflicting training. Conflicting training refers to differences in map formatting messages presented to teachers during training sessions. Software consultants provided training in the basics of how to construct a map within the Internet-based system. However, insufficient training was provided for teachers to develop a sense of personal mastery in skills required to develop maps. Therefore, teachers felt ill-prepared and unwilling to assist others in their mapping efforts. Structural changes within the school calendar were not made to provide teachers with time to develop maps. The lack of time and insufficient training resulted in the development of maps that lacked the degree of quality and specificity required for meaningful curricular dialogue.

Disregarding the challenges faced by teachers at the high school and junior high school levels, the mapping initiative was expanded during the 2006-2007 school year to include teachers at the five elementary schools. In the summer of 2006, four elementary principals and approximately 20 elementary teachers participated in two days of professional development co-facilitated by a national consultant and myself, who was a teacher leader in Wards Mill School District #4. Prior to the summer training, the

elementary principals participated in a curriculum mapping book study conducted by this researcher and a one-day training session with the national consultant. The national consultant and I collaborated via e-mail communication to co-develop and plan the summer training for principals and teachers. The intent of the training was to engage teachers and principals in collaborative learning of mapping basics. However, the training did not provide attendees with sufficient knowledge and skills to facilitate and support the learning of colleagues.

Services of the national curriculum mapping consultant were enlisted during the 2006-2007 school year. I was given part-time responsibilities of coordinating and co-facilitating professional development to K-12 teachers representing seven schools. The majority of mapping efforts were focused on helping teachers at the high school and junior high school develop maps with a consistent format and degree of quality.

According to Hale (2008), a quality map depicts the intra-alignment of the content, skills, and assessments with state standards. A quality map is also written in a manner so that a map reader is able to accurately interpret information within the map without the map writer's presence.

English language arts is a content focus of the NCLB Act and an area identified for curricular improvement at all levels within Wards Mill School District #4. Therefore, unit office administrators determined that reading would be the content focus for the elementary maps. Hale (2008) contended that English language arts is the most challenging content area to map and advised against initiating mapping efforts in this content area. Compounding the challenges of mapping English language arts, a new

reading series had been adopted at the elementary level during the 2005-2006 school year. Teachers were told it was closely aligned to state standards and that deviating from the series was not permissible.

In an effort to minimize mapping format challenges, the mapping consultant and I collaborated to develop a mapping format which would closely align with state assessment frameworks and learning standards. The assessment standards are used to develop state tests for measuring AYP proficiency targets in third through eighth grades. The assessment frameworks provide specific grade-level learning expectations. The learning standards are broad learning expectations which are non-specific to a given grade-level. For example, the early elementary learning standards encompass expectations for students in Grades K-2.

Initial mapping efforts at the elementary level were limited to three 90-minute sessions spanning the course of five months and were held at each attendance center. During these sessions, teachers were provided with a basic understanding of the mapping components and how to construct a quality map. Additionally, teachers were provided with one full-day session at the technology office. The full day session included an opportunity for teachers to develop one personal monthly map, a Diary Map, within the Internet-based software system. Even though teachers were provided with assistance and support from the facilitators, insufficient time and training for mapping left many teachers feeling frustrated. Reading implementation mandates placed upon elementary teachers left them confused as to the necessity for mapping reading. Teachers also

expressed anxiety that mapping was being implemented so that administrators could monitor usage of mandated reading materials.

I developed and distributed the *Curriculum Mapping Needs and Goals Survey* to K-12 teachers through in-district e-mails during the spring of 2007. The survey was developed to provide teachers with a voice in the implementation of this initiative and to provide a means of monitoring implementation. The results of the survey were used by unit office administrators to determine my 2007-2008 mapping responsibilities.

Although teachers at all levels expressed the necessity for on-going support and professional development, my responsibilities during the 2007-2008 school year were limited to providing support to teachers at the elementary level and a half-day training session for newly employed K-12 teachers. Unit office administrators decided that services from the national curriculum mapping consultant would not be procured during the 2007-2008 school year.

I was given the responsibility of coordinating and facilitating three additional days of professional development for elementary teachers. The goal established by unit office administrators was the development of a year's worth of personal monthly maps, referred to as the Diary Maps. An additional expectation was that collaborative mapping efforts would result in the identification of curricular gaps. Furthermore, professional development was to lay the foundation for the creation of Master Maps. Hale (2008) defined these Master Maps as collaboratively developed and agreed upon maps of the intended curriculum.

I was instructed to schedule and facilitate one professional development session during the second, third, and fourth quarters and to facilitate vertical articulation sessions during the second semester. Grade level teachers were to be subdivided into two smaller groups of six or seven teachers, representative of each of the elementary schools. I was to determine the content of the sessions. Additionally, I was to prepare and submit quarterly progress reports to the school improvement facilitator who would present the information to the assistant superintendent of curriculum and the superintendent. Furthermore, I was instructed to focus efforts at the elementary levels, with the exception of providing one half-day orientation session for new teachers at the high school and junior high school levels.

The mapping consultant and I advocated for structural changes to provide time for mapping efforts. As a result, four early release half-days were built into the 2007-2008 school calendar for mapping efforts. However, elementary teachers related that principals used most of this time to engage teachers in activities directed by the principals rather than providing teachers with uninterrupted mapping time.

During the 2008-2009 and 2009-2010 school years, I was assigned to the junior high to serve as a science curriculum developer and science resource teacher. My mapping responsibilities were reduced to updating the Internet-based software accounts and providing mapping assistance to the junior high principal. However, the junior high principal indicated that mapping was a low priority due to restructuring efforts undertaken at the junior high. I facilitated a week long mapping session during the summer of 2009 with the science teachers for grades 6-8. As a result of horizontal and

vertical collaboration, science Master Maps were developed that ensured scaffolding of the intended curriculum. I demonstrated how the Master Maps could be converted into a Microsoft Word document and used for lesson plan development so that mapping might become more meaningful for teachers. During the 2009-2010 school year, the high school principal enlisted my help in providing a half-day mapping session for new teachers. At the end of the 2009-2010 school year, I retired from teaching.

The Jacobs model of developing formulaic monthly maps of the implemented curriculum provides a framework for aligning curriculum to standards students must master. Diary Maps, which are teacher's personally developed monthly maps, are intended to depict the actual curriculum experienced by students as they transition through the grade levels. Diary Map information in conjunction with other data sources, such as state testing results, are used to identify and address curricular gaps and redundancies. Mapping information can also be used to identify and address misalignment of curricula with state standards associated with tests used to measure AYP proficiencies targets. However, a precondition for alignment of curricula to the standards students must master is a raised awareness of the explicit and implicit content and skills represented by the standards (Ainsworth, 2003; Hale, 2008; O'Shea, 2005).

The Jacobs model of curriculum mapping provides a framework for building leadership capacity and fostering the development of professional learning communities focused on collaborative usage of data generated in maps. The types of collaborative learning and problem-solving associated within the Jacobs model are aligned with assumptions relating to teaching for the knowledge society. Hargreaves (2003)

contended that teaching for the knowledge society requires collaborative learning and data-informed decisions focused on the development of creative and critical thinking for students.

Students must develop critical and creative thinking skills so that they are prepared to respond to rapidly paced and changeable societal demands. Diary Map information provides a window into the actual curriculum implemented within a classroom to determine if students are provided with these critical and creative learning opportunities. Constructs within the Jacobs model of curriculum mapping represent the type of positive social change that results in building leadership capacity and collaborative learning for teachers and is focused on improving the educational and learning experiences of all students.

Studies have been conducted which attribute curriculum mapping as a factor in raising student achievement and examining teachers' perceptions toward mapping as a model for formulating collaborative curricular decisions and standards alignment (Kercheval, 2001; Lucas, 2006; Huffman, 2002; "Report of the Panel," 2001; Shanks, 2003; "Study of Effective," 2000; Wilansky, 2006). However, the literature does not represent studies pertaining to the leadership imperatives, roles and responsibilities, that are required to implement and sustain the Jacobs model of curriculum mapping. Jacobs (2004) contended that the success of a mapping initiative is determined by "measurable improvement in student performance in the targeted areas, and the institutionalization of mapping as a process for ongoing curriculum and assessment review" (p.2). However, large-scale social change initiatives, such as the Jacobs model of curriculum mapping,

often fail to become institutionalized due to misunderstandings of the magnitude of change represented by the initiative, the change process and how change affects stakeholders, and how the change initiative affects leadership responsibilities and roles (Evans, 1996; Fullan, 1993, 2001, 2004; Hale, 2008; Hall & Hord, 2006; Jellison, 2006; Lambert, 2003; Knoster, Villa, & Thousand, 2000; Lucas, 2006; Marzano, Waters, & McNulty, 2005; Schlechty, 1990; Senge, 2006).

Knoster, Villa, and Thousand (2000) suggested that sustainable change occurs if stakeholders have a shared vision, are provided with resources and incentives, have acquired skills, and change is guided by an action plan. They contended that the omission of any of these components would negatively affect stakeholders. Knoster et al. noted that confusion will result without a shared vision; anxiety occurs without skills; resistance results without incentives; frustration occurs if insufficient resources are provided; and a lack of progress results without an action plan. Senge (2006) and Fullan (2004) concurred with Knoster's assertion that leadership imperatives for change include developing a shared vision and moral purpose.

Furthermore, Senge (2006) and Fullan (2004) agreed that leadership imperatives include promoting collaborative knowledge creation and sharing of knowledge, which is contingent upon positive collegial interactions. Senge (2006) asserted that large-scale change requires addressing mental models that might not be conducive to the change initiative, necessitating the utilization of systems thinking. Systems thinking requires the examination of cause and effect relationships at various levels within an organization and the flexibility to modify implementation plans in response to varying stakeholder needs.

Fullan (2004) suggested that the successful implementation of a change initiative necessitates the willingness to tolerate ambiguity while creating coherence between past practices and new knowledge and skills associated with the change initiative. Change theorists contended that large-scale reform necessitates an understanding of the change process and its impact on stakeholders (Evans, 1996; Fullan, 2004; Jellison, 2005; Senge, 2006).

### **Problem Statement**

Many school districts across the country are faced with the problem of aligning curricula with state standards used to monitor Adequate Yearly Progress. The alignment process necessitates collaborative agreement among teachers as to common standards by course and vertical articulation to ensure scaffolding in rigor of content and process skills associated with course standards. The Jacobs model of curriculum mapping is not a quick fix for this problem; rather, it is a complex and potentially expensive process which represents a large-scale change initiative for public school districts that are dedicated to improving the teaching and learning process (Hale, 2008). Fullan (2001) contended that large-scale reform “means changing the cultures of the classrooms, the schools, [and] districts” (p. 7), all of which are extremely resistant to change. There are many possible factors contributing to this resistance, among which are misunderstanding the magnitude of change represented by an initiative and its impact on stakeholders; misunderstanding that change is a process rather than an event and therefore requires on-going resource provisions and monitoring; and misunderstanding that components within the change initiative might not be conducive to organizational cultures and mental models

(Chenoweth & Everhart, 2002; Evans, 1996; Fullan, 2001; Jellison, 2006; Marzano, Waters, & McNulty, 2005; Senge, 2006). This study will contribute to the body of knowledge needed to address this problem by exploring how teachers and administrators perceived the impact of the Jacobs model of curriculum mapping on leadership roles and responsibilities. Understanding how the implementation process impacted perceptions of leadership roles and responsibilities also expands current knowledge about the leadership factors that inhibit or promote buy-in and sustainability of the Jacobs model of curriculum mapping.

### **Purpose of the Study**

The purpose of this multiple case study was to explore how the Jacobs model of curriculum mapping impacted administrator and teacher perceptions of leadership roles and responsibilities during the implementation phase of this model in a rural Midwestern district. I also sought to understand how leadership during the implementation phase of the Jacobs model of curriculum mapping impacted teacher perceptions in relation to the sustainability of this initiative. Therefore, the purpose of this study was to describe the perceptions of K-12 teachers and administrators within Wards Mill School District #4 concerning the leadership roles and responsibilities required for implementing the Jacobs model of curriculum mapping and its sustainability.

### **Research Questions**

Using Yin's (2003) case study design, I attempted to answer the following questions:

1. How does the implementation of the Jacobs model of curriculum mapping impact administrators' perceptions of leadership roles and responsibilities?
2. How does the implementation of the Jacobs model of curriculum mapping impact teachers' perceptions of leadership roles and responsibilities?
3. How does leadership during the implementation of the Jacobs model of curriculum mapping impact teachers' perceptions in relation to the sustainability of this initiative?

### **Nature of the Study**

A multiple case study design was employed for this study. The research site that was purposefully selected for this study was the Ward Mills School District #4, which is a Midwestern rural school district. Within that district, the unit of analysis or *case* for this study was defined as the instructional level related to the implementation phase of the Jacobs model of curriculum mapping. For this study, the following three cases were purposefully selected: one elementary school case, one junior high school case, and one high school case. In addition, one administrative case that included K-12 administrators was also presented in order to explore the perceptions of district and school administrators about the impact of the implementation of the Jacobs model of curriculum mapping on their leadership roles and responsibilities. Data were collected from nine elementary teachers representing five elementary schools; nine junior high school teachers representing one junior high school; and seven high school teachers representing one high school. Data was also collected from two unit office administrators and three

principals representing each of the instructional levels. Data were collected from a total of 30 stakeholders within Wards Mill School District #4.

Data for this multiple case study were collected from multiple sources, including interviews and artifacts. Data was collected during the 2009-2010 school year from one semi-structured focus group interview and one-on-one interviews with 25 K-12 teachers as well as individual, semi-structured interviews with five administrators. Additional data was collected from archival records and documents from five school years from 2005-2006 through portions of the 2009-2010 school years. Archival records and documents included usage logs and sample maps retrieved from the Internet-based software system, professional development records, meeting agendas, collaborative curricular and standards documents, teacher reflection logs, professional development evaluation forms, and surveys. Two *Curriculum Mapping Needs and Goals* surveys were sent to a census of K-12 teachers in Wards Mill School District #4 during May of the 2006-2007 and 2007-2008 school years. Unobtrusive data were collected to triangulate information provided by participants during the focus group interviews and the one-on-one interviews. According to Hatch (2002) unobtrusive data include items such as documents and communiqués that are collected “without the direct involvement of research participants” (p. 116).

A single case analysis was first conducted according to the source of evidence that was collected. These data were coded and categorized. Line-by-line initial coding was used for the interview data, and documents were reviewed using content analysis. This single case analysis was followed by a cross-case analysis that examined the data

across all cases and all sources of data for common themes, patterns, and relationships to determine if the theoretical proposition was supported or if rival explanations needed to be considered. An interpretation of the findings concluded the data analysis.

The theoretical proposition for this study guided data collection and data analysis. According to Yin (2003), a theoretical proposition focuses attention on the topic or phenomenon of interest and guides data collection and analysis as well as keeps the study within reasonable limits. My theoretical proposition was that administrators and teachers did not have a clear understanding of the magnitude of change involved in the implementation of curriculum mapping. In addition, traditional mental models held by administrators and teachers might pose implementation challenges and inhibit the sustainability of this initiative.

For this study, the theoretical proposition was based on change theory related to six different themes. My first theme was used to examine whether or not the provision of resources, such as time and professional development, lead to skills required for personal mastery in mapping. The second theme was used to examine whether or not professional development and mapping opportunities resulted in team learning, knowledge creation and sharing, and reflective thought processes in relation to curricular alignment with standards and curricular decisions. The third theme was used to examine the impact of mapping on shifting mental models from traditional assumptions toward those assumptions more conducive to a professional learning organization of collaboration, trusting relationships, and building leadership capacity. My fourth theme was used to examine whether or not a shared vision and moral purpose for mapping was developed.

The fifth theme was used to examine whether or not mapping resulted in stakeholders using systems thinking to develop perspectives about their responsibilities for student learning beyond their classroom or school. My final theme was used to examine whether or not implementation plans for mapping and professional development incorporated concepts of systems thinking.

### **Conceptual Framework**

The magnitude of change and culture building required to institutionalize a curriculum mapping initiative justified using change theory as a conceptual framework for this study in relation to understanding leadership roles and responsibilities. Change theorists contend that sustainable reform will not occur unless those individuals in authority understand the magnitude of the change process and its effect on personal mental models (Evans, 1996; Fullan, 1993; Senge, 2006). The magnitude of the change affects leadership roles and responsibilities. Unlike a first-order change, a second-order change represents dramatic departures from norms and practices. Therefore, leadership roles and responsibilities for a second-order change differ from those of a first-order change (Evans, 1996; Marzano, Waters, & McNulty, 2005).

Large-scale changes, such as those associated with a second-order initiative; necessitate the development of a shared vision and moral purpose as a rationale for persevering through challenges (Fullan, 2004; Senge, 2006). Furthermore, change theorists contend that it is imperative to provide resources and continuous support required for team learning and personal mastery of necessary skills represented within the initiative (Fullan, 2004; Knoster, Villa, & Thousand, 2000; Senge, 2006). Large-scale

change also necessitates the use of systems thinking in order to monitor and modify implementation action plans according to the effect change has on different stakeholders (Fullan, 2005; Senge, 2006). Change theorists assert that change results in a sense of loss and necessitates the use of incentives to encourage and support stakeholders (Jellison, 2006; Knoster, Villa, & Thousand, 2000).

Yin (2003) contended that a theoretical proposition, which is used to guide data collection, analysis, and interpretation of findings, is based on the conceptual framework of a study. The theoretical proposition for my study is related to change theory in the following ways:

1. the development of a *shared vision* for how mapping helps students and teachers (Knoster, Villa, & Thousand, 2000; Senge, 2000, 2006);
2. *moral purpose* which provides the rationale for mapping (Fullan, 2004);
3. *incentives* used to motivate mapping efforts (Chenoweth & Everhart, 2002; Hall & Hord, 2006; Jellison, 2006; Knoster, Villa, & Thousand, 2000);
4. use of *systems thinking* to develop and monitor implementation plans and curricular decisions (Fullan, 2005; Senge, 2000, 2006);
5. an *action plan* which stipulates short-term and long-term mapping goals and expectations (Chenoweth & Everhart, 2002; Knoster, Villa, & Thousand, 2000);
6. provision of *resources* to support mapping efforts (Knoster, Villa, & Thousand, 2000);

7. the development of *personal mastery* in skills required for the mapping process (Senge, 2000, 2006);
8. *team learning* opportunities for creating new knowledge resulting from the mapping process (Senge, 2000, 2006); and
9. *making coherence* between past practices and mapping as it relates to curricular decisions (Fullan, 2004).
10. the *magnitude of change* affects leadership roles and responsibilities (Evans, 1996; Lambert, 2003; Marzano, Waters, & McNulty, 2005).

Therefore, data will be collected and analyzed to gain insights into perceptions as to how mapping and the leadership used during the mapping process compares to other district initiatives. Thus, a theoretical proposition related to change theory will be used to guide the data collection, analysis, and interpretation of findings.

### **Operational Definitions**

*Action plan.* The thoughtful and communicative plan concerning the process of change which include the steps or stages to occur and with whom the change is to involve (Knoster, Villa, and Thousand, 2000).

*Adequate Yearly Progress (AYP).* Annual proficiency targets in English Language Arts and Mathematics (“Frequently Asked”, 2007).

*Academic Watch Status (AWS).* Status associated with a school failing to make Annual Yearly Progress targets for four consecutive years (“Frequently Asked”, 2007).

*Change theory.* Several individuals have presented models and theories associated with organizational change and changes required of education in order to meet 21<sup>st</sup>

century demands (Chenoweth & Everhart, 2002; Evans, 1996; Fullan, 1993; Jellison, 2006; Senge, 2006). For this study, change theory is defined as theories associated with obstacles posed by change initiatives and leadership strategies for addressing the challenges.

*Curricular gaps.* Unplanned deficiencies in learning expectations and between the intended and implemented curriculum (Hale, 2008; Marzano, 2003).

*Curricular redundancies.* Unplanned repetition of identical learning expectations (Hale, 2008).

*Diary Map.* A personal map developed on a monthly basis by individual teachers which reflects the alignment of the implemented content, skills, and assessments with state and/or local standards (Hale, 2008).

*Implementation dip.* A phase during the change process in which morale and productivity are at a low point (Jellison, 2006).

*Implemented curriculum.* The actual curriculum delivered by teachers and actually learned by students (Marzano, 2003).

*Intended curriculum.* Curriculum which is specified by to state, school, or district which is to be addressed (Marzano, 2003).

*Internet-based curriculum mapping software.* An computer software program which provides a means of storing, retrieving, and performing a variety of searches and reports based on information in maps within the system. (Jacobs, 1997).

*Jacobs model of curriculum mapping.* A complex process which includes: (a) the

development of formulaic, calendar-based maps of the implemented and intended curriculum; (b) collaborative review, inquiry, and data-informed decision making based on information within maps; and (c) the formation of various teacher leadership teams (Hale, 2008; Jacobs, 1997, Udelhofen, 2005).

*Leadership imperatives.* For this study, the roles and responsibilities assumed by leaders during the implementation phase of the Jacobs model of curriculum mapping.

*Making Coherence.* Complex processes involved with balancing the ambiguities associated with change, and the assimilation of new actions, knowledge, and relationships associated with a change initiative (Fullan, 2004).

*Master Maps.* Collaboratively developed and agreed upon intended curriculum to be addressed (Hale, 2008).

*Mental model.* An individual's conceptual framework and tacit assumptions that guide actions (Senge, 2006). For this study, traditional mental models associated with education are referenced. Traditional mental models for administrators suggest that their role is that of a supervisor and manager; traditional mental models for teachers suggest that their role is to be the instructional leader within their classroom (Fullan, 2001; Walker, 2002).

*Moral purpose.* The intentional action directed toward having a positive impact on the lives of others (Fullan, 2004). As it relates to mapping, the moral purpose will provide the rationale for why curriculum mapping was implemented in Wards Mill School District #4.

*Personal mastery.* The continual development and clarification of skills and knowledge (Senge, 2006). As it relates to curriculum mapping, personal mastery will include the skills required to develop curricular maps, utilization of mapping technology, and usage of mapping data to formulate curricular decisions.

*Professional learning community.* An educational community devoted to building leadership capacity and working collaboratively to improve student learning (Dufour, Eaker, and DuFour, 2005).

*Quality maps.* A map that is written in a manner which provides clarity of intent and sufficient information to be easily interpreted by others (Hale, 2008).

*Second-order change.* A change which represents a dramatic departure from practices, beliefs, or cultural norms (Marzano, Waters, and McNulty, 2005).

*Shared vision.* Commonly held goals and missions of stakeholders which result in a commitment toward a specific purpose (Senge, 2006). As it relates to mapping, a shared vision will include an understanding of the relevance and benefits of mapping.

*Stakeholders.* This term is typically defined to include educational professionals, students, and parents. However, for this study stakeholders refers to the teachers and administrators involved in the implementation of the Jacobs model of curriculum mapping within Wards Mill School District #4 (pseudonym).

*Standards.* Articulated local, state, and/or national learning targets. (Hale, 2008).

*Standards alignment.* Content and skills which are linked to standards with appropriate assessments to provide evidence of standards attainment (Udelhofen, 2005).

*Systems thinking.* Examining and understanding the interconnectedness and impact of interventions within an organization (Senge, 2006).

*Team learning.* Collaborative creation and sharing of knowledge through dialogue and discussion (Senge, 2006). For this study, team learning refers to collaborative efforts of teachers to align curriculum with course standards and mapping efforts to identify and address curricular gaps and redundancies both horizontally within a course or grade level in addition to vertically among course and grade levels.

*Title I school.* Schools with large percentages of children from low-income families and receive federal funding to improve student learning (“Frequently Asked”, 2007).

### **Assumptions**

The following assumptions are associated with the Jacobs model of curriculum mapping:

1. The Jacobs model of curriculum mapping improves teacher knowledge about the standards that students must master and the alignment of curriculum to these standards.
2. The Jacobs model of curriculum mapping improves teacher reflectivity concerning the alignment of content, skill expectations of students, assessments, and resources with standards students must master.
3. The Jacobs model of curriculum mapping improves horizontal, vertical, and lateral knowledge of students’ transition through the grade levels and provides real-time data upon which school improvement decisions can be formulated.

4. The Jacobs model of curriculum mapping fosters the development of a community of learners focused on collaborative inquiry, shared practice, and data-informed curricular decisions to align curriculum to standards students must master.
5. The Jacobs model of curriculum mapping promotes social change from traditional leadership and instructional practices to foster a professional learning community of teachers and administrators.

Assumptions associated with leadership required for implementing the Jacobs model of curriculum mapping which result in social change and school reform include the following:

1. Leaders should be knowledgeable about the change process and its effect on stakeholders as well as the processes within the Jacobs model of curriculum mapping in order to appropriately support implementation of the Jacobs model of curriculum mapping.
2. Leaders should develop a shared vision and purpose for development and usage of curricular maps and its connection with school improvement plans and district goals.
3. Leaders should build trusting relationship between administrators and teachers and among teachers to establish learning-leading communities focused on site-based and district-based curricular improvements.
4. Leaders should use strategic and systems planning to appropriately provide on-going support which responds to differing skills levels and mental models

among stakeholders which may impede personal mastery required for processes associated with the Jacobs model of curriculum mapping.

In addition, it was assumed that the participants in this study would answer the interview questions honestly. It was also assumed that data collected from unobtrusive documents, such as survey responses and communiqués, accurately portrayed administrator and teacher perceptions. Furthermore, it was assumed that numerical data within surveys, various professional development records and reports, as well as documents housed in the software system were accurate.

### **Scope of the Study**

The scope of a study is defined in terms of the boundaries of the study. The boundaries for this study were established by the K-12 schools in a rural public school district in the Midwestern part of the United States. The rationale for these boundaries is that Wards Mill School District #4 was in the early stages of implementing curriculum mapping as a K-12 initiative. I was an employee of this district and was given leadership responsibilities during the implementation process. Therefore, I had access to the administrators and teachers within this district and was able to garner their perspectives concerning leadership roles and responsibilities during the implementation process and the impact of this leadership on perceptions of sustainability.

### **Delimitations**

The delimitations of a study involve narrowing the scope of the study in relation to the participants, the time, the resources, and the location. In relation to the participants and the location, this study confined itself to data obtained from K-12 administrators and

teachers in a rural school district in a Midwestern state. In relation to time, the data collection phase of this study was conducted from January 29, 2009 through December, 2009. Data analysis was concurrent with data collection and concluded on August 4, 2010. . In relation to resources, this study did not require the use of any additional resources, since I chose a research site that is close to my work and home. Therefore, financial expenditures to conduct this study were limited.

### **Limitations**

Limitations of a study are related to the potential design and/or methodological weaknesses of the study. Therefore, because this study used a case study design, one of the potential weaknesses of this study was a concern about researcher bias. For this study, I was the sole person responsible for data collection and analysis. Therefore, the potential for researcher bias definitely existed. Specific strategies that were used to enhance the internal and external validity of this study as well as the reliability of this study are described in the section titled *Reliability and Validity* in section 3.

Another limitation of this study in relation to case study design is related to the generalizability of findings. Personal, semistructured interviews were conducted with administrators willing to participate; therefore, it was not be possible to obtain interview data from all of the administrators. Limitations associated with collecting data from multiple cases decreases the depth of the findings when compared to data collected from a single case. Data collected from multiple cases and multiple years also make it more difficult to analyze data and resolve discrepancies which may arise as well as make findings subject to other interpretations. Case study findings are specific to the context of

the study and prohibit the generalizability of findings to areas beyond the immediate context of the study.

### **Significance of the Study**

The significance of a study is related to contributions related to research on the topic, to practice in the field, to defining policy, and to social change. In relation to practice in the field, the findings from this study might help district administrators to identify areas of concern which could impede sustainability of this curriculum mapping initiative and provide a means of making data-informed decisions to increase the probability of sustainability. Data from the study might also provide documented evidence of how curriculum mapping supports district goals. District goals include a raised awareness in standards, curricular alignment with standards, and identifying curricular gaps and redundancies. Data may also provide evidence of whether curriculum mapping has fostered positive social change within Wards Mill School District #4 in relation to the development of professional learning communities that are focused on improving student learning. Supportive evidence might be used by Unit Office administrators to offset concerns of resisters and address political and funding issues associated with the school board.

In relation to research on the topic, this study addressed gaps in the literature relating to the Jacobs model of curriculum mapping. Studies have been conducted to determine the effect of mapping on the student academic gains, teachers' perceptions toward mapping, and the use of mapping to formulate curricular decisions (Lucas, 2006; Huffman, 2002; Shanks, 2003; Wilansky, 2006). However, the literature does not

represent scholarly studies pertaining to leadership issues related to implementing the Jacobs model of curriculum mapping. The Jacobs model of curriculum mapping represents a second-order change for traditional districts and poses several leadership challenges (Hale, 2008). Therefore, this study which identifies and addresses leadership challenges that emerged during the implementation phase of the Jacobs model of curriculum mapping will address gaps in the literature and provide information which might be able to benefit districts during their implementation process.

Social change required to meet 21st century demands for education will necessitate a shift from traditional leadership and teaching norms. The Jacobs model of curriculum mapping provides a framework for transitioning from traditional norms to those more conducive with professional learning-leading communities. However, the processes outlined in the Jacobs model will pose second-order magnitude challenges for traditional educational cultures. This study might provide insights into challenges posed during the implementation process and into the leadership imperatives needed for addressing these challenges. Knowledge of potential challenges and the impact of leadership during the implementation process might help leaders in districts that are contemplating the adoption of a curriculum mapping initiative to develop conditions that are more conducive to positive social change.

### **Summary**

Section 1 presented an introduction to the study, including a statement of the problem, the purpose of the study, the research questions, the conceptual framework, the assumptions and limitations of the study, and the significance of the study. The purpose

of this multiple case study was to analyze the impact of implementing the Jacobs model of curriculum mapping on the leadership perceptions of stakeholders. This study also analyzed the effect of leadership on perceptions of the sustainability of the Jacobs model of curriculum mapping within Wards Mill School District #4. Data representing 5 years of the implementation process within Wards Mill School District #4 was collected and analyzed to identify common leadership themes. Change theories were used as a conceptual framework for this study. The findings of the study addressed gaps in scholarly studies relating to leadership and curriculum mapping. The study also provided insights into the leadership challenges and strategies for addressing obstacles encountered during the implementation phase of the Jacobs model of curriculum mapping within a rural Midwestern school district.

Section 2 presents a review of the literature that compares and contrasts the traditional purpose of education with that of the 21<sup>st</sup> century and how this changing purpose impacts leadership and teacher roles and responsibilities. An examination of the research literature on the impact of the NCLB Act of 2001 and the standards movement provides a segue and rationale for a review of the literature related to the Jacobs model of curriculum mapping which is examined in relationship to the social change and school reform required to meet 21<sup>st</sup> century knowledge society demands. The Jacobs model of curriculum mapping represents a large-scale change initiative and therefore justifies a more in-depth examination of the research literature related to change theories as a conceptual framework for this multiple case study. The summary and conclusion for this

chapter describes the major themes found in the literature review as well as the gaps and deficiencies found in prior studies.

Section 3 addresses the methodology used for the study and provides a description of the qualitative paradigm and the rationale for its selection over the quantitative paradigm. In addition, the case study research design is described, and the rationale for its selection is presented. A description of the data collection plan is presented, including the data collection instruments. The setting and population as well as sampling methods are also discussed in Chapter 3. A description of the data analysis plan is discussed as well as strategies that were used to enhance reliability and validity in order to improve the quality of this study.

Section 4 reviews the data collection process and describes how the data was organized. Data analysis is presented first according to each source of evidence for each case and then by a cross-case analysis. At the first level of analysis, the specific analytic techniques of coding and categorization are used. At the second level of analysis, the categorized data is examined for themes, patterns, and relationships to determine if the theoretical proposition for this study is supported or if rival explanations need to be considered. Findings are presented in relation to the research questions and in relation to the theoretical proposition discussed in this chapter.

Section 5 presents an interpretation of the findings of the study from the previous chapter in relation to the conceptual framework of the study and the literature review. In addition, this chapter includes recommendations for future research, recommendations

for action, and discusses implications for social change. This chapter also includes a section on my reflections about the process of case study research and a conclusion.

## Section 2: Literature Review

### **Introduction**

Due to the technological advances in Internet communications, Friedman (2005) argued that citizens in the United States are increasingly challenged to compete in a global economy. Friedman contended that the flattening of the world, which is a result of wiring the world, makes it “much easier for foreigners to innovate without having to emigrate [because] they can do world-class work for world-class companies at very decent wages without ever having to leave home” (p. 259). At a time when citizens of the United States were increasingly competing with citizens in other countries for jobs in the global economy, evidence showed that students in the United States were repeatedly underperforming on international tests (“PISA”, 2006). The underachievement of students in the United States led to various governmental policies designed to reform the educational system.

The emergence of a global economy increased pressure on the educational systems in the United States. Governmental policies increasingly applied accountability pressure on school systems to measure student achievement with standards-based, high-stakes tests. Mounting pressure and threats of corrective actions associated with underperformance provided the impetus to align curriculum to standards upon which student achievement was measured. Exploring the influences on governmental policies provided a rationale for understanding the standards movement and the pressure to seek methods to better align curriculum to standards. Archived government documents and

research literature relating to the NCLB Act also provided an understanding of the factors that influenced educational policies.

Societal shifts are increasingly challenge traditional educational norms and necessitate exploring the paradigm changes in the purpose of education and the dynamics within the organization. Exploring these issues may help provide the rationale for systemic change. Cetron and Cetron (2004), Evans (1996), Friedman (2005), Fullan (1993), Hargreaves (2003), Schlechty (1990), and Walker (2002) provided a rationale for the changing purpose of education. Transitioning from a traditional paradigm to one more conducive to meeting 21<sup>st</sup> century societal demands supported exploring factors associated with change and its impact on stakeholders. Change theories provided a conceptual framework for understanding the change processes, magnitude of change and its impact on stakeholders, and change in leadership theories. Exploring change theories provided insights into leadership imperatives for implementation and sustainability of large-scale reform initiatives. Theories espoused by Chenoweth and Everhart, (2002), Evans (1996), Fullan (1993, 2001, 2004), Hall and Hord (2006), Hargreaves and Fink (2006), Jellison (2006), Kotter (1996), Kouzes and Posner, (2006), Knoster, Villa, and Thousand (2000), Lambert (2002, 2003, 2005), Leithwood (1992), Sarason (1996), Senge (2000, 2006), and Schlechty (1990) provided information pertaining to the change process and of implementing change initiatives in relation to leadership imperatives.

Some districts are faced with implementing large-scale reform initiatives in an attempt to meet the challenge of aligning curriculum to standards upon which high-stakes tests are based. Since standards requirements may differ among the states within the

United States, textbooks are often loosely correlated with standards. Therefore, it is increasingly important for educators to collaborate and become designers of curricula in order to ensure a seamless transition for students through the grade levels.

The Jacobs model of curriculum mapping provides a framework for aligning the curriculum to standards and fostering a learning-leading community within school districts. Hale (2008) argued that the Jacobs model represents a second-order change initiative for traditional districts. Lambert (2003) and Marzano, Waters, and McNulty (2005) provided information relating to the impact of this second-order change. Jacobs (1993, 2003), Udelhofen (2005), Hale (2008) and various practitioners associated with implementing this model provided information about the model and an understanding of its principles. Research relating to the effectiveness of the Jacobs model on improving student achievement and in developing a learning-leading organization provided support for this initiative and its potential for fostering positive social changes within a school district (Beans, 2006; Habegger, 2007; Huffman, 2002; Lucas, 2006; Shanks, 2002; Wilansky, 2006).

The review of literature first examines the factors that have influenced current educational policies and societal shifts that have impacted school reform initiatives. That section is followed by an overview of how these societal shifts have influenced the need for educational reforms relating to the purpose for education, the need for traditional hierarchies, and the role of educators in implementing these reforms. Educational reform to meet 21<sup>st</sup> century demands represents a second-order change for traditional districts. Therefore, theories associated with the change process and leadership imperatives for

implementing a second-order change initiative are reviewed. The next section is a discussion of the tenets of the Jacobs model for curriculum mapping and how this initiative provides a model for school reform that can be used by school districts to meet these shifts in societal demands. In addition, literature related to the challenges that leaders face during implementation and related studies on curriculum mapping are reviewed. The section concludes with a discussion of the major themes and the gaps and deficiencies that were found in the literature review.

### **Inclusion Criteria**

Literature and research selected for this review have primarily been written or conducted between the years of 2000 and 2008. Internet searches for articles were conducted using various search engines accessible through the Walden Library, such as EBSCOhost and Google Scholar, and articles retrieved from the Association for Supervision and Curriculum Development (ASCD) and the National Staff Development websites. Some of the key words used for the search included *change agent, leadership style, education reform, change theory, organizational theory, learning organizations, transformational and transactional leadership, curriculum mapping, and standards*. Searches were also conducted for specific articles and authors based on references noted in books and articles. In addition, various curriculum mapping, leadership, and change theory books were purchased, based on references observed in books and articles or based on the reputation of the authors.

### **Exclusion Criteria**

No articles, books, or dissertations written before 1990 were used. The majority of the references were written in the years 2000-2008. However, since English was a pioneer in curriculum mapping during the 1980s, his contributions were included in the research.

### **Factors Influencing Educational Reform**

Chenoweth and Everhart (2002) contended that the aspirations for American schools changed from increasing school *attendance* during the first half of the twentieth century to increasing *access* during the second half of the twentieth century and, during the last decade of the century, “focused on the goal of academic *achievement* for all students” (p. 161). The refocusing of purpose began with the publication of *A Nation At Risk* in 1983. This publication served as a wake-up call to alert the public to the fact that students in other industrialized countries were out performing American students and that the economic well-being of America’s prosperity and security was threatened (“Archived: A Nation”).

In 1989, President Bush convened an Education Summit to engage the nation’s 50 governors in discussions to propose a national strategy for addressing the state of America’s educational system and to determine school improvement goals. The Goals 2000: Educate America Act was signed into law during President Clinton’s administration and put into motion the development of state standards. The Goals 2000: Educate America Act established “a framework in which to identify world-class academic standards, to measure student progress, and to provide the support that students

may need to meet the standards” (“Summary of Goals,” para. 2). The most recent revision of the Elementary and Secondary Education Act of 1965 is called the No Child Left Behind (NCLB) Act.

The NCLB Act of 2001 set forth the goal that all students were expected to achieve proficiency targets, set forth by each state, in English language arts and mathematics by 2013-2014. Although states choose the tests which were used to measure AYP targets, the federal government had to approve the state’s targets. The federal government was particularly interested in the AYP improvement scores of Title I schools. Title I schools were those schools that had high percentages of students from low income families and that received federal funding. Title I schools that failed to meet AYP targets were subject to escalating consequences for each year the school did not meet the targets.

Some educators claimed that the NCLB Act had adverse effects on education in terms of narrowing the curriculum to focus more resources on high-stakes testing areas to the exclusion of areas such as fine arts and resulted in teachers teaching to the tests (Cawelti, G, 2006; Guilfoyle, 2006; Zellemer, Frontier, & Pheifer, 2006). However, other educators contended that the NCLB Act resulted in positive movement toward narrowing the achievement gap of students from low-income families.

Zavadsky (2006) applauded the efforts of urban districts which, “despite poverty, high student mobility, and other challenges ... developed well-aligned systems that boosted students’ achievement and narrowed achievement gaps” (p. 69). Haycock (2006) indicated that “Although NCLB isn’t perfect, the Bush administration and Congress did

something important in passing it” (p. 38). Haycock added, “They called on educators to embrace a new challenge – not just access for all, but achievement for all” (p. 38).

Since the publication of *A Nation at Risk*, America has had to face the sobering fact that the educational systems of other Organization for Economic Cooperation and Development (OECD) countries were continuing to produce students who out performed students in the United States. Recent rankings on OECD international tests demonstrated that America continued to lag behind other nations in mathematics, science, and reading (PISA, 2006). Hargreaves (2003) noted, “International test results in mathematics and science provoked public anxiety and provided ammunition for many Western governments to reform their educational systems” (p. 14).

Rotberg (2006) contended that policy makers relied too heavily upon international test score rankings and suggested that the rankings “dominated U.S. public policy dialogue for decades” (p. 58) and influenced NCLB policies. However, Friedman (2005) asserted that “it is hard to have an American national strategy for dealing with flatism if people won’t even acknowledge that there is an education gap emerging...and that we are in a quiet crisis” (p.281). Friedman (2005) also contended that technology has been flattening the world and propelling society into a global economy in which citizens of the United States increasingly compete locally, nationally, and globally for jobs. As the time drew near for the NCLB Act to be reauthorized by Congress, Hoff (2006) noted that business groups and large companies formed a coalition to protect the law. The international achievement gap between American students and students from other industrialized countries was perceived as a threat to America’s economic

competitiveness. Hoff (2006) also suggested that business groups were motivated to support the law in order to remain economically competitive.

Weaver (2006) indicated that the National Education Association (NEA) “strongly support[ed] NCLB’s stated goals—to improve student achievement and help close achievement gaps. [because] these goals are crucial to the health of society” (p. 32). However, Weaver (2006) indicated that the NEA also countered that the model utilized in the No Child Left Behind Act to determine AYP was inadequate because it “fail[ed] to accurately measure student learning and school success. . . . [because] it fail[ed] to account for a school’s results in improving the achievement of individual students over time” (p. 32). Although the NEA supported standards, Weaver (2006) emphasized that:

Federal law should encourage states to create comprehensive, flexible standards that do not narrow the curriculum. These standards should incorporate the nature of work and civic life in the 21<sup>st</sup> century. Students need high-level thinking skills and global understanding, as well as sophisticated information, communication, and technology competencies. (p. 33)

The document titled *Building on Results: A Blueprint for Strengthening the No Child Left Behind Proposal*, submitted to the Congress in 2007 by former Secretary of Education Margaret Spellings, urged Congress to continue measuring achievement and enforcing accountability. This proposal also challenged states to implement more rigorous standards and assessments for all students. Spellings (2007) indicated that the Department of Education would “support cross-state comparisons by providing a

platform for states and the general public to analyze and compare standards across the nation” (p. 6).

### **Changing Purpose of Education**

Schlechty (1990) noted that the traditional role of the school, mode of instruction, and authority hierarchies are designed to meet the needs of an industrial society which includes “a well-educated elite and the masses trained for semiskilled or low-skilled jobs” (p. 5). Walker (2002) observed that the traditional instructional role of the teacher is considered to be the repository of knowledge; therefore, teachers often lecture students during whole-class instruction followed by opportunities for student drill and practice. However, Cetron and Cetron (2004) proposed that the shift in societal demands must spur educational reform and that “learning to learn must become the underpinning of all curriculums and must be a requirement of both students and their instructors in all content areas and grade levels” (p. 28). Schlechty (1990) stressed that societal demands require schools to become knowledge-work organizations in which students are active participants in the knowledge process rather than mere recipients of knowledge.

Cetron and Cetron (2004) suggested that the fluidity of 21<sup>st</sup> century job markets might require individuals to “pursue an average of five entirely different occupations during their working lives [therefore] both management and employees must get used to the idea of lifelong learning” (p. 28). Schlechty (1990) proposed “that the only possible way for America to compete in a global economy and maintain the present standard of living is to increase the capacity of the citizenry to do knowledge work and to increase the number of citizens capable of such work” (p. 36).

A 2006 report prepared by the American College Testing (ACT) organization indicated that the benchmark ranges for college-level course requirements were similar to WorkKey levels that are indicative of workforce training program demands. WorkKeys are job skills assessment tests developed by ACT. In essence, the report suggested that the basic job skills required of an individual entering the workforce are similar to the basic skills required of individuals who plan to attend college. In support of this idea, Schlechty (1990) noted, “As the American economy becomes more information-based and as the mode of labor shifts from manual work to knowledge work, concern with the continuous growth and learning of citizens and employees will increase” (p. 39).

Hargreaves (2003) suggested that the role of education in the knowledge society is to empower citizens with the skills required to become life-long learners capable of reinventing themselves for life in a changeable environment. Hargreaves stressed that:

Economic success and a culture of continuous innovation depend on the capacity of workers to keep learning themselves and from one another. A knowledge economy runs not on machine power but on brain power – the power to think, learn, and innovation. Industrial economies needed machine workers; knowledge economies need knowledge workers. (pp. 18 – 19)

In support of this idea, Fullan (1993) suggested that “of all the institutions in society, education is the only one that potentially has the promise of fundamentally contributing to this goal” (p. 4). Therefore, to meet societal demands, the role of the teacher must shift from the traditional role of a repository of knowledge to that of a curricular and instructional leader. Hence, Schlechty (1990) observed, the role of

administrators must shift to encompass viewing themselves as “leaders of leaders, creators of conditions in which other leaders thrive, and developers of leaders” (p. 43).

### **Change in Leadership Theories**

Leadership theories pertaining to the roles and responsibilities of administrators have changed dramatically through the decades. The traditional principal’s role was that of a supervisor and manager of the building and employees; therefore, the role was more focused on top-down management style (Taylor, 1994; Walker, 2002). Evans (1996) observed that “most administrators have been trained to see leadership in terms of the rational-structural paradigm . . . and to approach their roles in ways that actually inhibit rather than foster change” (p. 147). Leithwood (1992) proposed that the magnitude of school reform required to meet the challenges of the 21<sup>st</sup> century necessitates that administrators assume a transformational rather than a transactional role. Leithwood (1992) indicated that transactional leaders focus on the managerial function of maintaining the organization, and he implied that this style of leadership does not stimulate innovation.

In contrast, Leithwood (1992) suggested that “transformational leadership provides the incentive for people to attempt improvements” (p. 9). Lindsey, Roberts, and Campbell Jones (2005) related that “the school leader who holds a transformational perspective focuses on leadership and school practices to meet the generative opportunities and needs of diverse communities . . . [and] direct their own leadership activities in ways that involve all members of the school” (p. 21). Whereas the

transactional leader issues top-down directives, the transformational leader engages the perspectives of others in the decision-making process.

Small's (2003) research suggested that the "transformational leadership style had a positive correlation with teacher's willingness to exert effort...whereas the transactional leadership had a negative effect on extra effort" (p.88). Booker (2003) also found that teachers' perceptions of school climate are more positive if the principal is perceived as a transformational rather than a transactional leader. Lee (2005) discovered that teachers' perception of job satisfaction and commitment are positively impacted by transformational leadership. The research findings presented by Small (2003), Booker (2003) and Lee (2005) supported Leithwood's (2002) contention that traditional hierarchical leadership and teacher isolation provide barriers to transformational change initiatives. Educational and business reformers advocated that changes in leadership style are necessary to meet complex societal demands, and they espoused a movement away from the traditional, top-down manager style to a more shared or distributive leadership style (DuFour, 2002; Elmore, 2002; Evans, 1996; Freemantle, 2004; Fullan, 2004; Kotter, 1996; King, 2002; Kouzes and Posner, 2006; Lambert, 2002, 2003; Martin, 2005; Neuman & Simons, 2000; Reeves, 2006b).

Distributive leadership attempts to build leadership capacity and responsibility in others. However, Fullan (2005) suggested that the magnitude of reform required to meet 21<sup>st</sup> century demands necessitates utilization of pluralized leadership rather the distributive leadership. Fullan (2005) explained that "pluralized leadership, [includes] teams of people creating and driving a clear, coherent strategy" (p. 67).

## **Change Theory**

Change theorists proposed that sustainable reform would not occur unless leadership style went beyond fostering leadership capacity. School reform required to meet the societal demands of the 21<sup>st</sup> century necessitated cultural change leaders who have an understanding of the complexities of the change process. Successful school reform also required change leaders to understand the impact of change on the emotional status of stakeholders and on organizational cultures (Chenoweth & Everhart, 2002; Evans, 1996; Fullan, 2001, 2002, 2004, 2005; Fullan, Beriani, & Quinn, 2004; Hall & Hord, 2006; Hargreaves, 2003; Hargreaves & Fink, 2006; Sarason, 1996; Senge, 2000, 2006; Schlechty, 1990).

Change theory has been applied as a theoretical framework for understanding leadership during reform initiatives (Datnow & Stringfield, 2000; Desasy, 2004; McLaughlin, 2000; Staley, 1998) as well as for understanding the impact of change on teachers (Cross, 1991; Espinoza, 2006). The major proposition of change theory emphasizes that change is a process of overlapping dynamically complex systems (Evans, 1996; Fullan, 1993; Hall & Hord, 2006; Senge, 2006). Therefore, successful implementation of a large-scale change process requires understanding the interrelationship between cause and effect in various parts of a system in order to appropriately and flexibly respond as problem arise. Fullan (1993) emphasized that “successful change management requires problem-solving techniques [because] the avoidance of real problems is the enemy of productive change” (p. 26).

Senge (2000) proposed that problem solving during a complex change requires systems thinking. He noted that systems thinking encompass the contemplation of problems and goals “not as isolated events but as components of larger structures” (p. 78). Both Senge (2006) and Fullan (2005) supported the idea that complex change requires a non-linear, systems approach to identifying and solving problems. According to Senge, “The key to seeing reality systematically is seeing circles of influence rather than straight lines. This is the first step to breaking out of the reactive mindset that comes inevitably from ‘linear’ thinking” (p. 75).

Change requires the development of new skills and behaviors that challenge personal assumptions and practices. Senge (2006) referred to an individual’s personal assumptions as mental models. Senge (2000) explained that “mental models are usually tacit, existing below the level of awareness, [and therefore] they are often untested and unexamined” (p. 67). Senge (2000) argued that differences in mental models “explain why two people can observe the same event and describe it differently” (p. 67). Senge (2006) also stated that “new insights fail to get put into practice because they conflict with deeply held internal images of how the world works, images that limit us to familiar ways of thinking and acting” (p. 163). Therefore, Senge (2006) and Evans (1996) emphasized the importance of uncovering mental models, or assumptions, that are guiding personal belief systems. Sustaining a change initiative requires uncovering mental models and developing a shared vision and moral purpose for change (Evans, 1996; Fullan, 1993, 2001, 2004, 2005; Senge, 2000, 2006).

The change agent must be knowledgeable about the initiative and its benefits in order to build a shared vision and purpose for change and to help stakeholders persevere through the challenges associated with the change process (Chenoweth & Everhart, 2006; Evans, 1996; Fullan, 2000, 2004, 2005; Glickman, 2002; Senge, 2000, 2006). Senge (2006) explained that a shared vision provides a rationale for change but also fosters a belief in what the future can hold which energizes the organization. Senge (2006) suggested that developing a shared vision requires visionary leadership which continually promotes the vision of the future until organizational members develop a personal vision of their role in the process which gradually melds into a collectively shared vision of future possibilities.

However, Hargreaves and Fink (2006) warned that “when change has only a present or future tense, it becomes the antithesis of sustainability” (p. 226), and therefore, leaders must “work hard to build proposals for change upon legacies of the past” (p. 226). Senge (2000) acknowledged the challenge posed for leaders in bringing into alignment differing perspectives and aspirations; however, Senge warned that “vision based on authority are not sustainable” (p. 72). Authority based vision is not sustainable because it is based on compliance instead of authentic commitment (Senge, 2006). Knoster, Villa, and Thousand (2000) stressed that failure to develop a shared vision results in confusion and can thwart the implementation process. Thus, leading a change initiative necessitates an in-depth understanding of the culture of an organization and the magnitude of change represented by the initiative. It is imperative that the change leader understands the magnitude of change represented by the initiative in order to appropriately modify their

leadership style (Chenoweth & Everhart, 2002; Evans, 1996; Lambert, 2003; Marzano, Waters, & McNulty, 2005).

### **Magnitude of Change**

Change theorists (Evans, 1996; Fullan, 1993; Senge, 2006), educational researchers (Lambert, 2003; Marzano, Waters, & McNulty, 2005), and business leaders (Jellison, 2006; Kotter, 1996) have all contended that leadership responsibilities and roles are influenced by the magnitude of change represented by an innovation. According to Marzano et al. (2005) “whether a change is perceived as first-order or second-order depends on the knowledge, experiences, values, and flexibility of the individual or group perceiving the change” (p. 112). Chenoweth and Everhart (2002) also noted:

First-order changes are those that focus on improving the effectiveness of the existing processes but which do not fundamentally alter the existing patterns of teaching and learning.... Second-order change, on the other hand, is aimed at a fundamental alteration in the goals, culture, and outcomes of schooling on the assumption that unless this comprehensive restructuring occurs across the school, the impact of change will be minimal. (p. 143)

A second-order change can negatively impact school cultures because it challenges belief systems. According to Evans (1996), second-order change results in a sense of loss and “immediately threatens people’s sense of competence, frustrating their wish to feel effective and valuable” (p. 32). Evans also noted:

Alterations in practices, procedures, and routines hamper people’s ability to perform their jobs confidently and successfully, making them feel inadequate and

insecure...it shakes their confidence and makes them doubt their abilities, especially their ability to adapt to the new requirements. (p. 32)

According to Jensen (2000), brain research indicated stress has a negative impact on learning and emotions. Goleman (2006) asserted that socially intelligent leaders understand the link between emotions and learning; therefore, they attend to the emotional needs of staff by fostering open communications. The emotional unrest and perceptions of inadequacy resulting from a second-order change initiative necessitate development of a shared vision which compels perseverance through initial challenges.

The results of a meta-analysis research study conducted by Marzano (2005) indicated that the leadership responsibilities for second-order change are different from those of a first-order initiative. Successful leadership during a second-order change necessitates: (a) developing knowledge in the initiative, (b) fostering an understanding of the benefits of the initiative, (c) sharing knowledge of research and theories associated with the initiative, (d) serving as a change agent to challenge the status quo, (e) monitoring the impact of the initiative and the implementation process, (f) demonstrating flexibility in leadership behaviors, and (g) articulating beliefs and values relating to the initiative (p. 71-72). Marzano contended that “to successfully implement a second-order change initiative, a school leader must ratchet up his idealism, energy, and enthusiasm” (p.75). Marzano also noted, “Additionally, school leaders must be willing to live through a period of frustration and even anger from some staff members” (p. 75).

Furthermore, Goleman (2006) related that due to the effect of mirror neurons, it is imperative for leaders to model positive behaviors and attitudes even as they face

challenges. Change leadership roles and responsibilities encompass promoting an understanding of the relevance and importance of undertaking the change initiative and demonstrating care and concern for those impacted by the change. Evans (1996) emphasized, “The change agent must make clear his caring and support, his commitment to working with the people to take the difficult steps toward new learning. He must reaffirm connection and help make the change meaningful” (p.58). Donaldson (2006) and Fullan (2004) also agreed on the importance of developing trusting relationships and open lines of communication between administrators and teachers as key components of change. Trusting relationships and supportive, open communication fosters an environment where stakeholders feel safe to make mistakes during the early phases of the implementation process (Evans, 1996; Fullan, 1993; Jellison, 2006; Kouzes & Posner, 2006; Senge, 2006).

Evans (1996) asserted that the magnitude of change required to reform schools to meet societal demands also requires a different change model. Evans contended that traditional change models were based on a rational-structural paradigm in which an “organization depends on rational, objective decision making, quantitative measurements, and the pursuit of long-range goals [and adhere to a] command-and-control mindset” (p. 6). Kotter (1996) noted that attempting to manage “major change with simple, linear, analytical processes almost always fails” (p. 25) because leadership skills rather than management skills are required to restructure an organization. Additionally, Lambert (2003) observed that the traditional directive, top-down style of leadership is not conducive to fostering second-order change. Instead, Lambert suggested that

administrators need to adapt a style of leadership that builds leadership capacity in others.

Waters, Marzano, and McNulty (2004) also noted:

Achieving the goals of the No Child Left Behind Act will undoubtedly require schools to undertake numerous challenges, many of which may challenge prevailing norms and values and require educators to acquire new knowledge and skills. Successfully implementing these second-order changes requires effective leadership. (p. 51)

Unfortunately, neither the traditional role of the school or the philosophies for dealing with change are appropriate for addressing the complex demands of society.

### **Leadership Roles during the Change Process**

It is imperative for the leaders to understand the change process and its effect on their responsibilities (Chenoweth & Everhart, 2006; Evans, 1996; Fullan, 1993; Jellison, 2006; Lambert, 2003, 2005; Waters & Kingston, 2005). Change is associated with an implementation dip in which productivity and morale can lessen (Fullan, 1993; Hall & Hord, 2006; Jellison, 2006; Senge, 2006). Jellison (2006) referred to his theories concerning the change process as the *J Curve*. According to Jellison, there are 5 stages in the change process: (a) plateau, (b) cliff, (c) valley, (d) ascent, and (e) mountaintop. Each phase is representative of the impact the change initiative has on stakeholders and how each phase affects leadership responsibilities. Jellison (2006) stated, “When people understand the natural trajectory of change, they understand things are going to get worse before they get better” (p. 33). Fullan (1996) emphasized that “success in school change efforts is much more likely when problems are treated as natural, expected phenomena,

and are looked for; [unfortunately] ...too often change-related problems are ignored, denied, or treated as an occasion for blame and defense” (p. 26). Fullan (1996) argued that “smoothness in the early stages of a change effort is a sure sign that superficial or trivial change is being substituted for substantial change attempts” (p. 26).

Resistance is a natural problem that emerges during the early phases of the implementation process (Chenoweth & Everhart, 2002; Evans, 1996; Hall & Hord, 2006; Jellison, 2006; Fullan, 1993, 2005; Senge, 2006). Therefore, it is important for leaders to be knowledgeable and to communicate the benefits of the initiative throughout the process but especially during the initial phases when resistance is high. Jellison contended that it is important to discern whether resistance is due to fear-based concerns, which are connected to emotional reluctance, or is based on well-reasoned objections.

Hargreaves and Fink (2006) observed that resistance to change, especially among more mature stakeholders, results from an unwillingness to abandon past practices. They noted, “Whenever changes are being considered, sustainable leadership should look to the past for precedents that can be reinvented and refined...this doesn’t mean living in the past, but it does mean valuing and learning from it” (p. 226). Evans (1996) and Jellison (2006) agreed that it is important to listen to stakeholders’ concerns and sympathize with negative feelings. Evans also pointed out, “The change agent must make clear his caring and support, his commitment to working with people to take the difficult steps toward new learning” (p. 58). According to Senge (2000), bringing into alignment disparate aspirations is an essential element is developing a shared vision; however, he also noted,

Catalyzing people's aspirations doesn't happen by accident; it requires time, care, and strategy. To support this creative process, people need to know that they have real freedom to say what they want about purpose, meaning, and vision with no limits, encumbrances, or reprisals. (p. 72)

In addition, Pfeffer and Sutton (2000) emphasized the importance of encouraging open communication and an environment which minimizes the fear of reprisals from making mistakes. According to Pfeffer and Sutton, fear "inhibits the ability to turn knowledge into action" (p. 121) and "fear creates a focus on the individual rather than the collective" (p. 126).

Evans (1996) argued that change represents the development of new knowledge and skills which increases stress and the fear of failure. Therefore, it is important to break the change initiative into small steps, to provide a supportive environment where it is safe to make mistakes, to praise stakeholders' efforts, and to encourage their input in the implementation process to determine their needs (Jellison, 2006; Jensen, 2000). It is also imperative to provide sufficient resources, training, and coaching during the initial implementation phase so that stakeholders develop the requisite skills and knowledge (Chenoweth & Everhart, 2002; Jellison, 2006; Knoster, Villa, & Thousand, 2000).

Frustration will result without the necessary resources, such as time and training, to develop the skills associated with an initiative, and anxiety will result without skills (Knoster, Villa, & Thousand, 2000). Senge (2006) argued that an insufficiency in resources inhibits developing personal mastery which is an essential component in continual growth and personal learning required for innovation. Senge (2000) explained

that “personal mastery is a set of practices that support people . . . in keeping their dreams whole while cultivating an awareness of the current reality around them” (p. 59).

Jellison (2006) related that Stage 3 in the change process represents a time when stakeholders make fewer mistakes and begin to feel more confident. During Stage 4, stakeholders become more optimistic, stop resisting the change initiative, and openly accept it. Jellison noted, “Organizational change, like individual change, requires extrinsic rewards in the early stages to keep employees going until they experience the rewards that are an inherent result of the new approach” (p. 75-76). Jellison suggested that during Stage 4 employees perceive benefits from the change process, and therefore, their attitudes toward the change initiative become more positive, and they are more intrinsically motivated. Jellison commented that Stage 5 represents the point when change becomes institutionalized. Senge (2006) and Jellison also noted that initiatives which require dramatic departures from normative practices often necessitate front-loading extrinsic incentives.

Instead of 5 phases, Lambert (2005) divided the implementation process into 3 phases which address leadership roles rather than the impact of change on teachers. Lambert defined the 3 phases which lead to sustainability as the instructional, transitional, and high capacity stages. Each phase requires an emphasis on different leadership roles and responsibilities. Lambert noted that effective leaders are knowledgeable in components of the initiative and are able to serve as instructional leaders who are able to teach about new practices, articulate beliefs, and build a shared

vision for change. According to Lambert, the principal's roles during the instructive phase are:

To insist on attention to results, start conversations, solve difficult problems, challenge assumptions, confront incompetence, focus work, establish structures and processes that engage colleagues, teach about new practices, and articulate beliefs that eventually get woven into the fabric of the school. (p. 63)

These findings supported the propositions of change theorists (Fullan, 2004; Senge, 2000, 2006). Lambert noted the importance of initiating conversations and challenging assumptions among stakeholders. Senge (2006) recommended reflective conversations to uncover mental models, assumptions, through opportunities for dialogue. According to Senge (2002),

During the dialogue process, people learn how to think together – not just in the sense of analyzing a shared problem or creating new pieces of shared knowledge but in the sense of occupying a collective sensibility, in which the thoughts, emotions, and resulting actions belong not to one individual, but to all of them together. (p. 75)

Senge (2006) emphasized the importance of fostering team learning in order to build a common understanding of the components of the initiative and developing positive relationships. According to Jensen (2000), brain research supports the importance of engaging learners in the meaning-making process and providing social learning opportunities. Fullan (2004) asserted that common knowledge creation and sharing is an essential component of the change process and that collaborative learning opportunities

help stakeholders make coherence and build shared bridges between past practices and those required for the new initiative.

Pfeffer and Sutton (2000) acknowledged the importance of team learning but contended that “fear and distrust . . . pervade too many workplaces” (p. 118). They noted,

To learn from others, one must be willing to admit that one has something to learn from others, one must be willing to admit that one has something to learn. In an organization full of fear, that is going to be difficult if not impossible. To turn knowledge into action, one must be willing to try something different, and such behavior risks error. There won't be much experimentation, much innovation, much learning, or much turning of knowledge into action in climates of fear and distrust. (p. 133)

Leadership that results in sustainability establishes accountability measures to monitor progress during the instructional phase (Chenoweth & Everhart, 2002; Jellison, 2006; Lambert, 2005). However, leaders must create a supportive, trusting environment in which making mistakes is considered a natural part of the learning process (Donaldson, 2006; Jellison, 2006; Pfeffer & Sutton, 2000). During the instructional phase, Lambert argued that effective principals should modify their role from assertive leadership in order to initiate the process and then transition gradually toward building leadership capacity.

According to Lambert (2005), the transitional phase is a time during which leaders foster teacher leadership capacity and engaged teachers in the problem-solving

and decision-making process. Lambert reported that “teachers often feel tempted to abandon the effort at this point – it seems too hard” (p. 64). Therefore, Lambert argued, it is imperative that:

The principal provides support by continuing the conversations, keeping a hand in the process (rather than accepting quick fixes), coaching, and problem-solving within an atmosphere of trust and safety. To navigate this phase successfully, the principal must engage in a strategic thought process, understanding where the school culture is going and when to pull back as teachers emerge as leaders. (p. 64)

In addition, Lambert noted that the transitional phase is “a time of epiphanies for both principals and teachers” (p. 64). A key component which increases teachers’ willingness to participate in the initiative is the principal’s willingness to be vulnerable. Lambert pointed out that “when teachers became aware that the principal didn’t claim to have all the answers, they actively increased their participation” (p. 64). Successful change agents realize that change is a process which requires their continual engagement and support rather than being a quick fix (Chenoweth & Everhart, 2002; Hall & Hord, 2006; Lambert, 2005).

Fullan (2001) asserted that the “principals’ actions serve to legitimate whether a change is to be taken seriously [by how they] support teachers both psychologically and with resources” (p. 83). Evans (1996) reminded leaders that visible and on-going administrative commitment to the change initiative is an essential change leadership component. Teachers are naturally skeptical that new initiatives will not persevere

through the change process if there appears to be limited or short term administrative commitment. According to Lambert (2005), the high capacity stage depicts a time in which principals encourage teachers to assume more prominent leadership roles and to initiate actions while the “principal focused on facilitation and co-participation rather than dominance” (p. 65). According to Lambert,

A leveling of relationships occurs as reciprocity develops between the principal and the teachers. Teachers find their voices, grow confident in their beliefs, and become more open to feedback. The principal no longer needs to convene or mediate the conversations, frame the problems, or challenge assumptions alone.

Principal and teachers begin to share the same concerns and work together toward their goals. (p. 65)

Whether leaders assume appropriate roles and responsibilities affects the potential success during the implementation process and determines the sustainability of an initiative. Therefore, leaders must be knowledgeable about the initiative in order to appropriately modify their roles and responsibilities according to the magnitude of the change process. Leaders must build a shared vision and moral purpose to promote willingness to endure initial challenges. Change leaders must focus on building trusting, supportive relationships and a safe environment where mistakes are an expected part of the change process. (Chenoweth & Everhart, 2002; Donaldson, 2006; Evans, 1996; Fullan, 1993, 2004, 2005; Hall & Hord, 2006; Hargreaves & Fink, 2004, 2006; Jellison, 2006; Kotter, 1996; Lambert, 2005; Marzano, Waters, & McNulty, 2005; Pfeffer & Sutton, 2000; Senge, 2000, 2006).

The review of the literature indicated that leaders must provide team learning opportunities for knowledge creation and sharing in order to make coherence between past practices and those associated with the change initiative. Leaders must be willing to acknowledge that change represents a sense of loss; therefore, they must be supportive of stakeholders and help them uncover mental models which may potentially thwart the change process. Structural changes must be made to provide the necessary resources of time, professional development, and on-going support to assure that stakeholders develop necessary skills to support the initiative. Skills must be sufficiently established to develop personal mastery so that stakeholders have the capacity for continual personal and team growth (Chenoweth & Everhart, 2002; Evans, 1993; Fullan, 1993, 2004, 2005; Jellison, 2006; Kotter, 1996; Knoster, Villa, & Thousand, 2000; Lambert, 2003, 2005; Senge, 2000, 2006).

Leadership for the 21<sup>st</sup> century requires change agents who are capable of developing a culture that is supportive of a professional learning organization. The complexities of the educational reforms required to meet the requirements of the 21<sup>st</sup> century necessitate second-order initiatives and require leaders to use systems thinking rather than a rational-structural paradigm (Evan, 1996; Fullan, 2005; Senge, 2000, 2006). Additionally, accountability issues associated with standards-based, high-stakes tests necessitate a new model which provides a framework for both social change required to foster a professional learning organization and educational reforms which promote alignment of curriculum to standards. The Jacobs model of curriculum mapping provides

a framework for systemic change focused on improvement in curricular alignment and provides a framework for building leadership capacity to promote positive social change.

### **Jacobs Model of Curriculum Mapping**

#### **Background and Potential**

The Jacobs model of curriculum mapping provides a framework for aligning curriculum to standards and fostering the development of a professional learning organization. The Jacobs model differs significantly from the earlier concept of mapping proposed by Fenwick English (1980). Jacobs expanded upon the earlier concept of mapping presented by English (Jacobs, 1993). English realized that the curriculum guides representing the intended curriculum did not necessarily represent the actual curriculum which was implemented by the classroom teachers. Therefore, English developed the concept of curriculum mapping as a means of identifying the implemented curriculum.

The format of the early curriculum maps could vary; however, English (1980) emphasized the importance of documenting “at least two constants content taught and time spent” (p. 558). The information was collected by a coordinator or evaluator by using surveys or interviews. The information compiled from the maps revealed “to a staff, principal, or supervisor what is actually being taught, how long it is being taught, and the match between what is being taught and the district’s testing program” (p. 599).

According to Hale (2008), the Jacobs model of curriculum mapping is an on-going process which involves documenting both the implemented curriculum of individual teachers and the collectively agreed upon intended curriculum. Jacobs (1997)

contended that although “teachers may work together in the same building for years, they usually have sketchy knowledge about what goes on in each other’s classrooms” (p. 3). Therefore, it is possible to unintentionally create curricular gaps and unnecessary redundancies which inhibit student learning (Hale, 2008; Jacobs, 1997; Udelhofen, 2005). Jacobs (1997) suggested that “if there are gaps among teachers within buildings, there are virtual Grand Canyons among buildings in a district” (p. 3). Furthermore, Jacobs contended that limited curricular communication among instructional levels is a causal factor in the development of unintentional curricular gaps and redundancies.

Marzano (2003) asserted that the discrepancies between the intended and implemented curriculum is a prominent school factor which impedes student achievement. Enormous discrepancies occur, according to Schmoker and Marzano (1999), “even when common, highly structured textbooks are used...[because] teachers make independent and idiosyncratic decisions regarding what should be emphasized, what should be added, and what should be deleted” (p. 19). The lack of curricular coherence and poor performance on international tests provides the rationale for requiring states to measure student achievement using high-stakes, standards-based tests and for holding schools accountable if they do not meet Adequate Yearly Progress (Guilfoyle, 2006; Frequently Asked; NCLB; Scherer, 2001; Schmoker & Marzano, 1999).

The Jacobs model provides a framework for aligning the curriculum to standards and making the curriculum of each teacher visible. According to Hale (2008), Diary Maps represent an individual teacher’s monthly implemented curriculum. Although mapping formats may vary, the basic elements in a curriculum map include identifying

the alignment among the content, skills, and assessments students experience within a given month with state standards (Hale, 2008; Jacobs, 1997; Udelhofen, 2005). Jacobs noted, “The point is not to teach to the months but to use the months as a common reference to plot the classroom curriculum” (p. 9).

Consensus and Essential Maps are collaboratively developed maps which represent the intended curriculum (Hale, 2008; Jacobs, 2004b). Hale (2008) noted that Consensus Maps are also referred to as Master Maps, Collaborative Core Maps, and Benchmark Maps (p. 283). A Consensus Map is a school-based map, and an Essential Map is a district-wide map representative of the intended curriculum; according to Hale (2008), both types of maps are “designed by collaborative agreement” (p. 283), and the intent of the different types of maps is to align the curriculum with the grade level state and district standards. According to Udelhofen (2005), curricular gaps and redundancies become more apparent when teachers document and examine the implemented curriculum noted in monthly maps; therefore the mapping process improves the continuity within schools and among instructional levels. Jacobs (2004c) noted that as a result of the mapping process, “We are able to solve problems in school more effectively with accurate information that tells us what is going on in classroom life. In the past we often have communicated in meetings by referring to guidelines which have never reflected what actually happened” (para. 2).

According to mapping proponents, mapping in the 21<sup>st</sup> century comprises the development of calendar-based maps which are housed in Internet-based software systems (Hale, 2008; Jacobs, 2003; Kallick & Wilson, 2004). Jacobs (2004c) related that

advances in mapping technology afford educators with a mechanism for linking assessment within maps to assessment data bases and thereby provide immediate data concerning student learning trends. Furthermore, advances in mapping technology provide a mechanism for educators to upload lesson plans and download plans from colleagues within a district, nationally, and internationally. Jacobs (2004c) noted, “A common practice is the use of mapping for all professional development and building initiatives. In short, curriculum mapping is not ‘another trend;’ it is a critical 21<sup>st</sup> vehicle for solving problems and helping our learners.” (para. 4)

Kallick and Wilson (2004) asserted that mapping provides a means of “bringing what has previously been tacit to an individual to a more explicit public dialogue” (p. 83) and provides opportunities for organizational knowledge creation. However, they also pointed out that, “To articulate work and to share it with others require an environment that appreciates such efforts and that provide support, both to constructively criticize such efforts and to recognize exemplary work” (p. 93). For conversations based on generated maps to be meaningful, the information must accurately represent the implemented curriculum. Udelhofen (2005) emphasized that “the very foundation of curriculum mapping requires teachers to talk together about what they teach [and that] curriculum mapping creates an atmosphere of joint responsibility where all teachers believe that all students are our students” (p. 3). Establishing trusting relationships are an essential component in the mapping process. Therefore, it is important for leaders to emphasize the idea that maps are never used as an evaluation tool (Hale, 2008; Holt, 2004).

Curriculum maps are intended to be used for identifying curricular gaps, redundancies, misalignment of curriculum and assessments with standards, as well as to provide insights into the implement curriculum (Hale, 2008; Jacobs, 1997; Udelhofen, 2005).

The Jacobs model, according to Hale, consists of a seven-step review protocol to accomplish this goal: “collection of data, first read-through, small-group review, large-group comparison, immediate revision, research and development, and new review considerations” (p. 166). Reviews are conducted with a specific purpose in mind. Data that is collected for the review may include maps or other data sources. During the first read-through, individuals privately review the data and record notes based on the specific purpose. After the private review, a small-group is convened to share observations prior to the large-group comparison. During the large-group comparison, small-group findings are compared and discussed, and possible solutions are posed. The large-group collaboratively agrees to possible solutions. The large-group may decide upon an immediate solution or that additional research and development is required. If additional research and development is required, task force members are selected for this purpose. The review process is continuous, based on the implemented curriculum, and is responsive to curricular needs identified during collaboration (Hale, 2008; Jacobs, 2004a, 2004b; Kallick & Colosimo, 2009; Udelhofen, 2005). The curriculum mapping process is designed to become the hub for curricular discussions, collaboration, and decisions as well as for identifying job-embedded professional development opportunities (Hale, 2008; Holt, 2004; Jacobs, 2004a; Johnson & Lucas, 2008; Truesdale, Thompson, & Lucas, 2004).

## **Leadership Challenges**

The Jacobs model of curriculum mapping is not a quick fix; rather, it is a complex, continuous process. Hale (2008) noted that the Jacobs model of curriculum mapping represents a second-order change initiative for some districts and therefore poses several leadership challenges. Curriculum mapping proponents emphasized the importance of understanding the magnitude of change this initiative will represent for the school culture (Hale, 2008). Mapping proponents also emphasized the importance of forming a leadership planning team, composed of administrators and teachers, to receive prior training and knowledge of the initiative. Mapping proponents suggested that it might take a year of advanced preparations or prologue to adequately prepare for commencing a mapping initiative.

This prologue was designed to identify potential obstacles, formulate implementation and professional development plans, and develop knowledge and skills required to support colleagues (Hale, 2008; Holt, 2004; Johnson & Johnson, 2004; O'Neil, 2004; Truesdale, Thompson, & Lucas, 2004; Udelhofen, 2005). Holt (2004) stressed that an essential component in the prologue is for administrators to build teacher leadership capacity and to ensure that administrators and teacher leaders are fully trained in the mapping process and are collaboratively engaged in the development of implementation plans. Hale (2008) warned that inadequate preplanning often result in false starts and unnecessary challenges during early phases of the implementation process. Hale noted, "When a learning organization takes the time to conduct a prologue, it is more likely to be successful in institutionalizing curriculum mapping" (p. 30).

Crowther, Kaagan, Ferguson, and Hann (2002) observed that successful school reform “invariably involve principals and teachers in joint professional development activities” (p. 44). Collaborative learning between principals and teacher leaders communicates administrators’ commitment and support for a reform initiative as well as provides opportunities to build trusting relationships. Chance and Chance (2002) emphasized that “reform will not be realized unless people within the organization fully understand the change and believe that it is compatible to the mission and goals of the organization” (p. 199). Identifying the compatibility of a reform initiative within the culture of an organization means uncovering mental models, assumptions, which guide decisions and actions (Senge, 2006). Trusting relationships, commitment to a shared purpose, and collective learning and planning are essential components for building a culture conducive to reform (Donaldson, 2006; Fleming and Thompson, 2004; Seriovanni, 2005)

Structures within the Jacobs model require the fostering of teacher leadership and a collegial culture. Unfortunately, according to Barth (2002), traditional constructs assume that leadership is the responsibility of administrators, rather than teachers, and therefore, this leadership inhibits rather than fosters a climate which is conducive to teacher leadership. Fostering a learning-leading culture requires administrators to be cognizant of the influence of informal teacher leaders and a willingness to become parallel leaders (Crowther, Kaagan, Ferguson, & Hann, 2002). Informal leaders are teachers who are acknowledged by their colleagues as exhibiting credibility, expertise, and the capability of building positive relationships (Katzenmeyer & Moller, 2001;

Patterson & Patterson, 2004; Reeves, 2006). Reeves (2006) contended that the impetus for reform “does not stem from a rational consideration of evidence [as to why the change is important], but from an emotional attachment to a trusted colleague” (p. 33). Barth (2006) asserted that the presence of a collegial culture is a precondition for meaningful reform and sustainability of change initiatives.

The Jacobs model of curriculum mapping provides a framework for developing a learning-leading organization focused on improving student achievement. However, the success of this initiative is contingent upon the ability of leaders to identify the magnitude of change and to appropriately adjust their leadership roles and responsibilities. Leaders need to be knowledgeable in the curriculum mapping initiative in order to develop a shared vision and moral purpose for change. Leaders need to uncover mental models and organizational barriers which may thwart the initiative. They must provide sufficient resources and team learning opportunities to develop personal mastery in the mapping process. They must be willing to become collaborative learners and build leadership capacity among teachers. According to Udelhofen (2005), “Districts that have experienced the highest success rate with curriculum mapping have highly visible, engaged leadership at all levels. No one person can lead this work” (p. 12). Jacobs (2004c) contended that “success in mapping is defined by two specific outcomes: measurable improvement in student performance in the targeted areas, and the institutionalization of mapping as a process for ongoing curriculum and assessment review” (p. 2).

### **Review of Similar and Differing Methodologies**

The number of studies focused on curriculum mapping is limited. Of the 10 studies reviewed by the researcher, one study related to perceptions of mapping technology, two studies analyzed the impact of curriculum mapping on student achievement, two studies identified mapping as an effective strategy leading to improvement in student achievement, one study examined comparative implementation processes, and four studies examined perceptions of the value of curriculum mapping. One researcher conducted a phenomenological study, two researchers conducted a mixed methods study, one study employed a 3-phase Delphi process using an on-line bulletin board to collect data, and three researchers conducted a quantitative study that collected data from surveys. The two studies designed to determine the impact of curriculum mapping on student achievement were quantitative studies that compared achievement scores of students. Only one researcher used case study methodology.

Habegger (2007) was the only study that employed case study methodology. The purpose of this case study was to explore perceptions of the principal's role in successful schools. However, curriculum mapping was not the primary focus of the study. The study presented curriculum mapping as an effective strategy used by principals for improving student achievement. Participants for Habegger's case study included three Ohio Schools of Promise. Data was collected from interviews with three elementary principals and three focus groups sessions with a total of 15 elementary teachers. Additional sources of data included document analysis and data collected from the researcher's observations during visitations at the participating schools. The coding

process included determining the frequencies of themes from a holistic perspective. Strategies used to improve the quality of the study included triangulation, member checking, and peer debriefing. Thirteen themes emerged among the three schools concerning the perceived relationship between the principal's roles and student achievement. As it relates to curriculum mapping, the principals provided teachers with common planning times, principals actively engaged teachers in usage of mapping information and used a team approach to formulate data informed decisions, and principals focused on the alignment of curriculum with the standards, and actively set goals as well as monitored attainment of goals.

Highstreet (2007) conducted a phenomenological study with the purpose of describing the essence of curriculum mapping from the perspective of 10 teachers representing three instructional levels, including elementary, middle school, and high school teachers. Highstreet used a criterion sampling procedure to identify the participants for the semi-structured interviews. Six themes emerged from this study including: (a) curriculum mapping as an organizational tool, (b) curriculum mapping as advanced through the use of technology, (c) mapping as a catalyst for developing professional learning communities, (d) the importance of administrative leadership, (e) the importance of leadership from a curriculum mapping leadership team, and (f) the importance of provisions of time for mapping purposes. Findings from additional curriculum mapping studies are discussed in the following section of this review titled *Summary of Critical Curriculum Mapping Studies*.

The purpose of the researcher's study was to explore teachers' and administrators' perceptions of leadership roles and responsibilities and the impact of leadership on teachers' perceptions of the sustainability of the curriculum mapping initiative. However, there were gaps in the literature relating to curriculum mapping and perceptions of leadership roles and responsibilities; therefore, the researcher expanded the search to include studies focused on leadership for organizational change. Seven additional leadership studies were read. Each of the studies provided change leadership factors impacting teacher perceptions toward a reform initiative. Of these studies, two researchers used case study methodology, one researcher conducted action research, two researchers conducted quantitative studies in which data was collected using surveys, one study was a mixed-methods study, and one study was a qualitative study, based on information collected from semi-structured interviews.

Colbaugh (2001) and Anderson (2009) conducted studies based on case study methodology. The purpose of Anderson's study was to explore teacher perspectives of personal change as a result of a successful change initiative. Anderson collected data from focus group and individual interviews as well as written narratives. Anderson compared teacher perceptions with propositions within change theory. Inductive and deductive analysis was used to identify themes. Inductive findings resulted in themes associated with teacher empowerment, building culture, and time. Deductive themes included those associated with new learning, changes in assumptions and beliefs, and changes in practice. Results from Anderson's study suggested that leadership for

successful change initiatives necessitates establishing a culture of shared ownership and teacher empowerment.

The case study conducted by Colbaugh (2001) examined leadership factors influencing teacher motivation and sustainability of a comprehensive change initiative that resulted in improved student achievement. Data was collected from semi-structured interviews with 30 teachers at one elementary school. Additional data sources included observations and field notes. Data coding included identification of concepts, organizing discrete concepts into categories, defining properties and dimensions within the categories and determining explanatory themes. The findings supported cohort-based approaches to learning among teachers and administrators.

Wood (2007) and Matier (2007) used grounded theory as a basis for their studies. However, Matier conducted a mixed methods study that included the use of a survey and interviews while Wood based data collection on semi-structured one-on-one interviews. The purpose of Matier's study was to examine the link between school culture and teacher satisfaction. In addition to collecting survey data from an instrument identified as the *School Culture Inventory*, Matier interviewed eight teachers and five principals representing three reform models. Results from the interviews and survey data suggest that reform models that address school improvement issues positively impact teacher satisfaction. Wood's study sought to explore teachers' perceptions as a result of participation in school reform initiatives targeting pedagogy.

Wood (2007) used purposive sampling procedures to identify participants which included 12 elementary teachers from eight schools. The data collected from semi-

structured one-on-one interviews were analyzed using open coding, axial coding, and selective coding. In addition to teacher's perceptions related to classroom responsibilities, findings suggested organizational and structural factors that impacted teacher commitment in school reform. Organizational factors that impacted commitment included principal leadership, relational trust, and levels of collaboration available to teachers. Structural factors included the provision of resources and support. Inadequate support and resources resulted in teacher perceptions of being overwhelmed by the reform initiative; however, adequate support and resources resulted in positive perceptions of reform challenges.

Jackson (2006) conducted an action research in which data was collected from archival documents. Jackson used systems theory as a conceptual framework for analyzing change leadership factors. Analysis strategies included hermeneutical and phenomenological processes to identify themes and subthemes. Findings resulted in 15 leadership themes and emphasized the necessity of comprehensive, long-range planning based on a systems approach rather than uncoordinated individual efforts. The findings suggested reform necessitates that leaders increase leadership capacity, establishing safe and supportive conditions, and improve communication.

Borda (2007) examined leadership factors for institutionalizing a change initiative. Borda collected data from 31 school leaders using a 6-point Likert scale survey which included open-ended questions. Borda's survey was based on nine factors identified by Harvey (2001) as components for institutionalizing change. Findings suggest that leadership factors that support sustainability include promoting a shared

vision, building consensus, monitoring progress, providing on-going resources, and engaging and developing talents of stakeholders. According to Borda, a key component of change leadership is empowerment of others.

### **Summary of Critical Curriculum Mapping Studies**

The literature provided evidence of studies that were conducted to determine the effectiveness of mapping on improving student achievement (“A Study of Effective,” 2000; Kercheval, 2001; “Report of the Panel,”2001; Shanks, 2002). Shanks compared the academic achievement of students from classes that had been mapped with those students from classes that had not been mapped. The findings indicated that mapping had a positive effect on student achievement. Participating schools for the Ohio study (Kercheval, 2001), the Williams Middle School study (“Report of the Panel,”2001), and the Virginia study (2000) were selected based on improved student achievement. Kercheval employed a 3-phase Delphi process in which data was collected from participants’ on-line bulletin board discussions concerning effective practices resulting in improved student achievement. The Williams Middle School and Virginia studies collected data from surveys and interviews with administrators and teachers to determine their perceptions of effective practices to improve student achievement. Each study identified curriculum mapping as an effective practice for improving student achievement.

Fairris (2008) also conducted a study to determine the impact of curriculum mapping on achievement for students in grades 6-8 grade in mathematics and literacy. Fairris used participants from 40 Arkansas school districts who were chosen using a

stratified random sampling procedure. Districts were subdivided into two groups according to the degree to which curriculum mapping had been implemented. The results from a *Degree of Implementation* survey were used to determine if districts had high or low levels of implementation. A Chi-Square Test of Independence sought to discover if a relationship existed between the degree of mapping implementation and performance level among students. Findings indicated a significant relationship between high compliance districts and the number of students scoring at Advanced/ Proficient levels on tests in mathematics and literacy.

Although the purpose of the Williams Middle School study (2001) was not focused on leadership practices, the report described a school culture in which teachers frequently collaborate to formulate curricular decisions based on mapping and other data sources and described the principal's style of leadership as collaborative. The Jacobs model of mapping was explicitly identified throughout the report as having a positive influence on student achievement and providing a focus for curricular alignment with standards and teacher collaboration. The Jacobs model was institutionalized within this school district.

Lucas (2005) conducted a mixed methods study to determine teachers' perceptions of mapping as an effective practice for alignment of curriculum and planning. Data were collected using a Likert-scale survey and focus group interviews. Findings indicated positive perceptions of curriculum mapping as a method for aligning curriculum to standards and for long range planning. However, the findings suggested that the initiative was not perceived as effective for short range planning.

In yet another study, Wilansky (2006) compared teachers' perceptions of mapping in two school districts which utilized an Internet-based mapping software program with two school districts which did not utilize an Internet-based software program. Findings from this quantitative study indicated that teachers perceived curriculum mapping as an effective method to improve their districts' instructional practices for aligning curriculum to standards, collaboration, and assessments. Data collection included the use of a survey. Huffman's (2002) quantitative study was conducted to explore middle school teachers' perceptions of the curricular value of curriculum mapping. Huffman's findings were based on survey responses from 55 teachers in one middle school. Huffman's findings concurred with those of Wilansky (2006). Both studies indicated that teachers' perceived mapping as a valuable curricular tool for aligning curriculum with standards. Huffman's findings indicated that a concern raised by teachers was that insufficient time provisions had been provided by the administration. Participants in Huffman's study did not perceive mapping as an administrative monitoring tool.

Beans (2006) conducted a mixed methods study which compared the implementation process of the Jacobs model of curriculum mapping in two high schools. Beans (2006) was primarily interested in determining the factors which influenced teachers' acceptance of curriculum mapping. The study sought to explore the following themes: introduction to mapping, time allotment, training, resources, overall feelings, attitudes about leadership, and confidence level with mapping. A cross-sectional online survey was distributed to a census of high school teachers. The survey was constructed using a 5-choice Likert scale design. One-on-one interviews with eight teachers and five

administrators were used to corroborate survey findings as well as add additional details. Bean (2006) attributed the successful implementation of mapping in one school to a bottom-up leadership (School A) approach and the failure of the mapping initiative to a top-down approach (School B). However, descriptions of leadership in School A depicted a knowledgeable administrator who actively supported teacher efforts and provided training. School B was led by an administrator who was hired after the initiative had been in place. This administrator was not knowledgeable about the initiative and was not able to adequately support teacher efforts. Although this study did not study perceptions relating to leadership roles and responsibilities during implementation, findings supported the propositions of change theorists and those findings espoused by mapping proponents.

### **Summary**

Accountability issues associated with the NCLB Act are increasing interest in methods to effectively align curriculum to standards used to measure student achievement. Studies indicate that the Jacobs model of curriculum mapping is perceived as an effective practice for aligning curriculum, improving teacher collaboration and planning, and resulting in improvements in student achievement. Although Beans (2006) conducted a study that compared the curriculum mapping implementation process at two high schools, the study did not focus on leadership imperatives. Studies have been conducted to identify change leadership factors impacting perceptions of sustainability and a reform initiative. However, there is a gap in the literature pertaining to leadership

imperatives for implementing the Jacobs model of curriculum mapping and the impact of leadership on the sustainability of this initiative.

One of the major themes found in the literature review is that the Jacobs model of curriculum mapping is a complex process which represents a second-order change initiative for some school cultures. Second-order change often negatively impacts school cultures. Mapping proponents and change theorists indicated that leadership roles and responsibilities during a second-order change are different than those leadership roles that occur during a first-order change. The success of a second-order initiative will be greatly influenced by the leadership; however, there is a deficit in the literature pertaining to studies of teachers' and administrators' perceptions of leadership roles and responsibilities during the implementation of the Jacobs model of curriculum mapping. This study seeks to address the void.

The magnitude of change represented by the Jacobs model of curriculum mapping justifies using change theory as a conceptual framework. Therefore, propositions related to change theory and the Jacobs model of curriculum mapping were used to conduct this multiple case study design. Theoretical propositions in change theory emphasize the importance of developing a shared vision and moral purpose for the change initiative. Large scale reform necessitates the use of systems thinking to monitor and modify implementation plans. Sufficient and on-going resources and professional development are required to develop personal mastery in skills associated with the reform initiative. Large scale change results in a sense of loss and necessitates the use of incentives and leadership support.

Change representative of a second-order magnitude necessitates that leaders have comprehensive knowledge of the change initiative and the processes. Effective change leaders build trusting relationships and promote collegial interaction and provide opportunities for teacher ownership in the change process. Propositions within the Jacobs model of curriculum mapping include building teacher leadership capacity, fostering the development of professional learning communities, alignment of curriculum with standards, the development of maps representing the intended and implemented curriculum, and data-informed decisions based on information provided within maps and Internet-based mapping software data-bases (Chance & Chance, 2002; Chenoweth & Everhart, 2002; Donaldson, 2006; Evans, 1996; Fullan 2001, 2004, 2005; Hale, 2008; Hall & Hord, 2006; Hargreaves & Fink, 2006; Holt, 2004; Jacobs 1997; 2004c; Kallick & Wilson, 2004; Knoster, Villa, & Thousand, 2000; Marzano, Waters, & McNulty, 2005; Schlechty, 1990; Senge, 2006; Truesdale, Thompson, & Lucas, 2004; Udelhofen, 2005).

### Section 3: Research Method

#### **Introduction**

The traditional role of the school, mode of instruction, and authority hierarchies were designed to meet the needs of an industrial society (Schlechty, 1990; Walker, 2002). Societal demands in the 21<sup>st</sup> century challenge the traditional role of schools and authority hierarchies. Schlechty (1990) asserted that administrators must view their role as that of “leaders of leaders, creators of conditions in which other leaders thrive, and developers of leaders” (p. 43). The Jacobs model of curriculum mapping provides a framework for social change which builds teacher leadership capacity and fosters collegial relationships focused on addressing curricular issues which might inhibit student learning (Hale, 2008; Jacobs, 1997; Udelhofen, 2005). For traditional districts, the Jacobs model of curriculum mapping will challenge traditional hierarchies and represent a large-scale reform initiative (Hale, 2008).

Fullan (1993) contended that large-scale change initiatives often fail because leaders do not appropriately modify their roles to facilitate change. Fullan (1993) noted, “Reform is not just putting into place the latest policy” (p. 7). He also noted, “It means changing the cultures of the classrooms, the schools, [and] the districts” (p. 7).

Therefore, through this study, I sought to understand how administrator and teacher perceptions of leadership roles and responsibilities were affected during the implementation of a curriculum mapping initiative and how these perceptions affected sustainability of this initiative. Therefore, a case study research design was selected for this study because the methodology of case study design encourages data collection from

multiple sources of evidence and multiple perspectives in order to gain a deeper understanding of the phenomenon that is under investigation.

Section 3 will describe the research approach and design that was employed for this study and provide a rationale for conducting a qualitative multiple case study. In relation to the methodology of case study, the setting and participants will be described as well as the role of the researcher. The data collection plan will provide a description of the data collection instruments as well as the types of data which were collected and the protocols that were developed for each data source. This section also presents the data analysis plan as well as the strategies that were selected to enhance the validity and reliability of this study. Ethical issues related to this study are also presented.

### **Restatement of Research Questions**

The purpose of this multiple-case study was to examine administrator and teacher perceptions of leadership roles and responsibilities during the implementation of the Jacobs model of curriculum mapping. The study sought to answer three research questions:

1. How does the implementation of the Jacobs model of curriculum mapping impact administrators' perceptions of leadership roles and responsibilities?
2. How does the implementation of the Jacobs model of curriculum mapping impact teacher's perceptions of leadership roles and responsibilities?
3. How does leadership during the implementation of the Jacobs model of curriculum mapping impact teachers' perceptions in relation to the sustainability of this initiative?

### **Research Design**

I determined that a qualitative approach and a multiple case study design were appropriate for answering the research questions. I sought to explore how the implementation of the Jacobs model for curriculum mapping impacted administrator and teacher perceptions concerning leadership roles and responsibilities in relation to this initiative. Understanding the perceptions of stakeholders necessitated collection of data from interviews. Although interviews are conducted as a data source for phenomenological, ethnographical, and grounded theory studies, I did not deem the usage of these qualitative designs as appropriate for this study.

Phenomenology attempts to understand the essence of a phenomenon, and data are collected from interviews with a maximum of 10 participants (Creswell, 1998). A study based on phenomenology was not an appropriate tradition because I was not attempting to explore the essence of curriculum mapping within Wards Mill School District #4 and the number of participants in a phenomenological study would be insufficient to explore perceptions about the implementation process within three instructional levels and within one administrative unit. Data collection for a study based on a grounded theory tradition encompasses a larger pool of participants, approximately 20 to 30 individuals. Although the number of participants within a grounded theory tradition would be more appropriate for understanding administrator and teachers perceptions within Wards Mill School District #4, the purpose of a study based on a grounded theory design is to generate a theory (Creswell, 1998). However, even though

this study developed a theoretical proposition concerning leadership imperatives for implementing a curriculum mapping initiative, the case study offers a richer design due to the use of multiple sources of evidence. For this study, a number of documents were collected that provided strong support for the interview data. Therefore, a grounded theory tradition was rejected for this study. The purpose of a study based on an ethnographic design is to describe and interpret a culture, but interpreting the culture of Wards Mill School District #4 was not the purpose of this study; therefore, ethnography was not considered for this study (Creswell, 1998).

Yin (2003) asserted that case studies are appropriate for answering “how” and “why” questions (p. 22). Case studies are also appropriate for studies which seek to understand complex issues or phenomenon (Stake, 1995). Merriam (1998) contended that a “case study is a particularly suitable design if you are interested in process . . . [which can be defined in terms of] monitoring the extent to which the treatment or program has been implemented” (p. 33). Furthermore, case studies are employed to answer research questions that require “in-depth data collection involving multiple sources of information rich in context [that has been bounded by time and place]” (Creswell, 1998, p. 61).

At the time when this study was conducted, Wards Mill School District #4 was in the process of implementing curriculum mapping as a K-12 initiative. Examining how Wards Mill District #4 teachers and administrators perceive leadership roles and responsibilities during the implementation process and how leadership impacts perceptions of sustainability necessitated collecting data from three instructional levels

and one administrative unit. Each of these instructional levels represented one case or unit of analysis. Therefore, data was collected to discover teachers' perceptions at the (a) elementary level, (b) junior high school level, and (c) high school level. Understanding the complexities of perceived leadership roles and responsibilities during the implementation process also necessitated collecting data from those administrators responsible for providing leadership. Therefore, a fourth case included administrators from each of the three instructional levels as well as unit office administrators. A multiple case study design was selected to answer research questions involving more than one unit of analysis (Creswell, 1998; Yin, 2003). Exploring the leadership perceptions of participants in four cases necessitated the use of a multiple case study design.

A case study is bounded by time and place (Creswell, 1998; Yin, 2003). This study examined administrator and teacher perceptions concerning the impact of the Jacobs model of curriculum mapping on leadership roles and responsibilities. It also examined administrator and teacher perceptions concerning the relationship between leadership during the implementation process and the sustainability of the curriculum mapping initiative. Therefore, this study was bounded by place, which was the Wards School District #4. The implementation of mapping in this district was a staggered multi-year process in which the number of years that participants were engaged in the process differed among the instructional levels. This district was engaged in the implementation process for approximately five years. This study was bounded by the number of years each case had been engaged in the implementation process. Data were collected to

examine the implementation process within each case in order to provide descriptive, chronological information.

### **Researcher's Role**

I was a teacher leader given the responsibility of serving as the district curriculum mapping coordinator and consultant during the 2006-2007 and 2007-2008 school years. While serving as the district curriculum mapping coordinator/ consultant, I was responsible for scheduling and facilitating professional development sessions for K-12 teachers and had limited contact with administrators at all levels. During the 2008-2009 school year, I was given the responsibility of serving as a science curriculum developer and resource teacher at the junior high school. Although I continued to have curriculum mapping responsibilities during the 2008-2009 and 2009-2010 school years, my responsibilities were primarily to update Internet-based software account files. District level responsibilities provided me with a unique opportunity to develop relationships between employees within each case.

I also reflected a postpositivist paradigm throughout the implementation of this study, due to my assumptions relating to the nature of reality (ontology), my role in data collection (epistemology), the selected methodology, and the products which resulted from this study. According to Hatch (2002), postpositivist researchers contend that “reality can be approximated but never fully apprehended [and] are critical realists who subject truth claims to close critical scrutiny in order to maximize chances of apprehending reality” (p. 14). The opportunity of working with district employees led me to conclude that the reality of how participants perceive leadership during the

implementation process can only be approximated. Some participants expressed positive opinions concerning mapping, others remain skeptical, and others were openly hostile.

Epistemology relates to how the researcher views his or her role in relationship to the knowledge which can be obtained. Hatch (2002) stated that postpositivist researchers “seek to maintain an objective position in relationship to the phenomena they are studying...and view themselves as data collection instruments” (p. 14). Research techniques are employed to ensure that empirical data is used as a basis for findings rather than the researcher’s impressions (Hatch, 2002). It was my contention that objectivity must be maintained in order to approximate the reality perceived by participants within each case; this objectivity necessitated the use of rigorous data collection procedures in an attempt to base findings on data rather than impressions.

Hatch (2002) related that methodologies utilized by postpositivists are focused on “capturing participant perspectives but in rigorously disciplined ways” (p. 15). One of the data collection sources I used to discover participant’s perspectives included interviews. Information gathered during the interviews was analyzed using rigorous procedures, and findings were interpreted using a theoretical proposition developed in relation to the conceptual framework (Yin, 2003) and to pertinent information in the research literature relating to curriculum mapping. Hatch (2002) noted, “Knowledge forms produced in [the postpositivist] paradigm include analytic generalizations. . . . [which] are induced from systematic analysis of data that take the form of searches for patterns” (p. 15). Generalizations from this study were based on a single-case analysis of

multiple data sources followed by a cross-case analysis to identify common patterns and themes (Creswell, 1998; Yin, 2003).

### **Data Collection Instruments and Plan**

Yin (2003) noted that the six most common source of evidence used in case studies include “documentation, archival records, interviews, direct observation, participant-observation, and physical artifacts” (p. 85). With the approval from the gatekeepers who were district administrators, this study included four of these six data sources, including documents, archival records, artifacts, and interviews. Data from focus group and one-on-one interviews occurred from February 5 to August, 13, 2009. Data from unobtrusive documents spanned five school years from 2005-2006 through portions of the 2009-2010 school years, and these data were collected from January, 2009 to January, 2010.

Hatch (2002) contended that unobtrusive data collected from documents can be “powerful indicators of the value systems operating within institutions [which have been created to provide a] written record of official activity within the institution [and] can provide a behind-the-scenes look at institutional processes [as well as] give a researcher a sense of history related to the contexts being studied” (p. 117). Yin (2003) also noted that documents may include items such as agendas, memoranda and other communiqués, written reports of events, internal records, and administrative documents.

### **Unobtrusive Data**

**Archival documents.** Administrative documents, such as School Improvement Plans (SIP) and District Improvement Plans (DIP), were examined to identify references

to curriculum mapping. Yin (2003) asserted that a theoretical proposition developed in relation to the conceptual framework can be used to guide data collection and analysis. Therefore, the SIP and DIP documents were examined to provide insights into *action plans* for curriculum mapping (Knoster, Villa, & Thousand, 2000); *shared vision* for mapping (Knoster, Villa, & Thousand, 2000; Senge, 2000; 2006); *moral purpose* for mapping (Fullan, 2004; 2005); *systems thinking* (Fullan, 2005; Senge, 2000); and *resources* (Knoster, Villa, & Thousand, 2000). Professional development agendas and quarterly reports were examined using the theoretical proposition for this study as well as to explore evidence of *personal mastery* (Senge, 2000), *team learning* (Senge, 2000), and *making coherence* (Fullan, 2004). Email correspondence and memoranda were also collected.

Potentially significant data were also collected from the 2006-2007 and 2007-2008 *Curriculum Mapping Needs and Goals Survey*. Each survey was developed by the researcher using School Center software. Permission to distribute the end-of-the-year survey was obtained from the assistant superintendent of curriculum, and the survey was distributed to K-12 teachers by the technology department director using in-district email lists. A report of survey findings was prepared by the researcher and submitted to district principals and unit office administrators during June of 2007 and 2008.

The purpose of the *Curriculum Mapping Needs and Goals Survey* was to provide teachers with an outlet to voice their concerns and express opinions relating to the implementation of curriculum mapping initiative. The survey also provided a means of monitoring the implementation process and provided information which could be used to

develop and/or modify implementation plans during the next school year. The 2006-2007 *Curriculum Mapping Needs and Goals Survey* was composed of 16 items based on propositions espoused by Knoster, Villa, and Thousand (2000) who contended that sustainable change occurs if stakeholders have a *shared vision*, acquire necessary *skills*, are provided with *incentives* and necessary *resources*, and have a clearly communicated *action plan*. The survey included six multiple choice items, five of which had optional comment areas; seven forced-choice Likert scale items; two demographic items; and an open-ended item which provided participants with an opportunity to express concerns or opinions.

Prior to distributing the survey, a judgmental sampling of K-12 teachers was used to pilot the survey, and the survey was sent to the national curriculum mapping consultant that had been helping the district, and the instrument was modified, based on their input (Bell, 2005; Doyle, 2007; Fogelman, 2005; Walonick, 2007). Data were collected for a total of 12 calendar days. Survey data were downloaded into a Microsoft Excel document on the researcher's password protected computer.

Survey responses were anonymously submitted to the technology department on a voluntary basis. Demographic information provided a means of identifying the number of respondents representing each of the three instructional levels and their number of years of experience. Eighty-three survey notices were sent to elementary teachers, and 35 teachers responded, providing a 42% return rate. Forty-two surveys were sent to junior high teachers, and 19 teachers responded, providing a 45% return rate. Sixty-

seven surveys were sent to high school teachers, and 24 teachers responded, providing a 36% response rate.

Data were separated into the three instructional levels, and descriptive statistics were used to analyze the quantitative data from the multiple choice and Likert scale items. Findings were presented in tables and bar graphs. Qualitative data generated in the optional comment areas were inductively analyzed to identify emerging themes and patterns. The survey results were presented in a table that described teachers' open-ended responses and a table that presented an overview of time allotted for professional development opportunities at each grade level.

Fourteen of the original 16 items in the 2006-2007 *Curriculum Mapping Needs and Goals Survey* were included in the 2007-2008 version of the survey. Two of the original items were omitted because they were no longer applicable. The remaining fourteen items were either presented verbatim or in slightly modified versions of the items in the 2006-2007 survey. The original items were slightly modified to more accurately portray current mapping progress. For example, the words "once created, maps" in the 2006- 2007 survey were omitted in the 2007-2008 survey because maps had been developed. Although some of the questions were slightly modified, data which were collected could be used to compare teachers' perceptions of mapping between the two years and thus provided trend data.

The 2006-2007 *Curriculum Mapping Needs and Goals Survey* included six additional items to monitor the implementation process during the 2007-2008 school year. Fullan (2001) contended that the principal's actions serve to legitimate whether a

change is to be taken seriously [by how they] support teachers both psychologically and with resources” (p. 83). Due to comments made during the 2007-2008 professional development sessions, three items were added to the 2007-2008 survey to gauge teachers’ perceptions of the principal’s support for mapping, knowledge of connections between the school improvement plans and mapping, and their ability to develop a vision for how mapping would be used to improve student achievement. Another optional open-ended response question elicited teachers’ perceptions about potential barriers which might inhibit the sustainability of the curriculum mapping initiative. The fifth item was added to ascertain the approximate time required to modify a previously developed map. The sixth item was added as a means of determining which mapping related activities occurred during the early release days designated for mapping.

Sixty-seven surveys were sent to the high school teachers during May, 2008, and 40 teachers responded which resulted in a 60% return rate. The high school return rate for 2007-2008 was greater than the 36% return rate for the 2006-2007 school year. Return rates at the junior high and elementary school levels were similar between the two years. Forty-two surveys were sent to the junior high school teachers, and 17 teachers responded, which represented a 41% response rate. The 2006-2007 response rate at the junior high school level was 45%. Eighty-two surveys were sent to the elementary school teachers, and 37 teachers responded, providing a 45% response rate. The 2006-2007 response rate at the elementary school level was 42%.

Descriptive statistics were used to analyze quantitative data results, using the cross tabulation option in the Statistical Package for the Social Sciences 15.0 (SPSS).

Findings were represented in tables and graphs. Qualitative data was inductively analyzed to identify emerging concepts, themes, and patterns. A single case analysis was followed by holistic interpretations which included memorable teacher quotes. The 2007-2008 *Curriculum Mapping Needs and Goals Report* also includes tables of teachers' open-ended responses.

Another source of relevant data included quarterly reports. During the 2007-2008 school year, I was required to submit quarterly reports relating to professional development sessions. These reports included tables of open-ended responses to evaluation questions; tables and graphs representing Likert scale item responses; Strategic-Measurable-Achievable-Relevant-and-Time Bound (SMART) goals; samples of collaborative work; agendas; and attendance logs. One report also contains anonymously generated teacher journal entries, digital images of collaborative activities, and professional development time logs.

**Artifacts.** Hatch (2002) stated that “artifacts are objects that participants use in the everyday activity of the contexts under examination” (p. 117). Pertinent artifacts, such as maps housed in the Internet-based system, were examined to determine if teachers had developed skills required for *personal mastery* (Senge, 2000). The Internet-based system houses maps for multiple years. Therefore, maps were retrieved to compare changes in the number, type, and quality of maps within the system for each instructional level.

**Archived records.** Yin (2003) indicated that “archival records can be used in conjunction with other sources of information” (p. 89). Pertinent records included usage

logs housed within the Internet-based system that indicated the number of maps which were generated per school and identified the last date that maps were modified. Internet-based records were stored for multiple years and thus provided a source of trend data. Hatch (2002) asserted that unobtrusive data collected from documents, records, and artifacts can be useful to triangulate findings.

### **Interviews**

Yin (2003) stated that “one of the most important sources of case study information is the interview” (p. 89) [because information is] reported and interpreted through the eyes of specific interviewees, and well-informed respondents can provide important insights into a situation” (p. 92). This study included both focus group and one-on-one interviews. Focus group interviews were conducted with participants from each of the three instructional levels. One-on-one interviews were conducted with participants from each of the four cases. Yin also noted that adherence to strict protocols in data collection enhances the validity and reliability of the study. Therefore, the protocols that were followed in conducting the focus group and individual interviews for this study are described below as well as how the oral questionnaire that was used to conduct the interviews was designed.

**Focus group interviews.** Three focus group interviews were conducted at the outset of the study, one for each instructional level. Focus group interviews “can generate a lot of data in a relatively short period of time” (Hatch, 2002, p. 132). However, Hatch (2002) warned that “too much flexibility ...could lead to interview sessions that produce little useful data on the topic at hand” (p. 132). Hatch (2002) also

suggested that “not all participants will feel comfortable and secure speaking up in group settings....some may be reluctant to be candid...some will be reticent about speaking at all....[which] may lead to findings that are biased in the direction of those who talk more or are more assertive in making their points” (p. 132). Lynn (Canter, 2005) suggested that using a structured activity format for focus group interviews might help to ensure that the perspectives of all participants are obtained.

I used a semi-structured activity format to obtain rich data from the focus group interviews. A focus group interview lasted approximately 50 to 60 minutes. I served as the facilitator. The interview was also recorded and transcribed. The focus group interviews were conducted in a mutually agreed upon location. Since I had been assigned to the junior high school during the 2008-2009 school year, junior high school participants indicated they preferred that the focus group interview be conducted in the my classroom. Focus group participants from the elementary and high school levels preferred a different location; therefore, focus group interviews conducted with the elementary and high school participants occurred in an upstairs meeting room at a local establishment.

Hatch (2002) suggested that “preliminary focus group work ...often lead to helping qualitative researchers develop individual open-ended interviews” (p. 133). The purpose of conducting the focus group sessions at the outset of the study was two-fold. One purpose was to explore participants’ perceptions about the barriers which might inhibit sustainability of the curriculum mapping initiative. This information provided me with insights about context related perceptions of mapping. This information, combined

with information from other data sources, was used to refine the one-on-one teacher interview protocol in order to collect more targeted information to answer the research questions. Focus group participants also provided me with insights about other data sources which might be examined and names of possible informants for one-on-one interviews. Hatch (2002) identified this type of sampling strategy as a snowball or chain sampling.

**One-on-one interviews.** Merriam (1998) asserted that it is imperative to conduct pilot interviews because the researcher may “learn which questions are confusing and need rewording, which questions yield useless data, and which questions, suggested by your respondents, you should have thought to include in the first place” (p. 76). One of the requirements of my qualitative statistics course was to develop and pilot an interview protocol. The interview was transcribed, coded, analyzed, and interpreted. Ethical procedures were followed, including prior Institutional Review Board (IRB) approval from Walden University and a signed consent form from the participant. The participant was interviewed on June 19, 2008. The insights gleaned from this exploratory interview, combined with the focus group data, were used to modify the one-on-one teacher interview protocol. This exploratory interview also provided insights that were used to develop the focus group protocol and the administrator interview protocol.

The administrator interview protocol was also piloted, transcribed, coded, and analyzed. Insights gleaned from this process were used to modify the administrator interview protocol in order to improve the probability of gaining pertinent information to answer the research questions. The number of administrators participating in the study

was limited; therefore, I decided to conduct the remaining administrative interviews after data had been collected from participants in the teacher cases. This procedure helped to ensure that relevant concepts presented during interviews with teachers was adequately explored during subsequent interviews with administrators.

The one-on-one interviews lasted approximately 35 to 45 minutes and occurred in a mutually agree upon location. Hatch (2002) related that researchers using a postpositivist paradigm often use standardized or structured interviews to ensure that the same questions are posed with each individual. Hatch explained that “the idea is to gather information from several informants that can be compared systematically” (p. 95). The pilot interview and the exploratory focus group sessions provided insights for developing main questions which were posed to each individual. However, the context for the participants varied; therefore, it was also essential to use responsive interviewing strategies which probed and followed-up on information provided by the participants (Rubin & Rubin, 2005). Crawford (Canter, 2005) contended that using active listening and responsive interviewing strategies can result in a more data rich interview than merely covering the main questions presented in the interview protocol.

Hatch (2002) asserted that although it is important to “enter interviews with guiding questions [the interviewer should] be prepared to follow the leads that are generated in the interview context” (p. 101). It was important to utilize probes to encourage depth in the responses as well as to seek clarification of the interviewee’s perceptions (Hatch, 2002; Merriam, 1998; Rubin & Rubin, 2005). However, Merriam contended that “it is virtually impossible to specify these ahead of time because they are

dependent on how the participant answers the lead questions” (p. 80). Exploratory interviews helped to provide insights into possible follow-up questions which were included in the one-on-one interview protocol. Hatch (2002) emphasized the importance of “learning to listening like a researcher” (p. 108). Therefore, follow-up and probing questions were based on concepts introduced by participants that corresponded to the theoretical proposition developed in relation to the conceptual framework, provided unexpected contextual information, and were related to the research questions (Hatch, 2002; Rubin & Rubin, 2005).

The interview protocol was composed of an introduction, a main body of questions, and a closing (Canter, 2005; Hatch, 2002; Janesick, 2004; Rubin & Rubin, 2005). The introduction expressed appreciation for participation, related the purpose of the interview, addressed time bargains and obtained consent form signatures, provided interviewees with an opportunity to pose questions, and gathered general demographic information (Canter, 2005; Hatch, 2002; Janesick, 2004; Rubin & Rubin, 2005). Before initiating the main body of the interview, Hatch’s (2002) recommendation was to “stress that there are no right or wrong answers . . . [and] that informants’ honest perspectives are the most desirable outcome of the conversation” (p. 102) will be expressed.

The main body of the interview protocol was composed of main questions and possible follow-up questions which arose from pilot interviews and exploratory focus group sessions. The closing of the interview included offers to provide the transcript for the informant’s review and to express the willingness of the interviewer to schedule a follow-up meeting upon the interviewee’s request. During the closing, I requested

permission for a follow-up meeting if additional questions arose after reviewing the transcribed interview (Canter, 2005; Hatch, 2002; Janesick, 2004; Rubin & Rubin, 2005). Janesick (2004) noted that the closing should be designed to leave “the window open for future contact” (p. 77)

In summary, Creswell (1998) contended that “having enough information to present an in-depth picture of the case limits the value of some case studies” (p. 64). This multiple-case study collected information from multiple sources spanning five school years of the implementation process of curriculum mapping within Wards Mill School District #4. Yin (2003) related that “case studies can be based on any mix of quantitative and qualitative evidence” (p. 15). Therefore, quantitative as well as qualitative data was collected for this study. The variety of data sources and types of data which were available provided an in-depth picture of administrator and teacher perceptions of leadership roles and responsibilities during the implementation process of curriculum mapping within District #4 and therefore increased the value of this study’s findings.

### **Context of the Study**

#### **Setting**

Wards Mill School District #4 is located in a rural community in a Midwestern state. The community in which this district is located has a population of approximately 20,000. Wards Mill School District #4 covers approximately 159 square miles and extends into seven of the 12 townships in Alexander County (pseudonym) and one township in White County (pseudonym). This district enrolls approximately 4,000

students and is composed of five elementary schools, one junior high school, and one high school.

### **Participants**

Case studies necessitate the use of purposive sampling procedures to identify participants (Creswell, 1998; Hatch, 2002; Rubin & Rubin, 2005). Hancock and Algozzine (2006) emphasized the importance of identifying “key participants in the situation whose knowledge and opinions may provide important insights regarding the research questions” (p. 39). A combination of purposeful strategies was employed to identify participants for this study, including criterion sampling, snowball or chain sampling, maximum variation, and convenience samples.

Wards Mill School District #4 has seven attendance centers which include four K-five elementary schools, one K-8 school, one Grades 6-8 junior high school, and one Grades 9-12 high school. Each of these schools employs one principal for a total of seven principals. The district also employs two unit office administrators, a superintendent, and an assistant superintendent of curriculum. For this study, the administrators represented one case. A limitation of this study related to the willingness of administrators to participate in the study. Five administrators agreed to participate in this study. The administrators represented a convenience sample.

A criterion sampling procedure was used to identify the individuals who would be invited to participate in the three focus group interviews. Criterion for selection included the following: (a) at least two years of experience with mapping in Wards Mill School District #4, (b) participation in at least one of the professional development

sessions facilitated by me, (c) the participant's willingness to express their views openly and honestly during professional development sessions, and (d) the participant had developed maps which were housed in the Internet-based mapping system.

Hatch (2002) related that "most texts on focus group interviewing recommend that group size be kept in the six to 12 range; [however] if the participants have strong connections to intense issues, having fewer in the group will make sense" (p. 135). Experience working with K-12 teachers and data from two district *Curriculum Mapping Needs and Goals Surveys* led me to believe that there were strong emotions associated with this topic. Hatch noted that the potential for participants expressing strong emotions justifies conducting sessions with a smaller number of participants. Since there are five elementary schools, attempts were made to engage a teacher participant from each school. However, due to a last minute conflict, only four of the elementary schools were represented during the focus group interview with elementary teachers. The elementary focus group consisted of four participants. The junior high and high school focus group interviews also included four participants.

During the focus group interviews, teachers completed a form requesting recommendations for other teachers who might be willing to participate in the individual interviews. Hatch (2002) stated that "when one informant identifies the next as someone who would be good to interview" (p. 98), a snowball or chain sampling strategy is employed. Focus group participants were also asked to identify teachers who expressed varying viewpoints on mapping, ranging from those teachers openly opposed to mapping to those teachers with positive perceptions. Hatch noted that attempting to identify

interviewees “with different perspectives on the same phenomenon” is an example of a maximum variation sample (p. 98).

Focus group participants were asked to recommend potential interviewees. They were able to identify other potential participants, of whom the researcher was unaware, who might provide valuable information and insightful perspectives. Those teachers who participated in the focus group sessions were also asked to indicate if they would be willing to participate in the one-on-one interviews. Although focus group participants indicated a willingness to participate in one-on-one interviews, due to time constraints, I did not conduct one-on-one interviews with these focus group participants.

Data from the focus group interviews were transcribed, and initial coding was completed in order to indicate emergent categories prior to initiating the one-on-one interviews with teachers. Hatch (2002) contended that researchers “cannot stop collecting data until you can answer the research questions” (p. 89). Therefore, it was not known how many interviews would be required before saturation was reached in relation to answering the research questions. The number of one-on-one teacher interviews ranged from seven to nine. One-on-one interviews with teachers occurred between the third and fourth quarters of the 2009-2010 school year. Scheduling was dependent upon the availability of the participant.

Identifying a sufficient number of teacher participants was a potential limitation of this study. Creswell (1998) recommended using three or four participants in order to “establish depth through both within-and among-case analysis” (p. 66). I attempted to obtain information from a minimum of three to four participants for each case. However,

I was fortunate to have identified seven participants from the high school case, nine participants from the junior high school case, and nine participants from the elementary school case. A total of 30 participants provided their perspective for this study, including 25 teachers and five administrators.

Establishing a positive, trusting rapport with the interviewee was imperative; otherwise, the interviewee might be reluctant to provide open and honest information. Strategies for developing positive relationships included the following: (a) selecting a private environment in which the interviewee would feel comfortable; (b) stressing interviewer preparedness, including developing a protocol, testing equipment, and bringing extra supplies; (c) exhibiting common courtesies; (d) initiating the interview with small talk, explaining the purpose of the interview, establishing procedural bargains, expressing appreciation, and obtaining signed informed consent; (e) using active listening strategies which demonstrate attentiveness to interviewee's responses; and (f) adhering to interview bargains, especially relating to time (Canter, 2005; Hatch, 2002; Jansick, 2004; Rubin & Rubin, 2005). I employed these strategies to establish a positive relationship with interviewees.

### **Data Analysis Plan**

Multiple-case study designs necessitate a single-case analysis of data followed by a cross-case analysis and an interpretative phase in which analytic generalizations of lessons learned are developed (Creswell, 1998; Merriam, 1998; Stake, 1995; Yin, 2003). Use of multiple sources of data required the development of protocols that enabled the researcher to easily access pertinent information within the case study database (Yin,

2003). A computer file was created for each case: elementary documents (DOC-ELED), junior high documents (DOC-JH), high school documents (DOC-HS), and administrators documents (DOC-ADM). Each case file included a variety of documents such as non-coded and coded focus group interviews and one-on-one interview documents for the teacher cases and non-coded and coded one-on-one interviews with participants for the administrative case. A computer file was also created to contain various unobtrusive document summaries that were used to triangulate interview data (Doctoral UNOB DOC). Merriam (1998) recommended that data analysis should be done in conjunction with data collection. Therefore, data analysis was initiated at the single-case level and then progressed to a cross-case analysis (Creswell, 1998; Merriam, 1998; Yin, 2003).

### **Interview Data Files**

Data collected from interviews were transcribed into a Microsoft Word document. A document file was established for each of the four cases. Interviews were stored in the appropriate case file so that they could be retrieved for single-case analysis. I utilized an interview verification procedure to improve the quality of the data. After each focus group interview, summaries of key concepts presented by the group and individual summaries were generated into a computer document and were stored in the appropriate case file. The focus group summaries, verbatim transcripts of the focus group interviews, and a verification form were mailed to interview participants. A verification form was included in the mailing so that the participant could indicate if a follow-up meeting was desired to address any concerns which arose or to confirm that the summary accurately

portrayed key concepts he or she intended to express. The mailing included a stamped return addressed envelop.

A slightly different summary procedure was used for one-on-one interviews. Near the end of the one-on-one interview, I summarized key concepts so that the participant could provide immediate verification or correction. At the end of the interview, participants were given an opportunity to address additional issues they deemed pertinent. Verbatim transcripts and a verification form were mailed to the one-on-one interviewees. The mailing included a stamped and addressed return envelop. Hatch (2002) indicated that “postpositivist researchers might want participants to review interpretations as a way to argue for the “validity” of their findings” (p. 188). Therefore, I sent a copy of the single-case findings, a verification form, and a stamped return envelop to representatives from each case in order that participants would have an opportunity to review and verify findings. This mailing served as a member-checking strategy (Hatch, 2002).

Once the participants reviewed the transcripts and verified the accuracy of the summaries, data analysis commenced. Interview responses were inductively analyzed (Merriam, 1998; Hatch, 2002; Rubin & Rubin, 2005). The initial phase of data analysis included printing and reading the transcribed interview several times to identify relevant codes and concepts. Rubin and Rubin (2005) defined a concept as “a word or term that represents an idea important to your research problem” (p. 207). Relevant words or phrases were highlighted within each document, and hand-written marginal notes or memos were created to indicate my reflections, questions, and possible categories.

Through constant pattern-matching, categories and subcategories began to emerge within three frames of analysis.

Merriam (1998) suggested that there are three sources of categories: “the researcher, the participants, or sources outside the study such as literature” (p. 182). Merriam also noted, “Applying someone else’s scheme requires that the categories be compatible with the purpose and theoretical framework of the study” (p. 183). However, Rubin and Rubin (2005) warned that by establishing a “theoretical lens as your sole source for coding categories, you might miss the original insights in your own data” (p. 209). Furthermore, Rubin and Rubin (2005) contended that “concepts and themes worked out for other studies might not precisely fit your data and you can end up trying to fit your square pegs into their round holes” (p. 209). I inductively analyzed the interview data in order to generate codes based on the participant’s words, as well as using a theoretical lens when appropriate.

As the data from each interview were coded, I made constant comparisons in order to identify common categories and emergent patterns. As commonalities in coding were observed, data reduction began by developing a separate document per category. These documents were created to initiate the sorting process among the various data sources. Three semantic frames of analysis emerged which related to the research questions and included: (a) casual factors resulting in initiative buy-in, (b) attributes of leadership promoting buy-in and sustainability, and (c) attributes of leadership inhibiting buy-in and sustainability.

Within each frame of analysis, a chart was created to record emergent categories and subcategories. Codes were developed to indicate the frame of analysis, the category and corresponding subcategory. For example, a category within the leadership attribution frames related to communication, and the subcategories included shared vision (sv), moral purpose (mp), and whether the communication was primarily one-way (ow) or two-way (tw). Therefore the coding representative of the communication (com) subcategory for a shared vision (svr) within the frame of leadership attributions for promoting buy-in (ldib) was represented as ldib.comsvr.

The interviews were also read a second time using the computer file for each transcribed interview. During the second reading, the insert comment option within Microsoft Word was used to insert the preliminary codes that had been developed. During the second reading, relevant data emerged which did not fit within commonly identified categories; therefore, additional researcher notes were recorded within the inserted categories to suggest possible further refinements in the coding system to reflect salient data. The final coding system that resulted from constant comparisons of refinement notes was rather complex but provided a means of coding slight differences in perceptions. For example, shared vision was subdivided to reflect the type of perceived benefit from the mapping process and included areas such as personal benefits [e.g., organizational tool], student benefits [e.g., improved student learning], curricular alignment [e.g., to standards, horizontal, or vertical alignment], communication tool [e.g., teacher guide, focused articulation tool], and non-specific relevance. To preserve the

original transcript, each interview was saved as a coded interview and was designated with the participant's code. Documents were stored within case specific computer files.

Each original transcript was read again in order to apply the final coding system. To help me differentiate and quickly identify codes within each of the three frames of analysis, a different combination of my initials were designated for each frame. I modified the User Information by accessing Options within the Microsoft Word Tools prior to commencing the coding process. To keep the color consistent for codes within each frame of analysis, interviews were read and coded for each frame of analysis before rereading and coding for additional frames. The result was a color-coded interview in which coded comments within each frame were consecutively numbered. To preserve the original transcript and to differentiate it from the previously coded document, the final version was saved as color-coded and was designated with the participant's code. Color-coded transcripts were stored in case specific computer files.

I then used Microsoft Excel to generate spreadsheets for each case. Within each case, a separate spreadsheet was created for each of the frames of analysis. A column was designated for the domains and related codes. Two columns per participant were used to represent the comment code number and a column to indicate the total number of comments per coded item. This strategy provided a method for tracing each entry back to the color-coded transcript of each participant. This strategy also provided a method for determining the distribution of the comments among the participants and the repetition of categorical data as well as aided in the identification of discrepant data. Patterns within the data quickly emerged within the spreadsheets. Percentages for each category were

determined within each frame of analysis. Discrepant information and patterns within the data were analyzed and used to formulate themes and relationship emerging from the data and were included within the final interpretations as was appropriate.

Since quotes were incorporated into the final interpretation, a *Memorable Quotes* document was created for each case. Each memorable quotes document was subdivided into case specific charts that depicted perceptions related to emergent themes. Each chart was subdivided into four columns that included the following: (a) participant code identifier, (b) comment numbers specific to each interview, (c) the page number specific to each interview, and (d) the comment. The memorable quotes charts were subdivided in this manner so that I could trace back the comment to the original data source.

### **Unobtrusive Data Analysis**

Unobtrusive data was used to triangulate data collected from the interviews, as Hatch (2002) noted, this data analysis strategy helped to “improve the confidence in reporting findings” (p. 121). Documents are commonly used as a means of collecting case study data (Hancock & Algozzine, 2006). However, Merriam (1998) emphasized the importance of “determining the authenticity and accuracy of documents” (p. 121). Merriam noted that it is also important to identify the “reasons . . . [the document was] written, its author, and the context in which it was written” (p. 121). Many of the documents that were collected for this study were reports that I had written while serving as the District Curriculum Mapping Coordinator/ Consultant. Data collection procedures are detailed within each document. These reports included both quantitative and qualitative data.

Merriam (1998) suggested that “data found in documents can be used in the same manner as data from interviews” (p. 126). Merriam also recommended that “the researcher must adopt some system for coding and cataloging” (p. 123) unobtrusive documents. Documents which I generated were stored in computer files as well as hard copies. Therefore, it was easy to convert them into a file designated for this study. Other unobtrusive documents and artifacts were also stored in computer documents housed within the Internet-based system and were printed or saved in separate computer files. To ease retrieval, a document file was created which included a summary of the documents. This coversheet was used to catalogue documents within the case study data base.

A research journal was also created to record my reflections based on the data collected, questions, and thoughts pertaining to the next step. The research journal served as a means of bracketing biases. A research log was kept to provide a record of when events took place. The research journal, research log, and various documents within each case file served as components of an audit trail (Hatch, 2002; Janesick, 2004; Merriam, 1998; Rubin & Rubin, 2005; Yin, 2003).

### **Inductive Analysis**

Hatch (2002) explained that “inductive analysis begins with an examination of the particulars within data” (p. 161). Through constant comparisons among data sources, patterns began to emerge which were used to formulate generalizations from the single case analysis and from the cross-case analysis. Hatch noted that the key component in this form of data analysis should be the development of “domains based on semantic

relationships discovered within frames of analysis” (p. 162). Hatch also stated, “Frames of analysis are essentially levels of specificity with which data will be examined” (p. 163). Hatch related that “domains can be categories that are understood by large numbers of people” . . . [however] domains are categories organized around relationship that can be expressed semantically” (p. 165).

Data collected from the interviews and unobtrusive documents were sorted into category files. Within these files, subcategories were identified. Therefore, analysis using domains and frames flowed logically from previously sorted data. Hatch (2002) referenced nine frames of analysis that Spradley (1979) identified; these frames included strict inclusion, spatial, cause-effect, rationale, location for action, means-end, sequence, and attribution. This form of analysis resulted in domain documents that were catalogued in a computer file. After salient domains were determined, Hatch recommended assigning “a Roman numeral to each domain and a capital letter to each included term . . . [which provides] a handy record of . . . domains” (p. 168). However, I decided not to use the method described by Hatch because each term was additionally subdivided to depict discrete categories which emerged from the data.

Data emerged which implicitly, rather than explicitly, corresponded with various codes. Therefore, it was necessary to refine or “adjust . . . labels and definitions to accommodate. . . . [and] to reflect variation” (Rubin & Rubin, 2005, p. 217) in the data and to generate suggested subcategories. Once domains were established, data were searched to determine if sufficient evidence existed to support the hypothetical categories. This process engaged both inductive and deductive analysis of data. Hatch

(2002) noted that inductive analysis procedures aid in reducing data and deriving relevance in complex data from multiple sources. Hatch also related that inductive analysis “can be used comfortably with most interview and unobtrusive data . . .[and] fits naturally within studies based on postpositivist . . .assumptions” (p. 178).

### **Theoretical Proposition**

Yin (2003) argued that a theoretical proposition is essential in case study research in order to guide data collection and data analysis. Yin also noted that theoretical propositions are concepts that provide a focus and narrow the researcher’s attention toward gathering the most relevant data to be examined within the scope of the study. My theoretical proposition for this study was that mapping was initiated by the administrators without a clear understanding of the magnitude of change represented for teachers and the administration. Additionally, administrators were unaware of how traditional mental models within the district would pose implementation challenges and inhibit sustainability. I believed that these traditional mental models included top-down leadership, schools functioning as independent agents, teacher isolation and limited collaboration, isolated learning rather than collaborative inquiry and team learning, and non-systemic planning processes that guided implementation plans.

Elements within change theory and components in the Jacobs’ model provided a focus for gathering and analyzing pertinent data. For example, change theory suggested that sustainability of large-scale initiatives are contingent upon the leaders’ understanding of the magnitude of change represented by the initiative and their ability to appropriately address issues that might negatively impact stakeholders (Marzano, Waters, & McNulty,

2005). Navigating through a change process necessitates that leaders identify and address mental models that might not be conducive to elements within the change initiative (Evans, 1996; Fullan, 2004; Senge, 2006). Additionally, change leadership roles and responsibilities include the development of a shared vision and understanding of the moral purpose for change; adequate provisions of incentives and resources so that personal mastery of the skills required for change are developed; development of systemic implementation plans that appropriately respond to the needs of stakeholders at various levels in the organization in order to make continual progress for obtainment of a common goal; and collegial knowledge creation focused on obtainment of initiative goals (Fullan, 2004; Knoster, Villa & Thousdand, 2000; Senge, 2006; Schlechty, 1990). The Jacobs model is a large-scale, systemic change initiative designed in that teachers become curriculum designers and curriculum leaders. Implementation and sustainability of the Jacobs model necessitates that administrators build teacher leadership capacity and foster the development of learning communities (Hale, 2008; Jacobs, 1997; Truesdale, Thompson & Lucas, 2004; Udelhofen, 2005).

### **Validity and Reliability**

Creswell (1998) suggested that validity in qualitative studies refers to the strategies utilized to verify the accuracy and trustworthiness of findings. Merriam (1998) defined reliability in qualitative studies as “the extent to which there is consistency in the findings” (p. 218). Various strategies were used to improve the validity and reliability of this study’s findings.

Merriam (1998) noted that the reliability of the study is improved when the researcher explains “the assumptions and theory underlying the study, by triangulating data, and by leaving an audit trail...[which] detail how the study was conducted and how the findings were derived from the data” (p. 218). Yin (2003) contended that developing and consistently following strict data collection and data analysis protocols and developing a case study database also improves the reliability of a case study. Therefore, I developed various case study protocols which were followed consistently within each case. Developing and following these various protocols also aided in establishing an audit trail for this study through the creation of a case study database which can be found in the appendixes for this study. Multiple sources of data were also used to triangulate the study findings. These strategies were used to improve the reliability of the study.

Multiple strategies were also used to improve the internal validity, construct validity, and external validity of this study. Merriam (1998) noted that internal validity refers to “the extent to which research findings are congruent with reality” (p. 218). Methods to improve internal validity included triangulation of data, member checking, pattern-matching, and prolonged engagement in the field (Creswell, 1998; 2003; Merriam, 1998; Yin, 2003). Construct validity refers to measures used to determine the validity of the study’s purpose. Methods used to improve construct validity included using multiple sources of data, member checking, and establishing an audit trail of evidence (Yin, 2003). External validity refers to the transferability of findings to other contexts. Measures to improve external validity included providing rich, thick description (Yin, 2003).

In relation to improving the validity of this study, I provided rich thick descriptions of the context of the study, the data collection and data analysis protocols, potential researcher biases, and the researcher's role in the study. This rich description improved the external validity of this study because readers should be able to determine if the study has applicability within their own context. Data collection for this study also encompassed multiple years and described my prolonged engagement in the field. Unobtrusive data from multiple sources and multiple years were used to triangulate data from various interviews within each case. Participants were provided with the opportunity to review and verify interview data and to verify the findings within a single case. Providing participants with an opportunity to verify case findings represents the use of a member checking strategy. Inductive analysis procedures required rigorous pattern matching for the single case analysis and the cross-case analysis in order to formulate the study findings.

Creswell (1998) recommended that "qualitative researchers engage in at least two" (p. 203) methods to improve validity. I employed a variety of strategies to improve validity including rich descriptions, member checking, pattern matching, triangulation using multiple sources of data, prolonged engagement in the field, and establishing a chain of evidence. Using more than two of these strategies improved the validity of my findings.

### **Ethical Considerations**

In conducting qualitative research, a number of ethical issues may surface in relation to the treatment of human subjects. Therefore, the Institutional Review Board

(IRB) at Walden University stipulated that a signed consent form from the research partner must be included in the IRB application. Therefore, prior to obtaining Internal IRB approval to conduct this study, the Wards Mill School District #4 research partners were contacted. A meeting was arranged to explain the purpose of the study, possible data sources, procedures for protecting identities of participants, data storage procedures, how the data would be used, and who would have access to the data. I also complied with district policies regarding doctoral studies. Once these research partners, or unit office administrators, gave permission for me to conduct the study and signed consent forms addressing the agreed upon research bargain were obtained, I submitted the proposal to the IRB. Once IRB approval was obtained, I initiated contact with potential participants. My IRB approval number is 01-14-09-0337358.

Potential focus group and one-on-one interview participants were initially contacted by phone or in person. During this conversation, I explained the purpose of the study, why they were selected as participants, how their identity would be protected, and the time requirements needed for the interview. If the participant was willing to participate, a time and place was mutually agreed upon, and contact information was obtained. Participants were sent a cover letter describing the purpose of the study and the scheduled meeting date and location, and they were also sent a copy of the informed consent form. Several days prior to the scheduled interview, I contacted the participant to confirm the appointment and make necessary modifications, if a conflict had arisen.

Rubin and Rubin (2005) indicated that the interview protocol may be shared with the “conversational partners before the interview” (p. 147). Janesick (2004) concurred

that providing participants with interview questions ahead of time is an acceptable procedure. Responsive interviewing procedures and active listening necessitated using follow-up and probing questions based on the informant's responses to main questions (Canter, 2005; Rubin & Rubin, 2005).

Therefore, in addition to the cover letter, participants were sent interview protocol information which provided them with a general overview of the format that would be used during the interview, the questions, and an indication that additional questions might be posed based on their responses. Participants were informed that the depth of their responses was important. Therefore, I understood that it might not be possible to address all of the questions during the time allotted for the interview. Participants were also informed that they would be provided with an open-ended opportunity to relate additional comments they considered relevant during the closing of the interview.

To protect the identities of participants and the district, pseudonyms were used for participants. All participants were given a code to identify the case to which they belonged and other coded information which would allow me to trace the participant's true identity. A computer document was generated matching the coded information with the informant's identify and their contact information. This document was stored on a password protected computer and was not available to other Wards Mill School District #4 employees.

Data which were collected for this study were stored in computer files on a password protected computer. Any hard copies of data used during analysis were stored in a locked file cabinet at the researcher's home. Any unobtrusive documents which

were in paper format were stored in a locked file cabinet. Backup onto a flash drive occurred as I revised files, and this data was stored in a locked waterproof fire chest at the my home. Backup onto a separate flash drive occurred weekly, and the drive was stored in my bank safety deposit box. Access to data files was limited to my doctoral committee. All computer files will be stored in a bank deposit box for a minimum of 5 years.

### **Summary**

In summary, this section described the qualitative tradition that was used to conduct this study and provided my rationale for selecting a multiple case study as the methodology for this study. The role of the researcher was also described. The rationale for data collection and analysis and the types of data and procedures used to collect, store, and analyze data were discussed. The setting and the criteria for selecting participants were described. The strategies which were used to improve the reliability and validity of the study were explained. The section concluded with a discussion of the measures which were used for ethical protection of the participants and the data.

## Section 4: Results

### **Introduction**

This section provides information relating to the general processes by which data was generated and the systems utilized for storage and tracking of data. A review of the data collection plan and how the data were organized is followed by a general discussion of the processes used to derive emerging understandings from the data. Next, a single case analysis and a cross-case analysis present the patterns, relationships, and themes described by the data. Discrepant and nonconfirming data are discussed within the findings. This section concludes with a discussion on evidence of quality.

### **Review of Data Collection**

The K -12 curriculum mapping initiative in Wards Mill School District #4 commenced at the high school level and concluded at the elementary school level. I sought to examine how the implementation process related to this curriculum mapping initiative impacted teacher and administrator perceptions of leadership roles and responsibilities. I also sought to examine how leadership during the implementation process impacted teachers' perceptions of sustainability of this initiative. Deriving evidence for the purpose of this study necessitated the collection of data from four cases representing administrators and teachers at three instructional levels. For this study, a case refers to a group of five to nine participants representing administrators and teachers from each of the three instructional levels. Instructional level cases included teachers representing the elementary, junior high, and high school levels, and the administrative case included administrators from each instructional level and unit office administrators.

The primary source of evidence for answering the research questions was obtained from focus groups and one-on-one interviews with teachers and administrators at all three instructional levels. A combination of purposive sampling procedures was utilized to identify participants whose perceptions might provide insights for answering the research questions (Creswell, 1998; Hancock and Algozzine, 2006; Hatch, 2002; Rubin & Rubin, 2005). Data were also collected from unobtrusive sources in order to triangulate evidence derived from the interviews and to gain insights into the implementation process. Unobtrusive sources included archival documents such as communiqués, surveys, and quarterly reports and artifacts like maps housed in the Internet-based mapping software (Hatch, 2002; Merriam, 1998; Yin, 2003).

My use of a postpositivist paradigm necessitated the development of an interview protocol composed of main questions which would be posed to each participant for comparative purposes (Hatch, 2002). Since the educational background of the participants varied, it was also necessary to use active listening and responsive interviewing strategies to probe, follow-up, and clarify the information that they provided (Canter, 2005; Hatch, 2002; Merriam, 1998; Rubin & Rubin, 2005). Pilot interviews were conducted to determine the effectiveness and clarity of the protocol questions and to gain insights into how the protocol might be modified to collect pertinent information not previously contemplated (Merriam, 1998).

Two exploratory one-on-one interviews were conducted with one representative from each of the teacher and administrative cases. A week prior to conducting each interview, the participants were provided with the interview protocol, the main and

potential follow-up questions, and a consent form (Janesick, 2004; Rubin & Rubin, 2005). A day or two before the interview was scheduled, the participants were contacted to confirm their availability for the interview (Hatch, 2002; Janesick, 2004). I recorded and transcribed the interviews. Afterward, a copy of the verbatim transcript was mailed or hand delivered to each participant.

The teacher participants were selected using a criterion sampling procedure. Criterion for selection included (a) at least two years of experience with mapping in Wards Mill School District #4, (b) participation in at least one session facilitated or co-facilitated by myself, (c) the participant's willingness to express perceptions during professional development sessions, and (d) the availability of maps generated by the participant which were housed in the Internet based mapping system. The exploratory teacher interview was conducted on June 19, 2008.

Data from the exploratory teacher interview were inductively analyzed over several weeks to identify frames of analysis. Domains were created based on semantic relationships within the frames of analysis (Hatch, 2002). The interview was coded, analyzed, and interpreted. Data from this exploratory interview guided the development of the exploratory administrative and focus group protocols. The coding system which was developed influenced the procedures that would be used to analyze future data.

The participant for the exploratory administrative interview was identified using a convenience sampling procedure. The interview was conducted on February 5, 2009 which was approximately a week prior to the scheduled focus group session with teachers representing the same instructional level as the administrator. This timing proved to be

very advantageous because the administrative interview revealed unexpected data, that might explain causal relationships between leadership during the implementation process and perceptions of sustainability, challenges presented during implementation, and leadership roles and responsibilities.

One of the limitations of the study related to the willingness of administrators to participate in the study. Therefore, I decided to conduct the remaining administrative interviews upon completion of data collection from the teacher cases. Instructional level data from the teachers enabled me to hone follow-up and probing questions posed to corresponding administrative representatives and thereby improved the comparability of data relating to perceived challenges and leadership roles and responsibilities.

I employed the same criterion for sampling to identify potential participants to participate in the focus group sessions. A list of potential representatives from the three instructional levels was generated and I began contacting teachers in person or by telephone on January 19, 2009. Teachers who expressed a willingness to participate in the study were mailed or hand delivered a copy of the protocol and the consent form to review before making a final commitment (see Form A1 in Appendix A). Within a week, the prospective participants were contacted again to confirm their willingness to participate in the study and the interview was formally scheduled.

Initial contact with prospective focus group participants verified my assumption concerning the strong emotional connections with the topic and justified conducting the sessions with a small number of participants (Hatch, 2002). Therefore, I arranged to conduct the interviews in a secluded, private meeting room located upstairs at a local

restaurant. I identified five teachers at the elementary level, one from each attendance center, who were willing to participate. Due to last minute conflicts, only four representatives actually participated in the interviews. Four participants from each of the remaining teacher cases agreed to participate. Focus group interviews occurred during the month of February, 2009 and commenced with a semi-structured activity.

The purpose of the focus group interviews was to explore teacher perceptions about the factors which might impact sustainability of the curriculum mapping initiative. Prior to conducting the focus group interviews, I decided to review archival data from question number 19 in the 2007-2008 *Curriculum Mapping Needs and Goals Survey*. The open-ended format of question 19 provided respondents with the opportunity to identify perceived barriers to sustainability of the curriculum mapping initiative. Appendix A in the survey report includes charts in which the responses were categorized by instructional level; therefore, the information could be used to determine if perceptions had changed and to provide insights for posing follow-up or probing questions concerning contributing factors for perceptions.

To encourage conversational partners, focus group sessions began by affording each participant an opportunity to give a brief introductory statement concerning a district or site-based initiative they perceived as beneficial and to explain the factors that contributed to their perceptions. This procedure helped participants feel more comfortable sharing their perspectives and provided insights into factors which resulted in initiative buy-in. Participants were then given a clipboard with sets of Post-It notes which were pre-labeled *yes*, *not sure*, and *no*. Participants were instructed to select the

set which answered their opinion as to whether the district would still be involved with the curriculum mapping initiative three years into the future and to record one reason per Post-It note to explain their opinion. At the end of 10 minutes, the Post-It notes were collected and categorized as a group effort. The anonymous nature of the procedure was non-threatening and resulted in data which had not been influenced by other participants. The classification process also encouraged interactions among conversational partners and gave me insights into potential categories. Focus group sessions lasted 60 minutes.

Focus group participants provided names of potential one-on-one informants, and one-on-one informants also recommended potential participants. Identification of potential participants based on the recommendation of interviewees is an example of a snowball or chain sampling procedure. Some participants provided the names of teachers whom they perceived as having positive and negative perceptions of mapping which represents a maximum variation sampling strategy.

Insights gleaned from the exploratory one-on-one interviews and the focus group interviews were used to modify the protocols and main questions used for the remaining one-on-one interviews (see A2 and A3 in Appendix A). To improve the quality of the data which would be used to formulate the study's findings, I summarized participants' perceptions and sought their verification concerning the accuracy of the summaries. My strategy to improve the accuracy of my perceptions included the following actions: (a) generating a summarization of participant perspectives, (b) sending a copy of the summarized interview and a copy of the transcript to each participant, and (c) sending a verification form which provided the participant with an opportunity to correct any

misconceptions of mine or request a follow-up interview for clarification (see A4 and A5 in Appendix A). The verification form was to be signed by the participant and returned in the stamped and addressed return envelope.

Due to the length of time required to develop summary forms, the modified protocol for subsequent one-on-one interviews included a section at the end of an interview in which I summarized the participant's perspectives and obtained their immediate verification or clarification. The participant was also provided an opportunity to discuss issues that he or she deemed pertinent, which had not been addressed during the interview. Each participant was sent a copy of the verbatim transcript and a verification form to return in the stamped and addressed envelop.

Each of the three instructional levels included data collected from interviews with four focus group participants. Four additional one-on-one interviews were conducted within the elementary and junior high school cases, and three one-on-one interviews were conducted with representatives from the high school case. With the exclusion of the exploratory teacher interview, data collections from the teacher interviews commenced on February 12, 2009 and were concluded on June 29, 2009.

Wards Mill School District #4 is composed of seven attendance centers with a total of seven principals and two unit office administrators. Each administrator was contacted, but only five out of nine potential participants agreed to participate in the study. A principal from each of the instructional levels and both unit office administrators participated in the one-on-one interviews. Although only one of the five elementary principals participated in an interview, this individual had served as the lead

principal for the curriculum mapping initiative during the 2006-2007 and 2007-2008 school years. Administrative interviews commenced on February 5, 2009 and were concluded on August 13, 2009.

Creswell (1998) suggested that the collection of data from three or four participants in each case may provide sufficient depth for single case and cross case analysis. A total of 30 informants were interviewed for this study. Additionally, unobtrusive archival documents and artifacts were collected and used to triangulate data from the interview information and to foster an emerging understanding of the data. Examples of unobtrusive documents included implementation reports, and artifacts included items such as maps that were housed in the Internet-based mapping software system. Unobtrusive data from 2005-2006 through the 2009-2010 school years were collected between January 29, 2009 and January 3, 2010. Relevant unobtrusive data will be described in the single case findings.

### **Data Organization**

Data were collected and organized from multiple sources including 30 interviews representing four cases and unobtrusive data spanning five school years. Ten electronic folders were developed to organize data, and three-ring binders were used to organize hardcopies of unobtrusive documents. Most of the electronic folders were developed to be case specific; however, a few were created to house generic information. All of the doctoral related folders were prefaced with the word *doctoral* so that they could easily be differentiated from non-doctoral related electronic files stored in the computer's hard drive.

The *Doctoral Interview* folder was developed to house generic forms such as contact letters and forms for consent and verification. After a prospective participant had tentatively agreed to participate in an interview, letters were personalized, and informants were sent a follow-up contact letter describing the purpose of the study, the protocol, and a consent form. A chart of potential and actual participants was also housed in the *Doctoral Interview* folder. The names of potential participants were separated by case and included personal contact information. In addition to personal contact information, columns within the chart were created to keep track of dates, purposes and outcomes of the contact; dates protocol, consent forms, transcripts, verification forms, and thank you notes were mailed; and a column indicated the type of interview which was conducted in addition to when it was scheduled. This folder also contained an *Interviewee Code Identifier* chart. The chart was subdivided into administrative and teacher cases. Information pertained to informants' name; code identifiers; assigned location and position; the location, date, and time the interview was conducted; and years of experience in their position and with mapping. The teacher chart included an additional column to indicate opinions about sustainability.

Several other electronic folders were also developed. An electronic folder, *Doctoral Consent*, was created to house scanned copies of each consent form in addition to the signed hardcopies which were kept in a locked file cabinet. A *Doctoral Update to Committee* folder housed monthly summaries detailing progress of the study. The *Doctoral Log and Journal* folder housed separate files for monthly logs and the interview journal. The monthly log was a chart which recorded the date, type of activity,

product/results, and a brief notation of reflective thought (see Audit Trail B1 in Appendix B). In addition to electronic files, a booklet with monthly calendars provided a running log of scheduled events. The *Interview Journal* was used to record in-depth thoughts and reactions pertaining to data collected from interviews and unobtrusive documents. Additionally, it provided a means of bracketing and revealing personal bias (see Audit Trail B2 in Appendix B).

The primary source of data included interviews with participants representing four cases; therefore, the following electronic folders were created for each case: (a) *Doctoral Administrative Case Interviews*, (b) *Doctoral Elementary Interviews*, (c) *Doctoral Junior High Interviews*, and (d) *Doctoral High School Interviews*. These folders contained the case specific non-coded and coded versions of each participant's transcript. Three versions of each transcript was printed and stored as a hardcopy in an appropriately labeled three-ring binder.

A *Doctoral Memorable Quotes* folder housed case specific charts of notable quotes. As the interviews were analyzed, quotes were highlighted, and memos were written. The mapping initiative posed several challenges for administrators and teachers. Therefore, the charts were subdivided into categories related to perceived challenges and corresponded with coding domains. Each chart provided retrieval information so that I could quickly locate quotes within a transcript (see Data C1 in Appendix C).

To house summaries of unobtrusive documents (UNOB), a folder entitled *Doctoral UNOB* was created. Files included summaries of individual documents, content analysis summaries of the most relevant documents, and an overview chart of the various

files. Individual document summaries used a format adapted from Miles and Huberman (1994) and included identification information, description and summary of the document, relevance to the doctoral study, and initial analysis of how the document might be used and/ or included in the Appendix (see Data C2 in Appendix C). Content analysis summaries were generated to encompass multiple documents related to pertinent categories which emerged from analysis of the interview data and in order to describe implementation trends. I also sought to discover correspondence or nonconformance among the data. Analysis and interpretation of the data was guided by the conceptual framework relating to change leadership, theoretical constructs within the Jacobs model of curriculum mapping, and the research questions. A hardcopy of the summaries were printed and stored in an appropriately labeled three-ring binder.

Unobtrusive documents included archival records and artifacts housed in the Internet-based software system such as Usage Logs, Administrative Summaries, and Diary and Master Maps generated by teachers from each instructional level. Data within this software system were password protected and limited by level of access. As a result of my coordination role in the mapping initiative, I gained administrative access to all data within the system. The software system was designed to house mapping information from multiple years. Information from the 2005-2006 through portions of the 2009-2010 school years was printed and placed in a binder. An additional archival document that was collected included the district school improvement plan which was posted on the district's website in 2006. It provided limited information pertaining to professional

development opportunities and projected implementation plans for curriculum mapping from 2006-2009 school years.

My responsibilities during the 2005-2006 school year was to act as a liaison between the national consultant and unit office to schedule professional development opportunities and to co-develop professional development materials. During the 2006-2007 school year, I continued my role as a liaison between the national consultant and the unit office and scheduled professional development sessions and co-prepared and facilitated K-12 professional development opportunities with the national consultant. I facilitated and scheduled professional development opportunities during the 2007-2008 school year. My role during the 2008- 2009 and 2009-2010 school years was primarily to update mapping software accounts.

As a result of my role in the mapping initiative, binders were chronologically developed that included agendas, overviews, and detailed information concerning professional development dates and times for K–12 teachers. This information was used to identify focus group participants who met the criterion for sampling and to triangulate data. A communiqué binder was also created that included email correspondence and memoranda primarily from 2006-2008.

Additional binders of data collected by myself included quarterly and survey reports. Quarterly reports, which were prepared as a component of my role during the 2007-2008 school year, contained detailed information concerning scheduling and attendance at professional development sessions, agendas, SMART goal maps, samples of collaboratively developed products, workshop evaluations, and anonymous teacher

journal entries. The 2006- 2007 and the 2007-2008 *Curriculum Mapping Needs and Goals Survey* reports provided insights into implementation trends. Unobtrusive documents were used to triangulate data and analyze implementation trends.

### **Level 1 Data Analysis: Emerging Understandings**

I developed the theoretical proposition for this study that the Jacobs model of curriculum mapping represented a second-order change initiative for Wards Mill School District #4 and that it was initiated by administrators without a clear understanding of the degree of social change that it represented and how this change might have impacted teacher and administrator perceptions of leadership roles and responsibilities and the teachers' perceptions as to the initiative's sustainability. Implementation of this initiative also posed several challenges. To understand how the implementation process affected perceptions about leadership, roles and responsibilities, I sought to discover the initial leadership roles assumed by administrators, the challenges they perceived, and the recommendations they would offer to other leaders who decided to implement curriculum mapping. From teachers, I sought to understand factors resulting in initiative buy-in, perceived challenges posed by mapping, how leadership during the implementation process impacted their perceptions of mapping, and their perceptions of leadership roles and responsibilities for administrators who intended to implement curriculum mapping.

The one-on-one interview protocols included four main questions. The questions and follow-up questions were designed to collect comparable data from administrators and teachers pertaining to (a) challenges the initiative presented and actions taken to address challenges, (b) reasons the district implemented mapping and perceived benefits,

and (c) advice concerning leadership roles and responsibilities for those contemplating initiating mapping. Administrators were additionally asked to explain their role during the implementation process and to describe the curriculum mapping professional development opportunities in which they had participated. Teachers were additionally asked to compare the curriculum mapping initiative to another initiative in which they had personal buy-in and to discuss their perceptions concerning the sustainability of mapping. Although the one-on-one interview protocol was composed of four main questions, responsive interviewing strategies resulted in a mean of 21 questions posed to administrators and 28 questions to teachers. Each one-on-one interview lasted 35 to 40 minutes.

After each interview, I recorded impressions about the participant's responses and contemplated how the information corresponded with the conceptual framework and elements within the Jacobs model for mapping. In most cases, I began the transcription process within 24 hours of the interview. It took approximately two or three days for me to generate each verbatim transcript. Journal entries were made after each transcription session, and I often reflected astonishment and appreciation for the candor with which informants conveyed their perceptions. The degree of concentration and time required to transcribe an interview drew my attention to the emotions behind the words and pauses which had been obscured during the interview process.

Reflections based on patterns in perceptions conveyed by informants resulted in the formulation of three frames of analysis. To understand how leadership during implementation impacts teachers' perceptions of sustainability, I first sought to discover

factors leading to teacher buy-in and factors leading to teacher resistance. Therefore, one of the frames of analysis was to discover perceptions of differences between the implementation of curriculum mapping and other initiatives with personal buy-in. I sought to analyze data in order to identify domains which might explain a cause and effect relationship between initiative buy-in and initiative resistance.

Because a plethora of challenges had been conveyed by informants, the two additional frames of analysis related to (a) leadership challenges inhibiting buy-in and sustainability and (b) leadership imperatives for initiative buy-in and sustainability. I sought to discover the attributes of leadership responsibilities and roles resulting in initiative resistance and attributes of leadership responsibilities and roles resulting in initiative buy-in. Categories or domains for the coding system were based on literature pertaining to the conceptual framework, concepts and categories presented by participants, and my interpretation of the data based on the semantic relationships within the frames of analysis (Hatch, 2002; Merriam, 1998; Rubin & Rubin, 2005).

Upon completion of each transcript, a hard copy of the interview was printed and placed in the appropriate binder. Analysis of each transcript was a multi-step process which began with an initial read-through to identify concepts and to highlight potential notable quotes. Memos were recorded in the margins that suggested unobtrusive data which might be collected, topics which might be explored in future interviews, and possible categories for the data. As each new informant's transcript was printed and analyzed, the concepts and possible categories were compared with previously analyzed interviews.

Through constant comparisons, common concepts began to emerge into categories within each of the frames of analysis. After several participants' transcripts had been compared, I began the second phase of concept identification. The second phase included reading the unmarked electronic transcripts. Electronic transcripts were not revisited until several weeks or months had elapse between the initial readings.

Comments were inserted as concepts were identified, applicability of potential categories was tested, and notable quotes were highlighted. During the second phase, I began to notice subtle dimensions within the concepts. Transcripts were coded using the *saved as* option, even though only concepts and potential categories had been identified; thus, the original transcript was left intact. The second version of the transcript was compared with the version containing handwritten notations to determine the consistency in which concepts were identified and to reveal possible salient concepts previously overlooked.

I deemed it important to develop codes to depict the dimensions within a category. A rather complex coding system resulted from the development of codes to depict subtle dimensions within a domain (see Coding D1 in Appendix D). The cover terms which emerged for leadership pertained to (a) communication, (b) provisions of resources, (c) organizational barriers or bridges, (d) implementation plan, and (e) accountability. Communication was subdivided into domains relating to shared vision, moral purpose, and engagement. Domains within resource provisions included time, professional development, and on-site support. Avoidance of organizational barriers included categories of traditional mental models and negative cultural relationships.

Building organizational bridges included categories for 21<sup>st</sup> century mental models and positive cultural relationships. Each of the domains had codes to represent the dimensions of the concepts. For example, one of the communication domains, *shared vision*, was subdivided into personal benefits, student benefits, curricular alignment, communication tool, relevance, and administrative commitment. Categories that emerged for comparative initiatives included shared vision, moral purpose, resources, and communication/engagement.

Near the end of October, 2009, I randomly selected four transcripts representative of each case to test the coding system and to make modifications as necessary. Simply inserting a comment would not allow me to easily differentiate codes among frames of analysis. I decided to use options in Microsoft tools to change user information so that different colors would represent each frame of analysis. Unfortunately, Microsoft randomly selects colors each time the user information is changed, and the colors may differ among transcripts. Through trial-and-error, I learned that for consistency of color within a transcript, the entire interview needed to be coded for each frame before changing the user information for the next frame of analysis (see D2 in Appendix D). The name for the informants' transcript was slightly modified using the *save as* option so that previous transcripts could remain intact. Modifications were made in the coding system, and the transcripts were re-coded using the final system.

As a result of the coding trial, I used the following coding procedure. The original, unmarked transcript was read. Next, user information was altered with a different combination of my initials to represent a given frame of analysis prior to

inserting comments. The codes within a frame of analysis were reviewed before re-reading the transcript. The entire transcript was coded for a given frame of analysis before changing the user information and initiating the same process for the next frame of analysis. The procedure meant that each transcript was read four times in order to complete the coding process; this procedure improved the differentiation among frames of analysis which expedited the process for transferring data into a Microsoft Excel spreadsheet. As I coded the transcript, notable quotes were highlighted and textboxes were inserted for memos.

Upon completion of a transcript, the name of the file was slightly modified to include color-coded with the informant's code. Each case took about a month to color code. This process took place between November and December of 2009 and January and February of 2010. Prior to transferring data into a spreadsheet, the informant's color-coded versions were compared with earlier versions to determine if I had consistently identified pertinent concepts and notable quotes. Slight differences were noted such as identifying a concept singularly in one version whereas it might be part of a block comment in another version.

Three spreadsheets were developed for each case to reflect the codes within each frame of analysis. Two columns were generated for each informant. In one column I inserted the comment reference number in the row for the appropriate code. This technique allowed me a means to easily retrieve the comment within a transcript. The second column was used to tally the total number of responses per code for each informant. This process provided a method of determining if perceptions were

commonly shared by all the participants or were overly emphasized by one participant. Patterns in the data quickly emerged. A spreadsheet for the administrative case was completed first. I decided not to develop spreadsheets for the teacher cases until all of the participant's transcripts were color-coded. I thought that this technique would improve objectivity and eliminate the potential of inadvertently influencing the color-coding process. Data collected from focus group Post-It Notes were also coded and the data were inserted into the appropriate spreadsheet (see D3 in Appendix D). A data reduction strategy included combining participant totals into a cumulative spreadsheet which listed the categories per frame of analysis.

Analysis of the interview data were followed with a reexamination of unobtrusive data to refresh my knowledge of the information and to reduce the information by relevance. Binders of data, unobtrusive document summaries, and charts of memorable quotes were placed in separate piles. Documents in the binders were reviewed and removed so that they could be manipulated into different piles. Piles were organized into supporting and non-supporting data for emergent patterns within the interviews. Piles were rearranged into chronological order to examine trends over time. Additional summaries were generated, as necessary, for the most relevant documents. Blank 5" x 8" cards were given labels for possible patterns, themes, and relationships and materials were reorganized numerous times until I determined there was sufficient data to support findings for each case.

## **Level 2 Data Analysis: Single Case Findings**

### **Administrative Case**

My quest for mapping knowledge led to the assumption that, although the Jacobs model for curriculum mapping could provide a vehicle for social change, it represented a second-order magnitude change initiative for Ward's Mill School District #4 that posed numerous leadership challenges. The administrative case interviews provided participants with an opportunity to discuss perceived challenges posed by this initiative and to provide recommendations concerning leadership roles and responsibilities for those administrators who were contemplating implementation of mapping.

Six hundred and thirteen pieces of coded data from five transcribed administrative case interviews were inductively analyzed, based on concepts in change theory, mapping, and participants' comments. The analysis resulted in the identification of domains relating to comparisons between mapping and other district initiatives, leadership factors that contributed to resistance to curriculum mapping, and perceptions about leadership factors needed for the acceptance and sustainability of curriculum mapping.

Table 1 represents comparative initiative results and describes factors that contributed to initiative buy-in. Table 2 identifies attributes of leadership which might inhibit buy-in and sustainability of mapping, and Table 3 reflects the perceptions of participants concerning leadership attributes for promoting buy-in and sustainability of mapping. A discussion of the patterns, relationships, and themes emerging from the data follows the presentation of the tables. The findings are used to address the research question relating to administrators' perceptions of leadership roles and responsibilities.

I sought to glean information concerning administrators' perceptions between mapping and another initiative they had led, but was provided with limited data. The only comparative statement that the unit office administrator, Adm 3, provided was that "a lot of other initiatives are kind of flashes in the pan . . . [but curriculum mapping] will have useful purposes for a long period of time [which] makes it better than some of the other programs that have come and gone." Adm 4, a high school principal, commented, "I'm not a big fan of initiatives . . . you can quickly turn a teacher just by presenting them with two, three initiatives a year . . . and then not finish it." Instead, Adm 4 noted, "my main initiative has been, we are going to raise expectations, we are going to raise standards, and we are going to talk about curriculum." According to Adm 4, curriculum mapping provided a mechanism for achieving this purpose.

The interview with Adm 1, a junior high principal, was a part of the pilot study. Adm 1 provided limited initiative comparisons because that topic was not directly addressed during the interview. However, Adm 1 indicated that poor student achievement on state tests used to measure Adequate Yearly Progress (AYP) had resulted in an emphasis on implementing restructuring plans and that mapping "was not at the forefront of discussions [and had been] . . . kind of put over to the side." The restructuring plan emphasized new discipline policies, scheduling of students to include exploratory classes and other types classes to meet academic needs, and the development of co-teaching classes.

Sixty-six pieces of coded data obtained from the participants' comparative initiative statements were used to develop Table 1. It is interesting to note that 61

comparative perceptions were based on comments provided by the elementary principal which could relate to the fact that the majority of initiatives within the district were focused at the elementary school level.

Table 1

*Administrative Perspectives of Factors Leading to Initiative Buy-in*

Cover and included terms	Percentage of Comments
Engaged Communication	43.94%
Shared Vision	27.27%
Moral Purpose	9.09%
Two-way Communication	7.58%
On-going Resources	16.67%
Professional Development	12.12%
On-site Support Team	4.55%
Articulated Implementation Plans	34.85%
Measurable Accountability and Monitoring	4.55%

Perspectives provided by Adm 2, an elementary principal, were based on implementation observations rather than a personal leadership role. Adm 2 briefly discussed professional development which had been provided to teachers by outside consultants in various reading initiatives (e.g., Building Blocks, Big Blocks, Four Blocks, Michael Haggerty, and Linda Mood-Bell), but he focused his comments primarily on strategies the district was using to comply with a new state mandate relating to Response to Intervention (RTI).

According to Adm 2, Adm 5, the literacy coach, and reading specialists were engaged in a year or two advanced training and planning for implementing RTI

strategies. A component of the district's Response to Intervention (RTI) plan included Dynamic Indicators of Basic Early Literacy Skills (DIBELS) training and piloting DIBELS in a small and large elementary school building. An outside consultant was hired to assist teachers and the reading coach during the implementation process, which included testing "all the kids [and] benchmarking them three times a year." Student achievement data were shared with teachers, and intervention plans were co-developed and applied with students. Student achievement was monitored through benchmark testing.

Data analysis indicated that principals were not actively engaged in RTI leadership roles nor did they have leadership roles in any of the reading initiatives. However, Adm 2 indicated that principals and teachers were aware of multi-year RTI implementation plans. Adm 2 stated, "I think there's a big contrast [between RTI and curriculum mapping]...I think there was more of a push for the RTI, I think there's more support for RTI, and again, it's a mandated . . . expectation." With RTI, teachers and the leadership team were engaged in data informed decisions to improve student achievement. Adm 2 suggested that the RTI initiative is "more concrete . . . [and that] we've had a lot of very good meetings and feedback and a lot of positive comments". However, when compared to perceptions of curriculum mapping, Adm 2 stated, "I don't think they [teachers] felt like, boy, I can use this everyday in my room . . . I don't think they [teachers] feel like its directly affecting student achievement . . . I don't think they saw the value of it."

When queried as to the status of the other reading initiatives, Adm 2 indicated that “we were totally RTI focused this year.” However, Adm 2 also stated that “the teachers are still saying...how do we do everything that you want, that you expect us to do on top, something on top.” Adm 2 suggested that,

it does seem like, especially to the teachers, that we are trying everything and that’s probably not the best approach [because it does give the impression of] this will be gone type of thing” which makes it difficult for teachers to buy-in to an initiative.

Adm 2’s comments suggest that the district has an implementation history in which support and commitment for an initiative is short-term.

Participants were more aware of the challenges they had experienced as a result of implementing mapping than they were of leadership recommendations for implementing a mapping initiative. Table 2 was based on 366 pieces of coded data and represents perceptions concerning leadership factors that inhibit initiative buy-in and sustainability. Although data used to generate Table 1 was primarily collected from one administrator, a more balanced representation from the five participants was used to generate the data for Table 2.

Table 2

*Administrative Perspectives of Leadership Attributes Inhibiting Buy-in*

Cover and included terms	Percentage of Comments
Inadequate Communication	37.16%
Limited Shared Vision	28.42%
Limited Moral Purpose	3.28%
One-way Communication	5.46%
Limited Resources	15.57%
Time	2.46%
Professional Development	11.75%
On-site Support Team	1.37%
Avoidance of Organizational Barriers	25.14%
Traditional Mental Models	11.48%
Negative Culture	13.66%
Inadequate Implementation Plans	21.31%
Limited Accountability and Monitoring	.82%

Data in Table 2 suggest that the key leadership attribute inhibiting initiative buy-in relates to inadequate communication that fails to develop a shared vision of the relevance and potential benefits of curriculum mapping.

Table 3 was based on 181 coded pieces of data related to leadership recommendations. The majority of the recommendations came from the high school principal (105 out of 181) and Unit Office administrators (49 out of 181). The elementary principal provided limited recommendations about leadership (1 out of 181).

Table 3

*Administrative Perspectives of Leadership Attributes to Promote Buy-in*

Cover and included terms	Percentage of Comments
Continual Communication	64.08%
Shared Vision	47.51%
Moral Purpose	14.36%
Two-way Communication	2.21%
Sufficient Resources	8.28%
Time	1.10%
Professional Development	6.63%
On-site Support Team	.55%
Build Organizational Bridges	18.78%
21 <sup>st</sup> Century Mental Models	10.50%
Positive Culture	8.28%
Articulated Implementation Plans	8.29%
Measurable Accountability and Monitoring	0%

Data in Table 3 suggests that a key leadership attribute for promoting initiative buy-in is continual communication that fosters a shared vision of the relevance and potential benefits of curriculum mapping.

The patterns which emerged from the data provided insights into a cause and effect relationship perceived as leading to initiative buy-in. Key factors for buy-in suggested by the data in Table 1 and Table 3 included communication that develops a shared understanding of the purpose for implementation and a shared vision as to how components within the initiative would be used to achieve stated goals. Clearly articulated implementation plans were also emphasized as factors for buy-in. Data in Table 1 emphasized provisions of on-going resources (16.67%), which included the

availability of on-site support teams (4.55%); however, these factors were deemphasized in the leadership recommendations presented in Table 3. Notable discrepancies between Table 1 and Table 3 relate to articulated implementation plans as well as accountability and monitoring. Zero percent of the leadership recommendations in Table 3 related to accountability and monitoring, but 4.55% of the comments in Table 1 related to accountability and monitoring. Comparative initiative factors in Table 1 identified articulated implementation plans (34.85%) as a key factor for initiative buy-in, but in Table 3, only 8.29% of the recommendations related to implementation plans.

Although similar domains appear in Table 1 on comparative factors, Table 3 on leadership promoting buy-in, and Table 2 on leadership inhibiting buy-in, there are notable differences among elements. Data from Table 1 and Table 3 suggest a relationship between two-way communication which develops a shared vision concerning the relevance and benefits of an initiative and initiative buy-in. Conversely, data in Table 2 suggests a relationship hampering buy-in and sustainability that includes inadequate communication of the benefits and purposes of mapping and an emphasis on one-way communication. A domain appearing in Table 2 and Table 3 which was absent in Table 1 relates to perceived cultural and organizational factors which might impact buy-in and sustainability.

**Theme 1: Communication ambiguity.** Data suggests a causal relationship between communication and initiative buy-in which underscores the importance of developing a shared vision and purpose for an initiative. However, interview data

indicates discrepancies in perceptions concerning the implementation rationale or purpose for mapping and ambiguities in vision.

Unit office administrators, the high school principal, and the elementary principal concurred that the impetus for implementing curriculum mapping began at the high school level. Adm 4's interest in mapping was the result of observing:

teachers who were teaching the same subject who did not know what the other was doing [so that] kids [were] getting a multitude of different experiences in what should have been the same class, the same curriculum.

The unit office administrator, Adm 3, verified that the impetus for implementing curriculum mapping was that the high school principal had "identified problems at the high school in terms of the curriculum seemed to be so disjointed." Adm 3 admitted that at first, "even myself and the assistant superintendent weren't necessarily sold on it, but we wanted to see."

The concept of curriculum mapping via an Internet-based software system was also the result of Adm 4's search for a tool which would provide a means of organizing curriculum:

that would somehow allow us to discuss what these curriculum issues are within departments and then school-wide as well and have a tool to organize it and have a way of looking at what we are doing and talking about it together and try to eliminate those differences and the variances and the duplication that was going on from class to class.

Adm 4 related that once, “I came across it [curriculum mapping]...I knew, I thought, that was the answer and that’s how the initiative started.”

I was in attendance at the February, 2005 school board meeting in which Adm 4 related concerns pertaining to content gaps and persuaded school board members to purchase user rights to an Internet-based curriculum mapping software system and professional development services for initiating curriculum mapping during the 2005-2006 school year. Prior to implementing mapping, Adm 4 initiated discussions about mapping “to small groups of teachers, department chairmen, kind of planting the idea, this is what we need to do.” Adm 4 suggested that curriculum mapping “would be a good way to organize our curriculum, a good way to update, [and] a good way to do the articulation we need to do.”

Adm 4 attempted to build a shared vision and purpose for implementing curriculum mapping by engaging high school teachers in mapping discussions. Adm 4 emphasized that “I sold the idea [curriculum mapping]. I planted seeds here and there...I didn’t cram it down anybody’s throat.” Adm 4 indicated that during the Master Map development phase, mapping had been instrumental in helping to identify gaps and redundancies among teachers in a department. Adm 3 verified that, as a result of the high school teachers’ collaborative efforts, map building “caused the curriculum to come together and most of the gaps got filled.”

Adm 4 stated that maps were “primarily being used with new teachers” as a communication tool for identifying course expectations. Mapping was also used as a communication tool during vertical articulation sessions with junior high teachers.

According to Adm 4, Master Maps developed by high school teachers provided junior high teachers with insights into “where they [students] need to be able to jump off at [in terms of content and skills at] the ninth grade level.” Adm 4 lamented that “when we meet with those teachers at the middle school level, it’s hard to say what is going on there [because] there’s no evidence” since junior high teachers do not have Master Maps.

The elementary principal acknowledged that the concept of mapping within Ward’s Mill School District #4 originated with the high school principal’s effort to align curriculum with assessment standards. However, when asked about the implementation rationale for mapping at the elementary level, the response was, “I really don’t know. It seemed to me like the elementary initiative came from...you [the researcher] and Adm 5.”

Due to student performance in reading, unit office administrators mandated that elementary teachers commence the mapping initiative with the development of Diary Maps for reading. Adm 2 suggested that reading was “the hardest content area to start with.” Adm 2 thought that reading was “so large that they [teachers] probably felt like it was a little bit overwhelming.” Although Adm 2 thought the content area selected was problematic, Adm 2 admitted, “I really don’t know how to make a better case” for mapping in a different content area. Adm 2 expressed uncertainty as to how mapping “directly ties to raising student achievement levels [and] how by curriculum mapping we can help students achieve or become a better teacher.” Although Adm 2 expressed the concern that “I thought you [the researcher] did a very good job of doing that, I don’t

think the administrators did a good job.” Adm 2 added, “I think the lack of preparation of the administrators probably didn’t help.”

Adm 2 also stated that during teachers’ meetings “I was trying to relate to my teachers that...we are looking for gaps and redundancies.” Adm 2 thought that those gaps “were worthy goals or worthy things to look at and think about.” However, Adm 2 stated that quality maps needed to be completed “to actually see where the gaps and redundancies are.” As a component of my responsibilities during the 2007- 2008 school year, I helped elementary teachers develop their reading Diary Maps. Fourth quarter reports submitted by myself at the end of the 2007-2008 school year indicated that the majority of elementary teachers completed their Diary Maps. However, Adm 2 admitted that the maps that had been created by the teachers had not been used to make School Improvement Plan (SIP) connections or to identify curricular gaps and redundancies. Interviews with elementary teachers verified that nothing had been done with mapping during subsequent years. Although the mapping software system afforded teachers the option of rolling maps from one school year into the next so that modifications could be made as necessary, a review of the maps housed in the system verified that no maps were available for elementary teachers at the 5 attendance centers during the 2008-2009 and 2009-2010 school year.

The junior high principal was the only administrator who did not acknowledge that the concept of mapping originated at the high school level. Instead Adm 1’s response was,

I was looking for a tool that would help teachers to be able to utilize their time more efficiently...I was looking for a way to better organize information to help new teachers out and veteran teachers to get rid of the holes and gaps.

Although Adm 1 had a vision concerning how maps might serve as a tool for new teachers and might be used during departmental meetings, nothing had been done with the maps teachers had created. Adm 1 indicated that although some teachers do have Diary Maps, “a good portion of them do not.” Adm 1 noted that several teachers “think it’s a fad...an educational research fad [and] they don’t see the importance” of it. Adm 1 stated that “a good portion of them think it’s going to go away.” However, Adm 1 emphasized that mapping is “not going away. It’s just kind of under the surface because of the restructuring plan.”

Adm 1 hoped teachers would realize that “the Diary Map is a part of that priority [restructuring] without coming out and saying that [because] that’d scare them.” Adm 1’s strategy for promoting mapping was to “put on their [teacher] evaluation [to] continue to work on curriculum mapping, Diary mapping.” However, Adm 1 noted that referencing mapping on the teacher evaluation was problematic for “new teachers [because they] have not been trained yet.” Although Adm 1 thought it was important to provide training for new teachers, there were no specific plans for providing that training.

Although most participants agreed that mapping had been initiated as a possible solution to a problem noted at the high school level, it quickly became a top-down mandate. Adm 3 indicated that:

we met, I think, a great deal of resistance from the other principals when we started pushing it down the grade levels and a lot of that was probably because they didn't get adequate training [and] advanced preparation for it. [Also], we attempted to make this thing happen district-wide over a three or four year period [but]...we probably should have planned on a 10 year process.

Adm 3 suggested that resistance from principals at the junior high and elementary school levels might have been the result of inadequate knowledge in curriculum mapping and preparations for implementing this initiative.

**Theme 2: Inadequate knowledge acquisition and leadership preparation.**

Data suggested there was limited acquisition of mapping knowledge and engagement of administrators during the implementation process. Data also suggested that knowledge of mapping was primarily based on isolated learning for administrators at the high school, junior high, and unit office and administrators at the elementary level were afforded limited opportunities for collective learning. The data indicated that administrators were not engaged in district-wide professional development opportunities and were not provided with opportunities to develop a shared vision and purpose for mapping.

Marzano (2005) argued that leaders during a second-order change requires in-depth knowledge of the initiative in order to foster a shared vision, moral purpose and to appropriately support teachers through the change process.

Unit office administrator, Adm 3, admitted doing a “cursory amount of research on-line and [had] spoke[n] with some people [before] we decided to give it [curriculum mapping] a shot.” Since “we had an administrator [Adm 4] that was willing to go the

extra mile,” Adm 3’s perceived role “was primarily giving the go ahead to start the experiment.” According to Adm 3, in education one must “be willing to experiment and to be willing to succeed and to be willing to fail.”

Unit office administrator, Adm 5, concurred that limited research had been done prior to implementation and suggested that both unit office administrators understood “general concepts” about mapping. Adm 5’s role in the mapping initiative was “more limited than I would want it to be” because he was “pulled in different directions, for various reasons, a lot of it, litigations.” Therefore, Adm 5’s perceived leadership:

role has been to say...this is something we want to have happen. We’d love to see this happen...and trying to provide resources for it [mapping] in terms of time...software...and training.

Adm 4 also had done limited research concerning mapping and had relied upon software consultants to provide mapping training. Adm 4 suggested that initial challenges were partially due to his lack of sufficient knowledge in the mapping process. Although Adm 4 admitted to having insufficient knowledge of mapping, Adm 4 did have a vision for how mapping might be used to address a site-based problem. As a result of the initial setbacks, Adm 4 assumed a more active role in the implementation process. Adm 4 indicated that he assumed a role of “instill[ing] a sense of confidence in that this [curriculum mapping] is going to be around and that we are going to use it...[and] I had to make sure we used it when we had the opportunity.”

Adm 1’s preparation in relation to implementing curriculum mapping included attendance at a “workshop...[which was] just an overview of mapping through the

product.” Based on the information from the workshop, Adm 1 developed a Power Point presentation about “what the importance of mapping would be...just a little overview of the workshop” and presented it to a small group of teachers. Adm 1 stated that “in the fall [of 2005]...we had presenters [from the software company] and ½ day workshops [for teachers].” I happened to attend the same workshop as Adm 1. Upon completion of Adm 1’s interview, I wrote a journal entry (see Audit Trail B2 in Appendix B) that expressed doubts about the fact that attendance at the workshop might be insufficient preparation for leading an initiative unless the perceived role was to provide resources. The primary leadership roles assumed by Adm 1 were to present an overview of mapping and to arrange professional development opportunities for the teachers.

During the summer of 2005, I attended the National Curriculum Mapping Institute. Although I recommended sending a team of administrators, I was the only representative from Ward’s Mill School District #4 to attend this summer institute. Archival documents indicated that on August 12, 2005, I met with Adm 5 to share information from the Institute and to recommend names of national curriculum mapping consultants whose services the Wards Mill School District might enlist. At the request of Adm 5, I contacted and made arrangements for a national consultant to meet with elementary principals in April, 2006 and to conduct an introductory workshop for elementary principals and teachers during the summer of 2006.

In the interim, Adm 5 directed me to prepare and conduct a book study with the elementary principals and to collaborate with the national consultant in preparation for the April session. A content analysis of e-mail correspondence between the consultant

and myself from January through April, 2006 as well as my administrative professional development map and meeting agendas, indicated that elementary principals were engaged in a variety of preparatory activities including (a) brainstorming and categorizing implementation concerns on Post-It notes which were used by me to develop guided materials for the book study, (b) participating in a focused study using two mapping books, (c) brainstorming sustainable change suggestions, (d) discussing quality map characteristics and examining possible mapping formats, and (e) discussing topics to be addressed during the 2006 summer workshop.

I encouraged elementary principals to write a Diary Map; however, this activity was met with resistance, and only two of the five principals attempted to generate a map. A February, 2006 email from Adm 6 (pseudonym for an elementary principal not participating in an interview) stipulated that “the diary mapping activity does not seem to fit our particular situation.” Although the consultant provided principals with examples of administrative maps, principals did not generate maps. When queried about professional development opportunities afforded to administrators, Adm 5 indicated that “district-wide, the only thing we [unit office] have provided is what you’ve [the researcher] done for us in those initial meetings.” The initial meetings referred to by Adm 5 were limited to elementary principals.

Unit office administrator, Adm 3, identified one of “the biggest challenges were the frontline administrators” in that they “need to be able to do maps themselves in order to be coaches to the teaching staff.” Adm 3 acknowledged that “it’s difficult to do that because it’s not necessarily a meaningful activity for them because they are not teaching

classes.” However, administrative maps were developed based on their leadership responsibilities and roles rather than on a content topic and therefore could be a meaningful activity as well as a method for documenting school improvement efforts.

Additional preparations included participation in a workshop. I located curriculum mapping workshops which were held within a day’s driving distance from the school district. Professional development records indicated that four of the five elementary principals and I attended a workshop on February 23, 2006 that was presented by representatives in a school district that used the same mapping software as Ward’s Mill School District #4. Artifacts from the workshop indicated that presenters discussed their implementation plans, challenges, and progress; provided sample maps; and demonstrated usage of various reports and search features available within the software program. Although Adm 5 acknowledged that some of the principals had attended a workshop, Adm 5 pointed out that the workshop had “not been mandated” and suggested that the motivation for attendance might have been “to get administrator’s academy credit.” Each of the administrators participating in the interviews suggested that their lack of mapping knowledge had been problematic.

**Theme 3: Inadequate administrative engagement during implementation process.** Participants, by their own admission, had little to do with the planning and implementation process. During the 2005-2006 school year, Adm 4 and Adm 1 had the responsibility of procuring and scheduling professional development sessions for teachers they had selected as members of the core team. Each principal selected teachers representing different disciplines and grade levels to serve on the core team and to

participate in the initial training. Prior to presentations by software company consultants, Adm 1 indicated that she had presented a brief overview of the mapping process and had given teachers a template for map development. Teachers were expected to generate maps prior to training from the software consultant based on Adm 1's directions. Adm 4 indicated that he had "planted seeds" concerning the implementation rationale and intended benefits which might be derived from the mapping process.

Prior to commencing the mapping initiative at the elementary school level during the 2006-2007 school year, Adm 5 and the elementary principals met with me at the unit office. The April 25, 2006 agenda and the my professional development map indicated that one of the purposes of the meeting was to provide principals with an opportunity to discuss mapping concerns prior to the April 27, 2006 initial meeting with the national consultant. In one of the activities facilitated by me, administrators generated a list of items under various categories in a sustainable change chart I presented to them. The categories included the following: (a) vision, (b) skills, (c) incentives, (d) resources, and (e) action plan.

I sent an email to the national consultant detailing the outcomes of the meeting. The administrators indicated that they did not have the necessary skills in mapping to provide assistance to teachers and that they did not have an implementation plan. During the meeting, I shared an administrator's map sent by the national consultant, and Adm 5 told principals that developing Diary Maps was an appropriate activity. However, interviews with participants indicated that administrators did not develop maps.

Administrators reviewed a sample reading map generated by me that included revisions suggested by the national consultant. Principals were concerned about how they would “sell the teachers that this is a process requiring revisions [and] not a one time activity.” Principals were provided with an opportunity to provide input concerning the basic reading map format developed by me with input from the national consultant. The principals thought that since the format was aligned with the reading categories in the state standards, it would make it easier to “identify gaps in the [reading] series” and would “focus attention to the standards.”

Email indicated that the administrators were depending on the national consultant to help them develop implementation plans and to help define the roles and responsibilities of the unit office, building principals, and teacher leaders. After the April 27, 2006 meeting with the national consultant, the consultant sent an email to the elementary principals, Adm 5, and me that recapped immediate implementation plans discussed during the meeting and proposed a three year action plan. Items for immediate action included the recommendation to identify teacher leaders and to provide teachers with time for mapping. The national consultant stressed the importance of building mapping time within the school calendar. The national consultant indicated that administrators should:

start now to think creatively about providing/ creating time for teachers to (a) learn about mapping and all its elements, (b) actually mapping for the next school year, [and] (c) meeting to discuss all forms of data, including maps bi-monthly....This is not an initiative where you can do it once a grading period!

The national consultant stressed the importance of developing job descriptions for teacher leaders and identifying teacher leaders to serve as members of three different leadership teams. The national consultant indicated that teacher leadership teams should include members of the site-based Curriculum Mapping Council, the district-wide Curriculum Mapping Cabinet, and a Curriculum Mapping Cadre. The national consultant emphasized the importance of collaborative engagement of teachers and administrators in the development and monitoring of implementation plans for the curriculum mapping initiative. I was given the responsibility of generating job descriptions and expectations for members of the leadership team. I collaborated with the national consultant to develop job descriptions and expectations for members of the leadership teams. This document was submitted to the unit office by the end of the 2005-2006 school year.

The national consultant and I collaborated to prepare and to facilitate a summer curriculum mapping camp for teachers and elementary principals from June 15-17, 2006. Prior to leaving the area, the national consultant, Adm 5, and I met for an exit meeting. A handwritten note from Adm 5 indicated that she wanted the national consultant to (a) keep defining roles [and] responsibilities of central office, building principals, CM Coordinator, and teacher leaders [and] (b) keep filling in gaps on vision, skills, incentives, resources, action plan, [and] sustainable change.

An archival document, the District Improvement Plan, was retrieved from the district website. This document was posted on November 15, 2006. It included a chart indicating vague implementation timelines and expectations for curriculum mapping from 2006-2009. It indicated continuation of curriculum mapping at the high school and

junior high school levels from 2006-2009, and the expected goal was that mapping would be completed and gaps would be identified by teachers. The activity specified for the elementary level was to implement the process of curriculum mapping from 2006-2009, and the plan indicated that the roles and responsibilities for mapping rested with teachers, administrators, and me. The document indicated that curriculum mapping was a strategy employed by the district as a means of “aligning the curriculum of all content areas” to the state standards.

Professional development records for 2006-2007 school year indicated that the national consultant provided 25 days of training for teachers at each of the three instructional levels from October, 2006-April 20, 2007. Once the unit office determined the dates the national consultant was to be available within the district, it was my responsibility to coordinate the dates and times that the national consultant was to work with teachers at each instructional level. Email correspondence between the principals and myself indicated that principals assumed the responsibility for arranging for the substitutes and determining which teachers would be provided with training on specific dates. I attended all of the training sessions, provided individual assistance to teachers as needed, and eventually co-facilitated training for the teachers.

The national consultant sent the unit office and me an overview of the mapping activities and progress achieved during each of the training sessions. The national consultant also provided insights into teacher concerns voiced during the sessions and implementation recommendations. In the *Initial School Meeting Report*, the national consultant related three concerns voiced by teachers during the October and November

sessions. The three concerns addressed inadequate time provisions for mapping, fears that teachers would be reprimanded if the “maps do not reflect the adopted curriculum verbatim,” and concerns that mapping was the latest district fad. According to the national consultant, “there were many verbal comments shared by teachers that they did not want to buy-in to the extensive learning processes for curriculum mapping due to the fact that the district’s history of large-scale initiatives longevity has not been high.” The consultant had told teachers that teacher leaders were going to be identified to provide input into the implementation process and told them that time provisions would be afforded to teachers in districts in which mapping was successful. The consultant recommended that teachers “keep track of the clock-hour time they individually spend mapping outside of the work day and e-mail this data to Valerie Lyle so that she can provide administrators and board members with the data.” Teachers did not follow the consultant’s recommendation.

The consultant’s April 16-26, 2007 debriefing provided an overview of mapping progress and described how I had engaged teachers in search and report options available within the software system and how this information might be used to make school improvement connections. The consultant voiced concerns that what teachers learned during the April sessions might “be forgotten if time to map is not consistently and regularly provided.” The consultant recommended that teacher leaders be identified and training be provided to them and administrators during a summer workshop and that the teachers and administrators needed to “be involved in establishing the district goals for 2007-2008.” A list of potential teacher leaders was submitted to the unit office at the end

of the 2006-2007 school year. However, the list was returned to me, indicating which teachers the unit office did not want as teacher leaders.

During the summer of 2007, the national consultant and I co-facilitated a week long workshop with high school teachers to help them develop Master Maps. Adm 5 was unable to attend an exit meeting; therefore, the consultant and I met with the Superintendent, Adm 3. In a subsequent meeting with me, Adm 3 indicated that the consultant's services would not be engaged during the 2007-2008 school year and that I would be given the responsibility of providing professional development for teachers and possibly for the principal. As directed, I developed a proposal for administrative training centered on how to use maps and how to use the software system to make school improvements, but I was not given the opportunity to provide training to principals. However, the front section of the *2006-2007 Curriculum Mapping Needs and Goals Report* that was prepared by me contained a section that provided administrators with print screens and directions for using various search and report options within the software system and suggestions on how these options might be used to make school improvements. I distributed the report to principals at each instructional level and to unit office administrators.

Email correspondence between the principals and myself indicated that the unit office had stipulated that a curriculum mapping goal for 2007-2008 was to identify and train teacher leaders. I personally met with principals at each of the three instructional levels to discuss their recommendations. Email correspondence indicated that teacher leader recommendations for the elementary and junior high levels were submitted to the

unit office on September 7, 2007, and the high school recommendations were submitted on September 11, 2007. An October 1, 2007 memorandum from the unit office to the me indicated that teacher leadership teams would not be formed during the 2007-2008 school year. I was not provided with a rationale for their decision.

The October 1, 2007 memorandum described my responsibilities for the 2007-2008 school year. I was to provide a ½ day training session for new teachers at each of the instructional levels; was to schedule grade level sessions for elementary teachers; and was to submit quarterly reports to the school improvement facilitator indicating teachers' progress toward achieving the unit office's goal of completing development of Diary Maps for the 2007-2008 school year. I did not conduct face-to-face meetings with any of the unit office administrators. It was my responsibility to submit a quarterly proposal of the training dates and participants to the school improvement facilitator and the elementary principals. Email correspondence with elementary principals indicated that their involvement in the mapping process was to primarily ensure that substitutes were available so that teachers could participate in training sessions facilitated by me.

The national consultant emphasized the importance of identifying site-based and district-wide teacher leaders to collaboratively work with administrators in order to develop implementation plans. Although the unit office directed me to garner input from the principal concerning his or her recommendations for teacher leaders, the unit office determined that teacher leaders would not be identified. The elementary principals' primary roles and responsibilities during the implementation process were to schedule substitutes and inform teachers of professional development dates, times, and locations.

According to Adm 2, elementary principals were not engaged in the development of the 2007-2008 implementation plans. During the interviews, administrators were asked to identify their perceived challenges experienced during the implementation process. The administrators presented various challenges including cultural elements that created organizational change barriers.

**Theme 4: Organizational change barriers.** The administrators identified challenges that encompassed issues relating to resources, lack of vision, and negative cultural issues among teachers and administrators. For example, the unit office administrator, Adm 3, indicated that one of the “biggest challenges were the frontline administrators.” Adm 3 thought that administrative difficulties were the result of principals getting “next to none” professional development to prepare them for their leadership roles which made it difficult to serve as a coach and encourager as well as for them to buy into the initiative. Adm 3 added that,

it is always difficult when you do a top-down requirement with changes of this magnitude because not everyone is going to buy-into it...and when they don't buy into it, it really doesn't meet with success.

Adm 3 also thought some of the challenges were the result of attempting to “move as quickly as possible to implementation because we don't have the necessary funding to do research and development.”

Adm 3 also noted that additional staff issues related to teacher morale because “they saw it as a lot of extra work [and] they had difficulty making the connections of where it was really going to be beneficial to them.” To help address these problems,

teachers were provided with “additional training, we tried to bring in additional experts...and more or less just a soft pat-on-the back.” Each of the administrators noted similar time and relevancy complaints from teachers. However, Adm 5 also stated there were “administrators who say they don’t have time for curriculum mapping.” Adm 5 emphasized that “if the principal doesn’t exhibit that leadership for school improvement, you are not going to accomplish any.”

In addition to time and relevancy complaints, each of the principals indicated that teachers expressed problems with formatting issues. Some of the high school and junior high school teachers were provided with training from a software consultant and a national consultant. Adm 1 stated that “when you bring presenters in and you say curriculum mapping, everybody assumes everybody is talking the same things and they’re not.” Adm 1 and Adm 4 indicated there were enough differences in the formatting messages to negatively impact mapping progress. Although Adm 2 also noted formatting complaints from teachers, their resistance was more about relevance. Additionally, Adm 2 suggested that teachers could not understand why they were being asked to map curriculum which had been mandated by the district, and many teachers thought the process was a waste of time.

Adm 1 and Adm 5 also identified negative culture issues which presented challenges. Both of these administrators were under the impression that some of the challenges were the result of unwillingness on the part of teachers to collaborate and share ideas and materials. Part of this teacher reluctance to share ideas and materials stemmed from fear. Both administrators thought teacher fears might originate from

having maps housed in an Internet-based software system where they could come under public scrutiny. In addition to collaborative issues among teachers, Adm 5 indicated that there were collaborative issues among the principals which might be a result of their career stage or because some principals operated under a “good old boy” exclusionary model.

The data indicated that principals thought that some of the challenges they faced were due to lack of preparation and collaborative development of implementation plans. When asked about an implementation plan, Adm 1 stated, “I think there’s a plan...I think there’s an overall plan” but was unable to provide specific details. Although Adm 2 served as a lead principal at the elementary level, Adm 2 viewed his role as “a liaison to the teachers and you [the researcher] and you and the administration.” Adm 2 indicated that elementary principals “weren’t involved in the planning” process. Although principals noted that informal mapping discussion had occurred in administrative meetings, they were unsure of mapping progress throughout the district. Adm 4 stated,

I wouldn’t say that it’s a district-wide initiative. I guess it is. I think it’s been handled differently in different buildings or not really used at the same level...I think as a building leaders, as an administrator, even as a district leader, if this is something we are going to pursue, it shouldn’t be left to the discretion of the building administrator...I think as a group we probably should have done this [planning]. It shouldn’t be a fragmented thing.

Each of the administrators noted that challenges resulted from lack of a consistent message and emphasized a need for unified plan, instead of what Adm 5 referred to as a “hodge-podge kind of thing.”

Thus, the leadership challenges and experiences during the implementation process impacted participants’ perceptions of the leadership roles and responsibilities required for implementing the Jacobs model of curriculum mapping. As a result of their experiences, participants willingly shared their perceptions of leadership roles and responsibilities for administrators who might be contemplating the implementation of curriculum mapping in the near future. Data suggested that leadership roles and responsibilities could be subdivided into proactive leadership and active leadership.

### **Summary of Findings for Administrative Case**

*1. How does the implementation of the Jacobs model of curriculum mapping impact administrators’ perceptions of leadership roles and responsibilities?*

One finding of this study is that, as a result of implementing the Jacobs model of curriculum mapping, administrators realized their roles and responsibilities encompassed more than providing resources. They realized that their responsibilities required them to assume proactive and active leadership roles. Proactive leadership refers to perceptions of leadership roles and responsibilities that are assumed before commencing the curriculum mapping initiative. Active leadership refers to perceptions of leadership roles and responsibilities that are assumed during the implementation process.

Administrators recommended that those administrators who intend to implement mapping should expect to assume proactive responsibilities that include the following: (a)

developing knowledge in curriculum mapping and the processes involved therein, (b) identifying potential cultural and resource barriers and developing a plan for dealing with these issues, (c) identifying examples which help build a case for the importance and benefits of mapping, and (d) collaboratively formulating implementation plans for a systematic change process. Adm 4 emphasized that “it shouldn’t be left to the discretion of some people.” Adm 4 also recommended that administrators should taking a year to improve their knowledge base, identify potential barriers, and formulate implementation plans before beginning the implementation process.

Adm 3 emphasized the importance of understanding the magnitude of change represented by curriculum mapping. For Wards Mill School District #4, curriculum mapping represented a second-order change, and Adm 3 acknowledged that “we should have planned on a 10 year process.” According to Adm 3, misunderstanding the magnitude of change may have resulted in “so many frayed feelings and nerves along the way that were probably unnecessary.”

Another finding of this study relates to active leadership roles and responsibilities for administrators during the implementation process. Active responsibilities that were recommended included the following: (a) assuming the role of a coach and an encourager, (b) presenting a clear and consistent message about mapping, (c) developing motivational strategies and providing incentives, and (d) making sure mapping information was utilized during curriculum discussions. Adm 4 was the only administrator to indicate that curriculum maps were used. Adm 4 was quick to

acknowledge that mapping was not being used “to the extent that it’s capable of being used.” However, Adm 4 emphasized that,

change is very difficult and we are moving slowly but we are moving. And you know it [curriculum mapping] has made an impact. I think it has been a positive tool and if nothing else, we have, to some extent, accomplished what was initially the problem.

Thus, the findings from the administrative case suggested a cause and effect relationship between the leadership roles and responsibilities assumed during the implementation process and the receptivity of curriculum mapping among teachers.

### **Teacher Cases**

Data for the three teacher cases were collected from teachers who represented the three instructional levels of high school, junior high school, and elementary school. Data collection followed the same procedures for each case. Data collection commenced with focus group interviews with four participants per case and was followed by one-on-one interviews. Unobtrusive data from documents, artifacts, and archival records were collected to triangulate the interview data.

Teacher case interviews provided participants with an opportunity to discuss perceived benefits and challenges presented during the implementation of curriculum mapping. Teachers provided comparative data between mapping and other district initiatives and conveyed perceptions concerning implementation characteristics which resulted in initiative buy-in or resistance. Additionally, teachers provided perceptions about the impact of leadership on the sustainability of curriculum mapping within Wards

Mill School District #4 as well as perceptions about leadership roles and responsibilities for implementing mapping.

### **High School Teacher Case**

Six hundred and six pieces of coded data from seven high school case participants were inductively analyzed based on assertions in change theory and mapping. This analysis resulted in the identification of domains relating to comparisons between mapping and other district initiatives, factors contributing to resistance or buy-in of curriculum mapping, and perceptions of leadership factors impacting sustainability of curriculum mapping.

Table 4 describes comparative initiative results and factors that contributed to initiative buy-in. Table 5 presents attributes of leadership which might inhibit buy-in and sustainability of mapping, and Table 6 describes participants' perceptions about leadership attributes for promoting buy-in and sustainability of mapping. A discussion of the patterns, relationships, and themes emerging from the data is presented following the tables. The findings were used to address the research question relating to teachers' perceptions of leadership roles and responsibilities and the impact of leadership on perceptions of sustainability of curriculum mapping within Wards Mill School District.

Table 4

*High School Perspectives of Factors Leading to Initiative Buy-in*

Cover and included terms	Percentage of Comments
Engaged Communication	91%
Shared Vision	44%
Moral Purpose	21%
Two-way Communication	26%
Resources	9%
Professional Development	9%

The seven high school participants were unaware of other site-based or district-based initiatives than curriculum mapping. Although the participants were provided with a copy of the interview protocol at least a week prior to their interview, only one of the participants was able to provide comparative initiative insights which were used to generate Table 5. The 43 pieces of coded comparative data came from a participant with 14 years of in-district experience, HS 6.

The three initiatives that HS 6 expressed buy-in for were either “under our former superintendent and assistant superintendent” or the “former principal.” Each of the current administrators had experience in previous districts. At the time of their interviews, eight of the high school principal’s 11 years as an administrators were in-district, 10 of the assistant superintendent’s 15 years as an administrator were in-district, and seven of the superintendent’s 23 years as an administrator were in-district.

Key factors resulting in buy-in related to vision, implementation rationale, and personal engagement and ownership in the implementation process. HS 6 provided similar buy-in perspectives concerning his involvement in developing local assessments,

Advanced Placement (AP) courses, and an athletic program. Prior to his involvement with state assessments, HS 6 discussed his involvement with “local assessments which we actually wrote as teachers and I enjoyed that” because it provided beneficial information for monitoring student learning. HS 6 was instrumental in promoting the concept and development of Advanced Placement (AP) courses at the high school. HS 6 had gone “to sites around the country” and “came back with knowledge” to share with the principal. Although HS 6 had played an instrumental role in encouraging colleagues’ interest in developing Advanced Placement courses, HS 6 emphasized that “we had a principal that understood it [AP] and wanted it to be in the system.” The third initiative that HS 6 spoke of related to “running an athletic” program. HS 6 indicated he “had to work with the superintendent to get the course going.” From HS 6’s perspective, buy-in of an initiative results when “teachers felt like they could own it, they could be apart of it, if it was really something that did matter; then, they work with it.”

Table 5 was based on 368 pieces of coded data and represents perceptions of high school teachers about the attributes of leadership that inhibited initiative buy-in and sustainability of mapping. Although data used to generate Table 4 was collected from one high school teacher, each of the seven participants provided data used to generate Table 5. The focus group and one-on-one participants noted similar challenges inhibiting buy-in of curriculum mapping, but the majority of the coded data used to develop Table 5 was derived from the three one-on-one interviews.

Table 5

*High School Perspectives of Leadership Attributes Inhibiting Buy-in*

Cover and included terms	Percentage of Comments
Inadequate Communication	23%
Limited Shared Vision	13%
Limited Moral Purpose	3%
One-way Communication	7%
Limited Resources	34%
Time	6%
Professional Development	25%
On-site Support Team	3%
Avoidance of Organizational Barriers	5%
Traditional Mental Models	4%
Negative Culture	1%
Inadequate Implementation Plans	30%
Limited Accountability and Monitoring	8%

Data in Table 5 described three major areas of leadership attributes that inhibited initiative buy-in. Data suggested that the three leadership attributes that inhibited initiative buy-in were the result of inadequate communication, resources, and implementation plans which lacked clarity of goals and expectations.

Table 6 was based on 195 coded pieces of data. Table 6 describes participants' perceptions of factors that promoted buy-in of mapping and its sustainability within Wards Mill School District #4. According to high school participants, leadership attributes for promoting buy-in included continual communication, adequate resources, and clearly articulated implementation plans.

Table 6

*High School Perspective of Leadership Attributes to Promote Buy-in*

Cover and included terms	Percentage of Comments
Continual Communication	59%
Shared Vision	38%
Moral Purpose	5%
Two-way Communication	16%
Sufficient Resources	14%
Time	8%
Professional Development	4%
On-site Support Team	2%
Build Organizational Bridges	2%
21 <sup>st</sup> Century Mental Models	1%
Positive Culture	1%
Articulated Implementation Plans	21%
Measurable Accountability and Monitoring	4%

Patterns that emerged from the findings provide insights into the cause and effect relationship of factors perceived as leading to initiative buy-in. A common factor for buy-in suggested by the data presented in Table 4 and Table 6 emphasized communication that promoted a vision concerning the benefits of the initiative and an opportunity for two-way communication. Table 6 suggests that additional contributing factors for buy-in included allocation of sufficient resources (14%) and clarity in implementation plans (21%). Although Table 6 listed domains not identified in Table 4, the discrepancies might be influenced by the lapse of time that occurred since HS 6's actual participation in the initiatives upon which the findings were based.

Table 5 was generated based on the perceptions of high school teachers about the attributes of leaders that inhibited initiative buy-in, and Table 6 reflected leadership factors that promoted buy-in; however, three key domains impacting perceptions that were emphasized in both tables included (a) communication, (b) resources, and (c) implementation plans. Patterns in the data suggested a relationship between administrative actions and these three key factors that impacted participants' perceptions of mapping and its sustainability.

**Theme 1: Mapping benefits promoting buy-in.** Each of the participants discussed benefits they perceived from mapping which included (a) alignment of curriculum to standards, (b) curricular pacing and organization tool, (c) the use of a communication tool which was especially beneficial for new teachers, and (d) identification of curricular gaps and redundancies. HS 3 described how curriculum mapping had raised awareness about the gaps between the curriculum and the standards, and as a result, science teachers “restructured our whole 9<sup>th</sup> grade science curriculum...so, it helped us realign some of our early science classes.” HS 4 concurred that mapping “let us know what gaps we have that we need to fill” but added, “I think that what it also revealed are significant overlaps...it cleared up some doubling in the past.” HS 6 noted that curriculum mapping “makes a teacher think” about whether one is “covering the standards [and] am I covering the state goals.” HS 1 agreed that curriculum mapping “makes you look at your teaching” and “helped you get totally organized to try to fit everything in;” however, HS 1 noted that the “most important [benefit from mapping] are the conversations and the changes that come from it.”

During my role as mapping coordinator, I was granted permission to create and distribute the *Curriculum Mapping Needs and Goals* survey as a means of monitoring implementation progress. The high school teacher response rate for the 2006-2007 school year was 36%, and for the 2007-2008 school year, the response rate was 60%. Findings from these surveys were used to triangulate participants' perceptions about the benefits of mapping relating to (a) curricular alignment, (b) identification of gaps and redundancies, (c) improved awareness about the standards, and (d) promotion of curricular dialogue. The 2007-2008 *Curriculum Mapping Needs and Goals* survey provided comparative trends data for the previously mentioned benefits of mapping. Table 7 was generated based on findings presented in the 2007-2008 *Curriculum Mapping Needs and Goals* survey report submitted to unit office administrators during the summer of 2008. Survey findings suggested that the survey respondents concurred with interview participants' perceptions of mapping benefits.

Table 7

*High School Trends in Mapping Perceptions*

Raised Awareness	Likert Response Percentages	
	Agree	Strongly Agree
State Standards		
2006 – 2007	50%	4%
2007 – 2008	59%	20.5%
Curricular Alignment		
2006 – 2007	71%	25%
2007 – 2008	64.10%	23.1%
Gaps & Redundancies		
2006 – 2007	67%	21%
2007 – 2008	66.7%	17.9%
Promotes Curricular Dialogue		
2006 – 2007	67%	12%
2007 – 2008	61.5	10.3

Table 7 suggests that the majority of high school teachers perceived similar mapping benefits conveyed by participants. Table 7 suggests an increase in positive perceptions of mapping from the 2006-2007 and 2007-2008 school years in relation to a raised awareness in state standards; however, the remaining categories indicated a decrease in positive perceptions.

HS 4 suggested that “for a new teacher, a well done map can be a Godsend.” HS 5 acknowledged that a curriculum map “gives a new teacher an idea of how to pace themselves...but other than that...I haven’t seen anything else that it’s good for.” HS 5 stressed that “I don’t need to know how to pace myself” and indicated that mapping the curriculum “did not change what I do in the classroom.” Although participants had

identified benefits of mapping, they also identified obstacles which had negatively impacted teachers' perceptions of mapping and resulted in wavering support or resistance of mapping. HS 5 expressed initial support of mapping and suggested that "I've sort of still bought into it, but I'm starting to lean the other way."

**Theme 2: Implementation challenges resulting in resistance.** Data suggested that inconsistencies in implementation plans (30%) and provisions of resources (34%) were key factors that negatively impacted perceptions of mapping. Two main resource challenges identified by informants as negatively impacting perceptions of mapping resulted from insufficient time provision (6%) and professional development challenges (25%).

In relation to insufficient time, a component of the implementation plan during the 2006-2007 school year included adding four half-days to the school calendar. These days were designated for School Improvement Plans (SIP) and were intended to provide teachers with extra mapping time. Although extra time had been provided, HS 1 suggested it was "not enough time in a row." According to HS 1, "you just get into it [mapping], you figure out how, because it's a long time between, and then it's time to leave." HS 5 agreed that too much time elapsed between mapping opportunities. HS 5 used a teaching analogy to explain frustrations related to mapping:

You know if we tell the kids something and then we like switch off to something else, and two month later go – oh, here's this test over what I taught, they haven't practiced it. How are they going to be able to do it? And that's the way I feel,

sometimes, with mapping is that we just don't get to use it enough to get better at it.

HS 6 suggested that "mapping is something you need to be kind of constantly in contact with" otherwise one has "trouble remembering how to even do it again. So, we had to go back and re-teach ourselves." HS 3 added that "other things come up [and] most teachers would probably say that's towards the bottom [of their priority list]." HS 3 noted that:

last year he, [Adm 4], was very specific about saying [what] this half day's [goal was and] he was real intentional about trying to get time for you to do it. It doesn't seem like it has been that way this year.

HS 7 concurred that, during the previous year, Adm 4 had "been specific" in his mapping expectations during the half-days but that mapping priorities were "not [emphasized] as much this year." HS 7 indicated that unlike the previous years, "we weren't really told, okay, you are expected to map. It was sort of ...if you have time left, then go ahead and map." HS 5 suggested that "it's kind of like we are going to put mapping on the back burner because this is more important." However, HS 7 suggested that maybe the de-emphasis might be that mapping is "to the point that most people have them [maps] done."

Besides limited time provisions, participants related professional development challenges that had negatively impacted perceptions of mapping. Professional development challenges were either the result of discrepancies in formatting messages presented during training sessions or the result of insufficient training opportunities. Professional development records for 2005-2006 were unavailable to me; however,

professional development records from the 2006-2007 school year indicated that 33 out of 77 teachers received one full day training session with the national consultant, 29 out of 77 teachers had one half day session, and 15 out of 77 teachers did not receive any training.

HS 3 indicated that “pretty much every department was represented” at the training sessions and that “one or even two people within a department” had been provided with training. HS 6 suggested that the lack of sufficient training meant that “some people couldn’t do it [write maps]” and “I don’t think the principal understood that.” HS 6 suggested that since “our principal never did it [wrote maps]” and “nobody in his department, his administrative team, has any writing experience,” they did not understand the challenges presented during map development.

Four of the seven participants had participated in a week long training session with the national consultant and me during the summer of 2007. However, the participants were unaware of additional professional development opportunities for high school teachers. HS 5 suggested, “I guess they figure everybody is trained and I haven’t seen as much offered, you know, for training the new teachers.”

When queried as to on-site provisions for training new teachers, HS 4 related that “there’s a mentor program that they have started where a seasoned teacher kind of shows them [new teachers] the ropes....but I don’t know of anything that is put into place” for providing mapping training. HS 5 offered, “So, it’s kind of like, okay, we’ve quite training; so, now the new teachers don’t know or it’s just left for us to show them how to do it.” HS 3’s understanding was “that ones that have gone through the [curriculum

mapping] training are kind of expected to take the new teachers under their wing and kind of show them the ropes.” Professional development records for the 2007-2008 school year indicated that I had provided new teachers with one half-day mapping session.

Participants also pointed out that a key factor that negatively impacted perceptions of mapping related to a midstream change in the initiative. HS 1 stated that the effect of the shift was “essentially all the work that we’ve done needs to be re-done because none of the things were written correctly.” HS 7 suggested that challenges initially experienced during the implementation process were a result of “the administrator had not really been trained ...and thought that it [mapping] was something other than what it really was.” HS 7 said that the principal “actually said to teachers, you know, I really kind of goofed here.”

The principal’s mapping epiphany was the result of attending a training session presented by the national consultant during the 2006-2007 school year in which Adm 4 learned of the different types of maps. Instead of collaboratively developed Master Maps that reflected the mutually agreed upon curriculum, teachers initiated work by developing individual maps. According to HS 7, “the administration realized that [collaborative development of Master Maps] was really where we wanted to be and not with the initial initiative.” HS 7 explained that the switch “was really confusing for teachers and I think it caused a lot of teachers to be very disgruntled.” HS 1 explained that

last year, it was all about Diary Maps [and] this year it’s Master Maps....but, why didn’t they start out...it’s sort of like they don’t know what they are doing. You

know? And, it's sort of like we are feeling our way.... It's a lot of re-work and we don't have a lot of time to put to re-working.

HS 7 concurred that the resulting impression was "that we don't really know what we are doing and we get started and we jump in and then, oh, we are going to back up and that is frustrating." HS 6 stated that the lack of implementation clarity was frustrating because "we just didn't understand the goal. Was it for the unit office to have it and say, look we are all up on curriculum mapping? We never got the answer."

Formatting a Master Map is slightly different than a Diary Map which meant the maps that had been developed needed to be modified. Additional challenges resulted from formatting differences between what teachers had been told by software consultants and the national consultant. HS 6 suggested that a presenter's "cheerleader" style also negatively impacted teachers. According to HS 6, "a lot of teachers were immediately skeptical about the people they put in front of us." Each of the participants emphasized that a key causal factor that negatively impacted perceptions of mapping were the result of conflicting formatting messages. HS 2 stated:

I had a good time doing this the first time I sat down and did it. I had a lot of aha moments. I went to one training and I thought, I can do this....I went to the next training...and then it fell apart.

HS 3 suggested that "it seemed to be such a big focus on format, format, format, not what are you actually doing [and] why are you doing it." According to HS 2, the impact of over emphasizing formatting resulted in "it [mapping] totally lost its purpose." For HS 2, formatting "was the big monkey wrench" in his department and that the change in

“formatting is where they started cursing blue streaks.” HS 7 described her thought processes as she made modifications:

I just sat there and I kept thinking, oh, I could be doing all these creative lessons, and I’m doing, you know, changing this format. So, I think that a lot of those hours would not have had to happen if we had know, really, what we were getting into initially.

However, HS 7 admitted that “as I started working with the newer initiative, I found that it really made more sense to me ... because it was more kind of specific.” HS 4 agreed that there had been an over emphasis on what seemed like formatting minutia, such as instead of using “numbers written out in words, you have to use numerical numbers.” However, HS 4 noted that, as a new teacher, she had been given a map that “was so vague that I had no idea” of what needed to be done; therefore, HS 4 suggested that “a well constructed map, I think, could be very helpful.”

**Theme 3: Limited accountability, monitoring, and usage of maps negatively impact perceptions.** Additional challenges concerning map development related to discrepancies in the content of a map and what actually occurred in the classroom. HS 4 suggested that a map

can be perfectly done and perfectly formatted but if that’s not what’s going on in the classroom, it has no benefits to students. And, ultimately, that should be our goal and everything we do should make the education that we present our students better – equip them better for what they need. So, I think mapping is good if it helps those changes be made but anybody can put the right thing on paper.

HS 2 also noted discrepancies in what appeared on the map and a colleague's classroom practices and suggested that "if you checked his map against, oh, my gosh, it's so far off that I can see where you [HS 4] are coming from."

HS 2 suggested that "all it takes is for them to be called on the carpet one time" and that would help eliminate some of the discrepancies. HS 7 stated, "I think that would be hard for principals to monitor because they are not in the classroom." HS 7 continued, "I know that our principal looks at them [maps] because" he has told me they are good and "every time I've been evaluated, since we started mapping, they've asked about maps. [But,] I've never really had to present them" to Adm 4. HS 5 noted that, during an evaluation, Adm 4 asked if her maps were "caught up", but she was unsure if Adm 4 actually "checked it." However, HS 5 knew of "another teacher [who] went in and they were asked that question and he was like, yeah. And then he came down to me and asked, 'Are my maps caught up?'" HS 5 explained that she had written the Master Maps and colleagues had copied them into their accounts without any modification which was why HS 5 had been asked if the maps were "caught up."

As a result of HS 5's comments suggesting that no differences would be noted among the departmental maps, I decided to compare the content of Master Maps housed in the Internet-based software program with Diary Maps. The software program provided by the district uses color to provide a visual cue for differentiating Diary and Master Maps. HS 5 had written most of the Master Maps during the 2007 summer training session facilitated by the national consultant and myself; therefore, I compared Master Maps and Diary Maps archived for the 2007-2008 school year. No differences

could be noted between the Master Maps and the Diary Maps housed for each of the department's teachers.

I decided to expand the comparison between Master and Diary Maps housed during the 2006-2007 school year, which was the time that the national consultant assisted the district. Sixteen of the 51 Master Maps, representing different disciplines, were compared with the corresponding Diary Maps. I discovered that 14 of the 16 comparative maps were exactly the same, one of the 16 maps had format modifications, and the difference noted between the Master and Diary Map of the remaining teacher was that in the Master Map the teacher indicated that he was an excellent teacher.

Although I did not examine other maps housed for this instructional level, Table 8 was generated to describe trends in maps housed in the internet-based system used by the district. I counted the number of Master Maps and Diary Maps archived in the system from the 2005-2006 school year through December of the 2009-2010 school year and the number of courses without maps. Patterns in the data indicated that the number of courses mapped peaked during the 2007-2008 school year, and since that date, the number of courses without maps has increased, the number of Master Maps has increased, and the number of Diary Maps has decreased.

Table 8

*High School Trends in Maps Housed in Internet-based System*

School Year	Courses Mapped	Types of Maps		
		Master	Diary	Without Maps
2005 – 2006	108	4	104	91
2006 – 2007	253	51	202	88
2007 – 2008	267	84	183	99
2008 – 2009	227	104	123	105
2009 – 2010	217	119	98	103

The decrease in the number of maps housed in the system coupled with the decrease in perceptions as to the mapping benefits described in Table 7 might suggest that the emphasis on mapping has decreased. This trend might also be related to participants' perceptions that the usefulness of the maps has decreased once they were created. This finding suggests that mapping might be viewed as an end-product rather than a process wherein mapping information is used to make school improvements.

Although participants identified benefits reaped from mapping during the initial implementation phase, HS 5 stressed, "We've just been shown how to map, how to put it in there." HS 4 stated, "I think that for such a long time to focus has been get them done....now that they are done, now let's start to revise and look for holes and hold people accountable." However, none of the participants knew how to use the maps that had been generated or the various search and report options available within the software system. According to HS 5, teachers were told that

Once we had everything aligned, there were reports that we could run to see which objectives we were hitting too much; what things we aren't hitting enough so we could compare that with how our kids are doing on their state test scores to see if we needed to readjust our curriculum. . . . [but] I haven't actually ever seen that report. . . . As far as I knew, that was an administrator kind of thing.

HS 7 noted that eventually "teachers will be expected to follow what they've mapped and I think it will be very hard to evaluate that, as an administrator."

Each of the participants concurred that implementation of mapping was expected to progress downward through the grade levels. According to HS 6, administrators told them "they were going to start at the high school; then it's going to go to the junior high; then it's going to go to the grade schools." HS 3 indicated that an original purpose for mapping "was to start from the beginning and seeing how we are getting to the end and look at the process from day one to graduation day. . . . that makes sense to me to do that [but] I don't think that has happened." HS 4 commented that one of the challenges that prevented the attainment of this purpose was that the "junior high doesn't have Master Maps." HS 2 suggested that "until you get all those Master Maps, there's no way you could trace it through."

Participants indicated that use of the maps had been limited. HS 7 shared her maps with teachers in another district; HS 5 stated that Adm 4 had given copies of her department's Master Maps to representatives from the State Board of Education and that Master Maps had been shared with new teachers. However, each of the participants indicated that the Master Maps had not been used within their departments. HS 5 related

that the maps “are basically there. They are there because the administration has said to do them.”

**Theme 4: Organizational change barriers.** Additional change barriers conveyed by participants related to (a) career stage, (b) prior initiative history within the district, (c) lack of mapping relevance, and (d) non-cooperative colleagues. For example, HS 6 indicated that an initial barrier to change within his department related to career stage and previous negative experiences with what was perceived as a similar initiative. HS 6 stated that “we had two [teachers] on the verge of retirement, teachers who were not going to do anything.” HS 6 related how his former chair had compared mapping to prior work that had been done to align curriculum and how it had sat unused in his filing cabinet. According to HS6, the teachers close to retirement “referred to mapping as secretarial work” and refused to participate. HS 6 also indicated that some teachers perceived mapping as “a glorified lesson plan book” and since “we already do those”, they could not see the relevance of expending time to write a map.

HS 5 related how discovering that maps needed to be modified is “where the majority of the math department said, forget it, we are done.” Since HS 5 was a non-tenured teacher at the time, she felt obligated to comply; therefore, she took it upon herself to seek additional training in order to develop the department’s Master Maps. HS 5 explained that some of her colleagues had been her former teachers or coaches and that she was “not going to go and cause them any problems.” HS 5 stated,

It doesn't really matter if I'm going to show them how to do it [develop a map] because they are all grown people...and if they've got their mind made up that they are not going to do it, they are not going to do it.

HS 5 suggested that "the stubbornness" of her colleagues was the result of viewing mapping as "just more busy work because we haven't been shown what can be done with them ... once they've been written." According to HS 5, some of the teachers concluded from implementation trends that mapping had "been around for four years; it's kind of dying off; they [administrators] aren't pushing it as hard; in a couple more years, they won't even ask us to do it...Why should we learn how to do something that is going to be gone in a couple of years?"

HS 5 described how initially she had been offered a stipend for working on Master Maps during the 2007 summer workshop "but after that first couple of years it wasn't really truly offered." More recently, Adm 4 requested that HS 5 develop some departmental maps which were to be given to representatives from the State Department of Education. HS 5 explained that she had to work long hours over the weekend to complete the task; she had not been offered a stipend for her efforts, and she commented, "I felt like I was doing it for him [Adm 4] because I like and respect him, not because I felt like I had to."

HS 7 also indicated that lack of relevance was also a change barrier. According to HS 7, "some teachers don't see the effectiveness of curriculum maps." Some teachers view mapping as "something that is not important to them .... [so they] are not going to spend ... time doing it."

**Theme 5: Leadership recommendations for promoting buy-in.** Participants suggested a cause and effect relationship between challenges that were faced and inadequate administrative knowledge of mapping which resulted in inconsistencies during implementation. Therefore, HS 7 stressed the importance of administrators “know[ing] what the initiative is all about and really where it is taking you before you start.... [And] they need to be well trained on it themselves before they start having teacher training.” Participants stressed the idea that it is imperative for administrators to be very knowledgeable about mapping so they can appropriately support teachers during the implementation process and are able to foster an understanding of the purpose and benefits of mapping. HS 7 emphasized the idea that it is essential for administrators to make “teachers feel it’s a valuable concept and something we really need.”

Participants also expressed concerns that inadequate provision of resources such as professional development, time, and on-site support increased teacher resistance to mapping. HS 6 suggested that as a result of inadequate training, “some people couldn’t do it [develop maps]”, and HS 6 thought that the principal did not understand the challenges presented during map development because “our principal never did it.” Therefore, when the principal would provide “all you have to do” advice, it “sounds great from a podium [but] it just isn’t practical.”

Participants’ professional development recommendations varied from a full day training to a week long summer session. HS 7 thought it was important for trainees to work “at their own [computer] station” and to have multiple facilitators available “to go around and help individuals.” HS 4 recommended sending department teams “instead of

sending [a] representative,” but HS 2 and HS 5 thought it was better to fully train one teacher to serve as a departmental expert. Participants also voiced concerns about non-explicit plans for providing new teacher training. HS 7 emphasized the point that “younger teachers need to be trained.... [and] I don’t think they are well trained.” Participants agreed that it is important to have on-site teachers whose explicit responsibility is to provide mapping assistance and that administrators should also be able to assist teachers.

Each of the participants indicated that too much time elapsed between map development opportunities which made it difficult to recall how to write a map and the classroom work which had occurred since the last opportunity. Some participants recommended providing weekly opportunities to write or update maps, but others thought monthly opportunities would suffice. HS 6 stressed the idea that it is important to “do more in the first year” in terms of providing mapping resources and support.

HS 7 emphasized the point that administrators need to provide “adequate training for teachers, and then adequate time to do it, and don’t expect teachers to have so many maps finished within a short period of time when that is just not possible.” According to the HS 6, administrators should only expect teachers to map one discipline or course during the first year and suggested that if a teacher is responsible for multiple disciplines, the administrator should allow teachers to map “which ever one you [the teacher] want.”

Participants emphasized that it is important for administrators to set explicit mapping goals, a time frame in which it is to be accomplished, and a method for monitoring implementation progress. HS 6 recommended that administrators should

designate someone, a department chair or assistant principal, to be “in charge of curriculum mapping” and that person should meet “with the departments regularly” and then “report to [the principal and]...send me [the principal] some specimens as we move forward;” then the principal should provide “feedback.” According to HS 6, an administrator should tell teachers:

I will be checking these maps. I’m not going to do it behind you back. I’m going to come to you as departments. We are going to meet regularly, and I’m going to ask you to ... print-off your maps and bring them ... because I want to look at these and see that we are moving forward and not lagging behind. And, if there is a reason we are lagging behind, I want to know why so we can help move the process forward. That to me would show a care and an interest.

Participants also recommended that administrators should determine and provide appropriate incentives to teachers. An anonymous 2007-2008 survey respondent suggested that “a systematic reminder might be helpful to give teachers incentives to keep up with mapping as a habit.” HS 6 recommended providing opportunities to celebrate accomplishments such as “in the end you maybe give them a meal, bring in some food and ... make it a big deal.” Some participants recommended providing release time or stipends as incentives. However, HS 5 indicated that release time from class would not be an incentive because it becomes a “worksheet blow-off day” for students and results in “twice as much work for me because I’m having to get ready for a sub.... and get [students] caught up from the sub.” Participants agreed that an essential incentive for mapping is an understanding of the personal and student benefits derived from

mapping. Participants suggested that developing a shared understanding of potential benefits from mapping is a responsibility of administrators. HS 6 noted that it was essential for administrators to be able to answer these key questions:

How do you give it ownership to the point where the teacher gets it as far as where do I, when do I do this and why am I expected to do this? What is the goal at the end?

Thus, the experiences of participants during the implementation of the Jacobs model of curriculum mapping impacted participants' perceptions as to the roles and responsibilities administrators should expect to assume prior to commencing the initiative and during the implementation process. Participants also suggested that a cause and effect relationship exist between leadership during the implementation process and participants' perceptions of mapping and its sustainability within Wards Mill School District #4.

### **Summary of Findings for High School Teachers Case**

*1. How does the implementation of the Jacobs model of curriculum mapping impact teachers' perceptions of leadership roles and responsibilities?*

The data indicated that mapping was met with mixed levels of support among high school teachers. Although survey results described in Table 7 suggested that the majority of the respondents had positive perceptions in relation to mapping benefits, data in three out of the four categories suggested a diminished perception of the benefits. The participants' reflections of possible cause and effect relationships between the challenges this initiative posed and leadership during implementation resulted in recommendations

for those administrators who contemplate implementing curriculum mapping in the near future.

One finding of this study was that, as a result of implementing the Jacobs model of curriculum mapping, high school teachers believed that administrative roles and responsibilities should encompass both proactive and active leadership. Proactive leadership suggested by participants included roles and responsibilities administrators should assume prior to commencing a curriculum mapping initiative. Active leadership perspectives of participants related to roles and responsibilities that administrators should expect to assume during the implementation process.

High school teachers also suggested that implementation challenges were a result of a lack of administrative knowledge of mapping, confusion about the implementation plan, inadequate provision of resources, inadequate communication concerning the purpose and benefits of mapping, and limited use of maps. As a result of these perceived challenges, high school teachers recommended that administrators who intend to implement mapping should expect to assume proactive responsibilities which included (a) developing administrative knowledge in curriculum mapping and the processes involved therein, (b) formulating consistent and attainable implementation and accountability plans, (c) developing plans for identifying and providing resources and incentives, and (d) building on-site leadership capacity.

High school teachers also recommended that administrators should expect to assume the following active responsibilities and roles: (a) fostering a clear and consistent understanding of the purposes and benefits of mapping, (b) assuming the role of coach

and encourager, (c) communicating explicit goals and monitoring mapping progress, (d) providing adequate and on-going resources and incentives, (e) engaging teachers in leadership roles and providing opportunities for teacher ownership in the mapping process, and (f) educating and explicitly connecting usage of maps and mapping information with School Improvement Plans.

HS 6 emphasized the idea that “if you don’t have the leadership behind this, it’s gone [because] teachers will do nothing with it” unless the maps are monitored and used in some manner that benefits students and teachers. Participants indicated that leadership during the implementation process had definitely impacted their perceptions of mapping and the sustainability of the curriculum mapping initiative.

*2. How does the leadership during implementation of the Jacobs model of curriculum mapping impact teachers’ perceptions as to the sustainability of this initiative?*

Another finding of this study was that, as a result of implementing the Jacobs model of curriculum mapping, high school teachers suggested that teachers’ perceptions of mapping are impacted by leadership during implementation. The data indicated that 57% of the high school teachers perceived that mapping would be sustainable within Wards Mill School District, and 43% of the participants were not sure if it would be sustainable. The perceptions that mapping would be sustainable were based on the administrator’s commitment to the mapping initiative, that mapping was a mandated initiative, and on the perceived benefits of mapping. Anonymous Post It Note responses from focus group participants suggested that “our principal is all about this” and that the “building administrator is committed to the program.” However, HS 6 indicated that it

was unclear as to whether Adm 4's commitment to mapping was because "he's been told to do [it]; so, he has to sell it." HS 6 explained "we didn't ask him because he has a right to ask us to do this. We don't have to question that; so, it was here and here to stay." However, HS 6 stressed that "they'd better come up with what the end game is though."

In addition to administrative support, participants stressed that sustainability necessitates perceived benefits of mapping for teachers and students. Participants suggested that perceived teacher benefits included using mapping as a curricular organization and alignment tool as well as a curricular communication tool. HS 7 planned to retire at the end of the 2009-2010 school year, and therefore, she viewed mapping as a valuable communication and pacing tool for the new teacher that might assume her position.

Perceived student benefits included using mapping as a tool for ensuring that assessment standards had been adequately addressed. HS 1 perceived mapping "as a way to improve and make sure students are taught what they need." HS 7 thought that the 7% increase in students test scores for courses she taught "could be related to curriculum mapping because we really have a plan." An anonymous focus group participant also viewed mapping as a "tool to make teachers teaching the same [courses] accountable to covering the same information according to state goals." A final rationale offered by participants for sustaining mapping within the Wards Mill School District was a perception that mapping was an on-going process. HS 7 noted that mapping "progress has been made [but] there are still areas that need improvement."

High school teachers who were unsure if mapping would be sustainable based their perceptions on the lack of clarity of goals, implementation trends which indicated a reduction in mapping resources and which suggested that the administrative priority for mapping had diminished, and uncertainty of what to do with maps once they were constructed. An anonymous 2007-2008 *Curriculum Mapping Needs and Goals* high school survey respondent's perceived barrier to sustainability was the result of

unclear goal[s] from the beginning [that] has created uneven levels of completion.

In theory it all sounds good but the reality is everyone is on different levels. To some extent I feel like we are 're-inventing the wheel' in terms of other previous 'big picture' SIP [School Improvement Plan] endeavors that haven't worked so it's kind of hard to buy-in to this one. Maybe I'm just skeptical, but certainly willing to keep trying!

High school participants perceived that the lack of clarity in the implementation plans had resulted in confusion and false starts that burdened teachers with extra reformatting work. Participants suggested that the initial confusions might be the result of the lack of administrative knowledge in mapping but that formatting frustrations were the result of conflicting map development messages from different consultants. The challenges presented during the implementation process resulted in mixed perceptions of mapping and its sustainability. An anonymous focus group Post - It Note response suggested that although mapping "has the backing of administration ... teacher support appears to be low."

Participants indicated that during the initial implementation process, Adm 4 had been very supportive of mapping, provided explicit time for mapping efforts and explicit mapping goals for the allotted time, and professional development opportunities had been provided. However, participants noted a diminished emphasis on mapping in terms of resource provisions and non-explicit plans and use of the maps housed in the Internet-based system. The perceived diminished emphasis and non-usage of the maps coupled with the district's historic short-term commitment to initiatives left participants with mixed perceptions as to the sustainability of curriculum mapping within Wards Mill School District #4.

#### **Junior High School Teachers Case**

Four hundred and sixty-three pieces of coded data from nine junior high school case participants were inductively analyzed and resulted in the identification of domains relating to comparisons between mapping and other district initiatives, factors contributing to resistance or buy-in of curriculum mapping, and perceptions of leadership factors impacting sustainability of curriculum mapping. Table 9 describes comparative factors contributing to initiative buy-in. Table 10 identifies attributes of leadership that might inhibit buy-in and sustainability of mapping, and Table 11 reflects participants' perceptions as to leadership attributes for promoting buy-in and sustainability of mapping. A discussion of the patterns, relationships, and themes emerging from the data is presented following the tables. The findings are used to address the research question relating to teachers' perceptions of leadership roles and responsibilities and the impact of

leadership on perceptions of sustainability of curriculum mapping within Wards Mill School District #4.

Table 9

*Junior High Perspectives of Factors Leading to Initiative Buy-in*

Cover and included terms	Percentage of Comments
Engaged Communication	85%
Shared Vision	41%
Moral Purpose	14%
Two-way Communication	30%
Resources	7%
Implementation Plans	7%
Accountability and Monitoring	1%

Table 9 was based on 90 pieces of coded comparative initiative data derived from eight of the nine participants. The data described comparative factors that contributed to initiative buy-in. Two of the eight participants discussed teacher driven initiatives that were a result of their participation in graduate courses, and six of the participants discussed district mandated initiatives. Eighty-five percent of the buy-in factors related to communication that resulted in a shared vision of initiative benefits (41%), an understanding of the implementation rationale or moral purpose (14%), and teacher engagement in the planning and implementation process (30%).

Five of the participants discussed factors that resulted in buy-in to the mandated restructuring plan for the junior high school. JH6 indicated that the restructuring plan was a “result of not meeting AYP [Adequate Yearly Progress] and being forced by the

state to make changes.” Unlike previous restructuring attempts, JH 1 indicated that “there was input between teachers and administration.” JH 1 described how a committee of teachers had been “asked to find out from all teachers what changes we thought needed to be done at the junior high.” JH 2 stated that “being part of that committee really helped us think how we restructure the junior high and what changes need to be made...and all the other teachers got to have input.” JH 3 emphasized that collaborative engagement between teachers and the administration “kind of brought us together as a school issue not just certain department issues.” Common buy-in factors among each of the initiatives described by the participants included visible benefits for students and teachers and teacher ownership in the planning and implementation process.

Table 10 was based on 259 pieces of coded data and describes attributes of leadership that inhibited buy-in and sustainability of mapping. Three key categories of challenge were the result of inadequate communication, resources, and implementation plans which lacked clarity of goals and expectations.

Table 10

*Junior High Perspectives of Leadership Attributes Inhibiting Buy-in*

Cover and included terms	Percentage of Comments
Inadequate Communication	13%
Limited Shared Vision	5%
Limited Moral Purpose	4%
One-way Communication	4%
Limited Resources	33%
Time	14%
Professional Development	17%
On-site Support Team	2%
Avoidance of Organizational Barriers	6%
Traditional Mental Models	3%
Negative Culture	3%
Inadequate Implementation Plans	38%
Limited Accountability and Monitoring	10%

Table 10 indicates that organizational barriers represent a small percentage of the data collected. However, participants suggested that perceived implementation trends within Wards Mill School District #4 were contributing factors that impacted perceptions of the sustainability of mapping. Perceptions of implementation trends were a component of organizational barriers.

Table 11 was based on 114 coded pieces of data which described attributes of leadership factors that promoted buy-in and sustainability of a curriculum mapping initiative. Although each of the participants contributed data used to develop Table 11, the majority of data was based on perceptions from four of the nine participants.

Table 11

*Junior High Perspectives of Leadership Attributes to Promote Buy-in*

Cover and included terms	Percentage of Comments
Continual Communication	43%
Shared Vision	35%
Moral Purpose	7%
Two-way Communication	1%
Sufficient Resources	31%
Time	13%
Professional Development	12%
On-site Support Team	5%
Build Organizational Bridges	5%
Positive Culture	5%
Articulated Implementation Plans	19%
Measurable Accountability and Monitoring	2%

Key domains associated with buy-in included communication (43%) that promotes a vision (35%) concerning the benefits and relevance of mapping, sufficient provisions of resources (31%), and articulated implementation plans (19%).

Patterns that emerged from the data provided insights into the cause-effect semantic relationship of factors perceived as leading to initiative buy-in. A common factor for buy-in suggested by Table 9 and Table 11 emphasized the importance of communication that promoted a vision concerning the benefits and relevance of the initiative. Table 10 was based on perceptions promoting initiative buy-in, and Table 11 reflected factors inhibiting buy-in; however, three key domains impacting perceptions that were emphasized in both tables included (a) communication, (b) resources, and (c)

implementation plans. Patterns in the data suggest a relationship between administrative actions and these three key factors that impacted participants' perceptions of mapping and its sustainability.

**Theme 1: Organizational change barriers.** Data suggest that organizational barriers represented a small percentage (6%) of the factors inhibiting initiative buy-in; however, eight of the nine participants discussed pervasive perceptions among teachers as to implementation patterns within the district which negatively impact initiative buy-in. According to JH 2, "All the other teachers were saying...oh, just hang in there, it will go away." JH 1 explained, "I think it's [an implementation] pattern. It's happened in the past ....You just jump from whatever someone has come up with at the time and it lasts for a few years and then you go to something new." JH 8 suggested that "part of it could be that they [administration] wanted to jump on the band wagon 'cause it was the up and coming thing."

JH 6 suggested that skepticism towards mapping might be derived "from years and years of having things thrown at you that weren't valuable." JH 6 indicated that "from talking to other people in the building, I might have been one of the few that really bought into the value of it [curriculum mapping]." However, perceived historic implementation patterns within the district was a factor negatively impacting JH 6's perception of curriculum mapping. JH 6 explained, "When you do get something that is of use, you know, it's kind of like you are just worn out and you think, well, it's just one more thing that will go by the wayside." The participants suggested that other factors negatively impacting perceptions of mapping were the result of a lack of clarity as to the

rational for implementing curriculum mapping and a limited understanding of the usage and benefits of mapping.

**Theme 2: Limited vision and purpose result in resistance.** Patterns in the data presented in Table 9 and Table 11 suggest communication that develops a shared vision, moral purpose, and provides opportunities for two-way communication are the most essential components for promoting initiative buy-in. Table 11 indicates inadequate communication (13%) was perceived by junior high teachers as a component resulting in initiative resistance; however, data suggested that inadequate implementation plans (38%) and limited resources (33%) had a greater impact on perceptions. Additionally, the findings suggested a relationship between inadequate communication and the challenges presented as a result of inadequate implementation plans and limited resource provisions.

Participants indicated that they were mapping because it was a mandated initiative, and the findings suggested that participants had a limited understanding of the implementation rational and vision for mapping. JH 6 suggested that the lack of clarity might be the result of mapping considered as “a top down thing” from the unit office. JH 6 stated, “I think she, Adm 1, was supposed to teach us but she didn’t know how.”

A relationship suggested by inadequate communication was that participants did not have a shared vision and purpose for mapping. JH 1 stated, “I don’t know if I’ve ever really been told why we’re really doing this. What is the purpose [of developing curriculum maps because] I’ve got a plan book and my plan book is done from year to year .... Why do I need it on some computer map some place?” JH 5 suggested, “I think

we are mapping in the first place because the state requires it.” During the time that this study was conducted, mapping was not a state mandate. However, JH 6 thought mapping had been initiated because the junior high had not met Adequate Yearly Progress (AYP) on state tests.

JH 8 suggested that maps were required so administrators could use them to show State of Education representatives. JH 8 described an imagined conversation between administrators and state representatives to illustrate perceptions:

It looks good if the district has everything mapped out and [when] somebody comes in and says, ‘What are you teaching?’

And it’s like, ‘Here’s what we are doing and we are meeting the standards.’ I think it benefits them [administrators] because we haven’t met AYP.

And they [state representatives] say, ‘You know you are not teaching the curriculum you are supposed to be teaching.’

So, [administrators can say,] ‘We are because here’s our map and it shows that we are.’ So, I think that was the impetus behind it.

JH 2 indicated mapping had been initiated “to just make sure that we are teaching what we need to teach.” Other participants suggested mapping had been initiated to identify “holes” in the curriculum. JH 7’s perception was that administrators wanted “to align the curriculum from kindergarten to twelfth grade ... [and] make sure that there wasn’t redundancy from year after year.”

JH 6 and JH 7 suggested that part of the teachers’ confusion and frustration

related to the perception that identifying gaps and redundancies was the job of the curriculum director, not the teachers. JH 7 pondered, “Why do we have a curriculum director in our district, because isn’t that the job of the curriculum director to align text or align learning standards ... and then go and present it to us?” JH 6 concurred that aligning the curriculum was “something that really should come down from the top instead of working its way up from the bottom.” According to JH 6, the “curriculum coordinator [should] say this will be covered here [and] this will be covered there.” JH 7 and JH 6 also emphasized the idea that the district had spent thousands of dollars to purchase textbooks which were aligned to the standards; therefore, it was difficult to understand why teachers were required to develop maps.

JH 7 stated, “Some people think teachers don’t really do that much. It’s not any big deal to ask them to do one more thing, [but] I think teachers are feeling overwhelmed.” However, JH 7 could understand that administrators might be frustrated because teachers appeared to be “balking.” JH 7 commented that “I don’t want it to look like teachers are not wanting to do what they are asked to do. I’ll do what I’m asked to do, but I would like a little help along the way.” Participants related how overwhelmed and confused they felt as a result of the mapping process. The frustration that many of the participants experienced was explained by JH 4, “All my energy is going into trying to meet a requirement without really knowing how it is going to be used exactly. Just kind of ... marching to the order that I’m being given.”

JH 9 also described maps as a “vague, ambiguous, nebulous entity that exist somewhere out in cyberspace ... that never affects what I do on a day-to-day basis.” JH 9

suggested that when teachers do not understand the relevance and purpose of mapping, “people don’t buy-into it. They don’t invest themselves into it ... [and if administrators] don’t give them a reason to invest [then] they don’t do it.” JH 9 did not view the implementation process of mapping “as being very effective” and indicated that mapping “hasn’t been able [to be used] to meet” the intended goal of identifying holes in the curriculum. Due to JH 9’s prior efforts to align the curriculum with the standards, JH 9 did not perceived any benefits from mapping. However, each of the remaining participants did discuss personal benefits they had derived as a result of developing maps.

**Theme 3: Perceived benefits from mapping.** JH 4 related how mapping had raised his awareness of “how much time I staying in a certain curriculum area, how much time I’m doing the standards ... [and] working with certain skills.” In addition to a raised awareness of curriculum alignment, JH 5 thought a map was a good communication and planning tool “for somebody new that walks into the building ... [because] they could look at the map” and know the content and skill expectation of students which “makes their life a whole lot easier.”

JH 2 suggested that mapping could provide “long term benefits for everyone involved if we can master it [map development] and then collaborate ... across grade levels.” JH 8 describe personal and student benefits from using the Internet-based system “at the beginning of every year” to examining high school master maps to “see what they teach the freshman because I know they are always tweaking their freshman ... course.” Based on information presented in the high school Master Map, JH 8 related how he made course modifications to improve vertical alignment and to ensure that students had

the prerequisite knowledge and skills for the freshman course. JH 2 stated, “I don’t really see that we can not do this. I think that we have to do this if we are going to try to meet standards and do it effectively.”

I used findings from the *2006-2007* and *2007-2008 Curriculum Mapping Needs and Goals surveys* to triangulate perceived benefits from the mapping process. The junior high teachers’ survey response rate for the 2006-2007 school year was 45%, and the response rate for the 2007-2008 school year was 41%. Table 12 describes trends in perceived benefits from mapping.

Table 12

*Junior High Trends in Mapping Perceptions*

Raised Awareness	Likert Response Percentages	
	Agree	Strongly Agree
State Standards		
2006 – 2007	58%	5%
2007 – 2008	47.1%	11.8%
Curricular Alignment		
2006 – 2007	74%	16%
2007 – 2008	64.7%	11.8%
Gaps & Redundancies		
2006 – 2007	67%	11%
2007 – 2008	64.7%	11.8%
Promotion of Curricular Dialogue		
2006 – 2007	79%	5%
2007 – 2008	47.1%	5.9%

Although data in Table 12 corroborates participants’ perceptions of mapping benefits, trends indicate diminished perceptions of these benefits. During the 2006-2007

school year, each teacher was provided with professional development training, but only new teachers were provided with training during the 2007-2008 school year.

Additionally, participants indicated that they had limited on-site mapping opportunities during these 2 school years because the extra school improvement time had been focused on other issues rather than adequate provisions for mapping. The diminished resource provisions might be a factor that impacted perceptions of mapping benefits and resulted in the trends described in Table 12.

The participants suggested that other factors impacting perceptions of mapping were the result of inconsistencies during the implementation process and unclear implementation goals and expectations. JH 5 and JH 7 suggested that implementation challenges, inconsistencies, and confusions might be the result of limited administrative knowledge. JH 7 provided an analogy to explain the resulting confusion, “It’s almost like if the traffic lights were, had a short in them and they are all blinking at different times and we are all trying to drive without any direction.”

**Theme 4: Implementation inconsistencies result in resistance.** Data suggested that the two key factors contributing to resistance of curriculum mapping related to resource provisions (33%) and implementation plans (38%). Resource challenges identified by participants were categorized into time (14%), professional development (17%), and lack of on-site support teams (2%). Although JH 9 perceived Adm 1 as “very knowledgeable about this [curriculum mapping],” the remaining participants suggested Adm 1’s lack of mapping knowledge resulted in inconsistencies in implementation plans and resource related challenges.

JH 6 had been a member of the 2005-2006 school year's "core committee" selected by Adm 1 and had received initial mapping training from Adm 1. JH 6 related that Adm 1 presented the 11 core committee members with an overview of mapping and provided them with basic guidelines for developing a map. According to JH 6, "We were told noun – verb – noun and now just go back to your room and do it. There was total confusion." JH 6 suggested that Adm 1, an assistant principal at that time, might have been given the assignment "to teach us, but she didn't know how." JH 6 described how core committee member had been given training "in the spring and we had all summer to forget whatever we had been taught."

Professional development records for 2005-2006 were unavailable. However, a January 23, 2006 email correspondence between the prospective national consultant and myself indicated that junior high school core committee and I attended a workshop presented by a software company consultant. According to participants, the software consultant suggested that maps written following the principal's recommended template were not properly developed. A national consultant provided training to junior high school teachers during the 2006-2007 school year and suggested that additional revisions were required. According to the national consultant, maps that had been developed did not adequately reflect the alignment of the content, skills, and assessments. Furthermore, the consultant suggested modifications, including the location for the standards boxes that had been inserted into the maps and the need for certain items to be in bold print.

JH 8 thought "the mapping process itself is easy" because "it's pretty straight forward once you understand" the format. However, JH 2 and JH 4 referred to

formatting as “a complicated thing.” JH 3 suggested that the formatting challenges were where “people kind of put down their feet and went whoa, this is too hard, this is too much, if we could just say what our thoughts are and relate to standards and move on ... [but] it’s just too technical.” JH 6 stated, “I didn’t even feel completely trained on how to do it and I was on the core committee. So, I knew my peers didn’t.” Participants related how formatting confusions resulted in additional work and frustration among teachers. A few of the formatting frustrations discussed by participants included strategies recommended by the consultant for alignment of the content, skills, and assessments; rules presented by the consultant for bolding and capitalizing certain elements of the text; and initiating a skill statement with a measurable verb.

Most of the frustration resulted from having to use a combination of letters and numbers to describe the alignment of the content, skills, and assessments rather than merely listing items on the map. I also observed that it was challenging for some of the teachers to differentiate between instructional activities and the skills students were expected to master. A map is not intended to be written as a lesson plan. It should not be written from the perspective of the teacher to reflect what was done with students; instead, a map is supposed to be written to represent what the students were expected to learn, the skills they utilized during the learning process, and how the students were to demonstrate their knowledge and skills.

JH 5 stated that “formatting is a big challenge and the time because you get the training one day and then you do not see it again until months later and then you have to figure it out all over again.” During the 2006-2007 school year, extra School

Improvement Plan (SIP) time was built into the school calendar to provide teachers with time for personal mapping. JH 6 suggested that teachers “in other buildings ... were getting that time,” but “we were being put in a meeting for most of the afternoon” before being given personal mapping time. Participants indicated that the amount of time elapsed between training opportunities and personal mapping time posed additional challenges. JH 5 explained:

[If] you don't have another available time to work on it [mapping] until two month later, a month later ... you have to go straight back through that training on your own. So, it takes a good hour-and-a-half to figure out what you are doing before you even start.

JH 7 suggested that the effect of the formatting inconsistencies, discrepancies in professional development opportunities and inadequate time provision was that mapping “become[s] very overwhelming and discouraging and very frustrating to the point that you don't want to participate.”

Professional development records for the 2006-2007 school year indicated that a total of 10 days were designated for training the 53 junior high school teachers, including eight days with the national consultant, one day with the software consultant, and one day working alone. I coordinated the professional development dates; however, Adm 1 determined which teachers would attend which sessions on specific dates and the number of training opportunities per teacher. I examined information in the *2006-2007 K-12 Curriculum Mapping Professional Development Records* that indicates training dates and session times per teacher at the junior high. Table 13 was generated to describe the

number of teachers that were provided with specific amounts of professional development opportunities. The data in Table 13 supports participants' perceptions that an unequal amount of training was provided to teachers.

Table 13

*2006-2007 Professional Development Training for Junior High Teachers*

Number of Teachers	Amount of Time	
	Half-Day	Full Day
Two	0	1
Four	0	2
Six	0	3
Seven	1	0
Ten	1	1
Thirteen	1	2
Five	2	0
Six	2	1

Out-of-district consultants were not hired to provide professional development training for teachers during the 2007-2008 and 2008-2009 school years, and I only provided one half-day training session for new teachers during each year. The *2007-2008 Curriculum Mapping Needs and Goals Survey Report* provided respondents with an open-ended opportunity to identify potential barriers to sustainability. An anonymous junior high school respondent suggested that “this currently is a hit and miss project.

Two years ago, it was a great idea. Last year [2006-2007], people became frustrated that some got time to do it, while others hadn't even started."

Participants viewed the inadequate resource provisions as an indicator of limited administrative commitment and that mapping was a low priority item. JH 1 explained, "If they [administrators] are not giving us release time to do it [mapping], maybe they don't feel like it's so important." According to JH 8, "The amount of time that we have been given has waned over the last, well, since it first came down." Participants suggested that the lessening of resource provisions was an implementation trend that seemed to de-emphasize mapping and implied that it was another educational fad for the district.

Each of the participants indicated that they were not aware of how the maps were to be used. JH 8 stated, "I assume the administration looks at it, but I don't know what they use it for." JH 6 suggested that an insufficient number of maps had been generated so "we aren't to the point" at which maps can be used. JH 7 suggested that:

there's a lot of maps out there that are incomplete and until somebody says you have to do this or it's going to be checked on, or provides extra training time or something to reignite this system, it's my belief that it's [mapping] faltering at this time.

To triangulate participants' implementation perceptions, I examined archival documents from the 2005-2006 through December, 2009 in the 2009-2010 school years. Administrative report options within the Internet-based mapping software system were utilized to analyze implementation trends. I counted the number of junior

high school teachers with maps housed in the system during each of the school years. Additionally, I compared the last revised date specified for each participant with professional development records to determine if there was a relationship between the dates. Table 14 describes the number of maps housed in the internet-based system from 2005-2010. Data for the 2009-2010 school year represents data collected until the end of December, 2009.

Table 14

*Junior High Maps Housed in Internet-based System*

School Year	Teachers with Maps
2005 – 2006	11
2006 – 2007	53
2007 – 2008	27
2008 – 2009	22
2009 - 2010	18

No professional development records were available for the 2005-2006 school year. Therefore, I was unable to verify a relationship between professional development opportunities and the last revised date for the core committee members. However, patterns in the data indicated a relationship between time provisions and the map's last revised date. Fifty-three teachers were provided with training opportunities during the 2006-2007 school year. The last revised date for 52 of the teachers' maps corresponded with professional development dates. SIP dates for the 2007-2008 school year were unavailable; therefore, a relationship between the last revised date and SIP dates could

not be established. However, patterns in the data suggested teachers were provided with mapping time on October 23, 2007, November 29, 2007 and March 3, 2008. During the 2008-2009 school year, 15 of the 22 last revised dates corresponded with a SIP date. Sixteen of the 18 last revised dates for the 2009-2010 school year corresponded with time provisions for departmental meetings. Implementation trends in the data supported teacher perceptions concerning a de-emphasis of curriculum mapping.

**Theme 5: Impact of Leadership on Mapping Perceptions.** Participants suggested a cause and effect relationship between Adm 1's lack of mapping knowledge and the challenges and confusion participants experienced during the implementation process. Participants noted that leadership responsibilities included developing administrative knowledge in mapping and promoting an understanding of the purpose and benefits of mapping. JH 6 noted that if mapping is mandated, "make sure that you [administrators] completely believe it ... and understand it before you try to sell somebody on it." According to JH 6, "You can't sell somebody on a product you know nothing about ... [and] that means you send your frontline supervisors for more training."

Participants also stressed the importance of administrative knowledge in the challenges associated with map development and suggested that a lack of knowledge had a detrimental impact on perceptions of mapping. JH 7 explained, "I don't think that there is one administrator that has their own curriculum map and knows how to work it and has gone through the trials and tribulations so that they could in turn become a good facilitator." JH 2 stressed that administrators "need to know how to do this too, if they are asking us to do it." JH 5 suggested that the ability to develop a map was a

prerequisite for assuming the role of a mapping coach. According to JH 5, “they [administrators] need to do one and see how difficult it is and then they’d understand the restraints .... And then they would be a little more compassionate with the rest of us.” Participants suggested that administrators needed to have the mapping knowledge to assume the role of a facilitator and an encourager. JH 5 explained, “they [administrators] need to be more supportive ... [by giving teachers] a pat on the back ... [or] verbal expressions” of support and offer assistance if a teacher is “having trouble.”

In addition to administrative assistance, the data analysis suggested participants perceived that it was the responsibility of the administrator to build teacher leadership capacity and knowledge in mapping as a component of a prologue. JH 7 suggested that the prologue should include an opportunity for collaboration between administrators and the teacher leadership team so that they “would be talking the same language and showing the same by-product . . . [and they could explain] the things that . . . [they] are gaining from this or this is what the district is gaining.”

Although JH 8 stressed that administrators should “make sure you tell the teachers what it [mapping] is,” JH 6 thought it was more important to give the leadership team “time to discover what is good about it [instead of] just tell[ing] them this is what’s good.” JH 6 suggested that administrators should “pick the few people who maybe are interested in it [and] think it’s going to work in different departments . . . [then] give them time so that they can really learn it.” Participants indicated that it would have been beneficial to work with colleagues and administrators who were capable of offering assistance. JH 6 suggested giving leadership team members some incentives for their

willingness to assume extra responsibilities such as extra pay or finding “a way to take some of their other work load off.”

JH 6 suggested that the prologue for the administrative and teacher leadership team should be a process of professional development and an opportunity to apply knowledge “gradually as the year goes on . . . [and] you do it for nine months.”

Participants suggested that a knowledgeable and experienced leadership team would help foster a shared vision and purpose for mapping and provide an on-site support team to work with colleagues. Additionally, participants suggested that prologue training and collaboration might have eliminated the formatting confusion and frustration. JH 7 noted that it was important to have “something that was cohesive” so that “everyone gets the same training” because the lack of continuity results in “chaos.”

Participants also expressed confusion as to why the junior high school teachers were developing individual Diary Maps instead of the Master Map developed by the high school teachers. Participants suggested that it would have been better to provide teachers with an opportunity to collaborate on the development of Master Maps. JH 9 commented that it was difficult to understand the purpose of writing a Diary Map because “there’s no interconnectivity between me and the other teachers at my grade level.” Instead, JH 9 stressed the importance of making mapping “corporate and make it personal [because] making individual [Diary Maps] was cold and sterile . . . . It wasn’t a cohesive math department looking at their math curriculum.” A Diary Map, suggested JH 8, might be developed as a method of conveying what “an individual [is] doing to meet the Master Map.”

Participants raised doubts as to whether the maps accurately conveyed the learning activities that occurred in the classroom. Participants commented that teachers copied and pasted elements within their maps that were not an accurate representation of their curriculum. Participants suggested that inadequate provisions of time and training, no accountability for use of the maps, and a perception that mapping was a low priority were contributing factors for mapping inaccuracies.

Another contributing factor for mapping misrepresentations suggested by participants related to steep learning curve expectations. Participants expressed a sense of feeling overwhelmed because they were expected to learn how to map which was compounded by the different formatting versions, how to use the computer system, and how to apply state learning and assessment standards, in addition to pressures related to other mandated initiatives. JH 7 provided an analogy to describe the frustrations resulting “when you are thrown all kinds of new things.” JH 7 explained, “It’s kind of like you are in a boat without an oar. It’s very hard to paddle and on top of that, you are going upstream.” The participants’ experiences during the implementation process resulted in perceptions of leadership roles and responsibilities that should have been assumed by the principal.

### **Summary of Findings for Junior High School Teachers Case**

*1. How does the implementation of the Jacobs model of curriculum mapping impact teachers’ perceptions of leadership roles and responsibilities?*

The data presented by the participants suggested a cause and effect relationship between administrative actions and challenges presented to participants during the

implementation process. Experiences during the implementation of curriculum mapping impacted participants' perceptions of leadership roles and responsibilities.

One of the findings of this study was that, as a result of implementing the Jacobs model of curriculum mapping, junior high school teachers perceived that the roles and responsibilities of leaders encompassed both proactive and active leadership. Participants suggested that challenges experienced during the implementation process resulted from insufficient administrative knowledge and preparations for implementing mapping, inadequate communication which resulted in limited understandings of the purpose and vision for mapping, implementation inconsistencies, and inadequate resource provisions. As a result of the challenges presented during the implementation process, participants perceived that proactive leadership roles and responsibilities for administrators who intended to implement mapping included the following: (a) developing administrative knowledge in curriculum mapping and the processes involved therein, (b) forming a leadership team that included both teachers and administrators, (c) engaging in an implementation prologue phase for the leadership team, (d) developing plans for identifying and providing resources and incentives, and (e) formulating cohesive site-based and district-wide attainable and long-term implementation plans. Participants also perceived that the active responsibilities and roles of school leaders included the following: (a) promoting a clear understanding of the purpose and benefits of mapping, (b) building teacher leadership capacity, (c) assuming the role of coach and encourager, (d) providing adequate and on-going resources and incentives, (e) implementing plans

with specific and attainable goals, (f) educating and explicitly connecting usage of maps and mapping information with School Improvement Plans.

JH 4 reminded administrators that “whenever there is something that comes up, you have the early adapters ... you have the old dinosaurs and we have our personalities that fit into that change management scheme.” Participants suggested that a key component of leadership roles and responsibilities included an understanding and provisions for the differing needs of teachers during the implementation process.

*2. How does the leadership during implementation of the Jacobs model of curriculum mapping impact teachers’ perceptions as to the sustainability of this initiative?*

Another finding of this study was that, as a result of implementing the Jacobs model of curriculum mapping, participants suggested that there was a cause and effect relationship between teachers’ perceptions of mapping and leadership during implementation. Data indicated that there were mixed perceptions concerning the sustainability of curriculum mapping. Two of the nine participants indicated that mapping would be sustainable; two of the nine participants thought mapping would not be sustainable; and five of the nine participants were unsure of its sustainability.

The rationale provided by participants perceiving that mapping would be sustainable (22%) related to viewing mapping as a mandated initiative. JH 5 was under the misconception that “it’s a state requirement”, and JH 4 thought mapping would be sustainable because “superiors have told me mapping is here to stay.” Limited support of mapping was provided as a rationale for the perception that mapping would not be sustainable (22%). JH 7 suggested that “according to what I hear from teachers from

building to building, it will no longer be in existence. However, I have no idea where the administration stands.” JH 6 suggested that the inconsistency between Adm 1’s message about mapping and actions was an indicator of low administrative support for mapping. JH 6 related that mapping “hasn’t been mentioned at all this year. We haven’t been given time this year. Nobody is talking about it, except to say, it isn’t going away.”

The majority of the participants (56%) were unsure if mapping would be sustainable. Participants commented that mixed messages from administrators impacted their perceptions and raised doubts as to the sustainability of mapping. JH 2 stated, “I’m not really sure its going to stay because I think that they [administrators] would have given us more time and that would have shown us that they were buying into it.” However, JH 9 suggested that sustainability of mapping “depends on funding...[and whether] we can free up the time to get people to do it.” JH 8 indicated that the mapping process is “not done yet. I mean, we have been doing it for several years here and it’s stagnated,” but “I don’t know if it is going to be around. After a while, it might just go by the wayside.”

Junior high school participants suggested that the perceived challenges presented during the implementation process might have been the result of the principal’s lack of mapping knowledge. Participants indicated that the diminished provisions of resources and emphasis on mapping left them with the perception that mapping was a low priority. Although participants acknowledged some benefits derived from the mapping process, they were unaware of how maps might be used to make school improvement connections. Diminished emphasis on mapping coupled with historic implementation trends within the

district resulted in the perceptions that mapping might be another district initiative that would not be sustainable.

### **Elementary School Teachers Case**

Seven hundred and seventy-one pieces of coded data from nine elementary school case participants were inductively analyzed, and this analysis resulted in the identification of domains relating to comparisons between mapping and other district initiatives, factors contributing to resistance or buy-in of curriculum mapping, and perceptions of leadership factors impacting sustainability of curriculum mapping. Wards Mill School District #4 has five elementary schools. Representatives from each school were participants in the interviews. One of the participants, JELED 9, was transferred to the elementary level from the junior high school at the end of the 2007-2008 school year and did not participate in the elementary professional development. At the end of the 2008-2009 school year, the principal at the elementary school where JELED 9 teaches was transferred to a junior high school to assume the position of principal. The junior high school principal, Adm 1, was transferred to an assistant principal's position at one of the elementary schools. JELED 9 was interviewed to explore her perceptions of leadership and the implementation process at the junior high school level compared to the elementary school level.

JELED 9 had been a member of the Core Team at the junior high school level and received three full days of training during the 2006-2007 school year in addition to training provided during the 2005-2006 school year. Information in the *2006-2007 K-12 Curriculum Mapping Professional Development Records* indicated that during one of the

sessions facilitated by me, JELED 9 participated in a half-day mapping review and teacher leadership training and then was given a half-day to apply her knowledge. The half-day application of knowledge session gave JELED 9 an opportunity to collaborate and provide instruction to a colleague at the same grade level and in the same content area.

Table 15 was based on 97 pieces of coded data and describes comparative the comparative factors leading to buy-in of the seven different initiatives discussed by eight of the nine participants. Data presented in Table 15 represents 13% of the 771 pieces of coded data.

Table 15

*Elementary Perspectives of Factors Leading to Initiative Buy-in*

Cover and included terms	Percentage of Comments
Engaged Communication	80%
Shared Vision	33%
Moral Purpose	22%
Two-way Communication	25%
Resources	7%
Implementation Plans	13%

Table 15 indicated that engaged communication was the key causal factor that resulted in initiative buy-in. Participants described the importance of understanding the implementation rationale and benefits of the initiative. Six of the seven initiatives described by participants were implemented as a means of addressing site-based student needs, and three of the seven were teacher initiated. The three teacher initiatives included Positive Behavioral Interventions and Supports (PBIS), novel-based reading, and the

Four Blocks Literacy Model. PBIS eventually became a district mandated program and Four Blocks was mandated at the elementary school level; however, the district no longer mandates or provides financial support for either of these initiatives.

ELED 2 explained that her buy-in to the Positive Behavioral Interventions and Supports (PBIS) initiative was because it “came from our unique situation at our school. The teachers themselves realized there was a problem [and] came together” to problem solve possible solutions. ELED 2 described how grant monies had been available and that initially there was administrator support; however, “when there wasn’t support from the administration, the teachers bought into it and kind of carried it through for a couple of years.” According to ELED 2, two key buy-in factors were that teachers had a sense of “ownership of the initiative” and “a lot of [the] positive discipline” strategies that resulted from “teachers working together” were beneficial to students and teachers.

ELED 5 also indicated that the novel-based approach to reading had been initiated by teachers because “we realized that the textbook, reading textbook, was not meeting the needs of the students.” ELED 5 described how the teachers collaborated to obtain funding and set up their reading program. According to ELED 5, “We spearheaded it. We had the support of our [former] principal. Kids enjoyed it and it worked out very well.” Currently, K-6 teachers are mandated to cover one story per week in the reading series adopted by the district.

ELED 1 and ELED 3 explained that Four Blocks was first introduced to them by a former colleague. ELED 1 related how “they had heard stories from other teachers about the success they were having in their classrooms. . . . so, they [other teachers] were

willing to put time and effort” into incorporating Four Blocks Literacy Model strategies because “they felt like it would enhance their students’ achievement.” The district eventually brought in consultants to provide workshops and summer institutes to train teachers in the Four Blocks model. Consultants also observed teachers during classroom presentations and provided private counseling sessions with teachers in methods for improving Four Blocks Literacy Model presentations. ELED 3 expressed frustration that the district had shifted support from the Four Blocks Literacy Model to two other initiatives so that “you’re kind of confused.” ELED 3 stated, “I just wish the district would pick something or let us just do what we want to and what we feel would be best.”

Testimonials from teachers about the benefits of the initiative, teacher input and collaboration, and observed student and teacher benefits were also buy-in factors mentioned by JELED 9 concerning the restructuring of the junior high school to a middle school concept. However, during 2007-2008 and 2008-2009 district efforts were expended on another restructuring strategy for the junior high school. The current restructuring for 6-8 grades includes a shift away from the middle school concept towards the departmental structure used at the high school. This flux of restructuring efforts appears to mirror the changeable mode of support concerning different reading initiatives at the elementary school level.

Of the seven initiatives, only two are still active within the district. One of the initiatives is a site-based emphasis focused on improving state assessment scores. This initiative is led by the school’s principal. ELED 4 explained, “Everything is centered around [state test prep]. The staff meetings, every school improvement meeting, test

scores, my name is on the overhead.” The internal and external pressures to improve student achievement make state test preparation a high priority for this school. The remaining initiative supported by ELED 7 was the Internet-based grading and reporting system used by the district. According to ELED 7, “I find it useful [and] it helped save time.”

Table 16 was based on 496 pieces of coded data and described attributes of leadership that inhibit buy-in to mapping. Data used to generate Table 16 represents 64% of the 771 pieces of coded data. The data suggested a cause and effect relationship between leadership and the challenges experienced by participants during the implementation process. Three key categories identified as factors leading to resistance were inadequate communication (40%), avoidance of organizational barriers (19%), and implementation plans (20%) that lacked clarity of goals and expectations, inadequate on-going provisions of resources, and promoted a perception of administrators’ short-term commitment for mapping.

Table 16

*Elementary Perspectives of Leadership Attributes Inhibiting Buy-in*

Cover and included terms	Percentage of Comments
Inadequate Communication	41%
Limited Shared Vision	12%
Limited Moral Purpose	7%
One-way Communication	22%
Limited Resources	11%
Time	6%
Professional Development	4%
On-site Support Team	1%
Avoidance of Organizational Barriers	19%
Traditional Mental Models	9%
Negative Culture	10%
Inadequate Implementation Plans	20%
Limited Accountability and Monitoring	9%

Table 16 indicated that limited resources were a factor inhibiting initiative buy-in. Although participants discussed inadequate resource provisions during the 2005-2006 and 2006-2007 school years, the majority of the perceptions about resources related to inadequate provisions associated with implementation plans. Participants were provided with professional development and time to develop maps during the 2006-2007 and 2007-2008 school years. However, I did not provided support or training for elementary school teachers during the 2008-2009 and 2009-2010 school years. Inadequate resources combined with inadequate communication from administrators led to the perception that there was limited administrative support and commitment for mapping.

Table 17 was based on 178 coded pieces of data that describe the participants' perceptions of leadership attributes that are essential to promote buy-in and sustainability of a curriculum mapping initiative. A key domain associated with buy-in included communication (39%) that promotes a vision about the benefits and relevance of mapping, sufficient provisions of resources (28%), and articulated implementation plans (17%) that demonstrate administrative commitment to mapping.

Table 17

*Elementary Perspectives of Leadership Attributes to Promote Buy-in*

Cover and included terms	Percentage of Comments
Continual Communication	39%
Shared Vision	28%
Moral Purpose	3%
Two-way Communication	8%
Sufficient Resources	28%
Time	9%
Professional Development	10%
On-site Support Team	9%
Build Organizational Bridges	9%
Positive Culture	4%
21 <sup>st</sup> Century Mental Models	5%
Articulated Implementation Plans	17%
Measurable Accountability and Monitoring	7%

Patterns that emerged from the data provide insights into the cause and effect relationship of leadership attributes leading to initiative buy-in. An essential buy-in factor suggested by Table 15 and Table 17 is communication that provides participants with opportunities for two-way communication and an understanding of the purpose and

relevance of the initiative. Participants suggested buy-in resulted when they were afforded opportunities to provide input into the implementation process so that they felt a sense of ownership in the initiative.

Conversely, Table 16 suggested that one-way communication and district mandates did not provide opportunities for teacher input into the implementation process and did not develop a shared vision and understanding of the purpose of the initiative inhibited buy-in. Additional inhibiting factors indicated by Table 16 included inadequate provisions of resources and implementation plans that lacked clarity of goals and expectations. Table 16 and Table 17 present additional factors not identified in Table 15. Factors not identified in Table 15 related to accountability and monitoring of the initiative and organizational elements that might impact buy-in and sustainability. Data suggested that avoidance of organizational barriers and non-usage of mapping information resulted in resistance to change.

**Theme 1: Limited vision and purpose result in resistance.** Forty-one percent of the perceived leadership attributes inhibiting buy-in to curriculum mapping were attributed to inadequate communication. Participants remarked that their principals provided limited information about the implementation rationale and did not develop a shared vision as to the potential benefits derived from mapping. As a consequence, there was confusion and speculation about mapping. ELED 5 indicated that “many people thought it came from you [the researcher] because you needed data for your dissertation [but] nobody [really] knew where it came from.” Although JELED had been a member of the junior high school core committee, she remained uncertain as to the purpose of

mapping. JELED speculated, “My guess would be to try to find holes in our curriculum that weren’t being met [and] to help improve [state tests] scores.” ELED 6 stated, “I don’t think people really knew where they were supposed to go with it [mapping].”

Three of the participants suggested that their understandings of the implementation rationale and vision for mapping came from professional development sessions facilitated by me. ELED 1 explained:

It was my understanding that eventually these maps would be used collaboratively between grade levels and between buildings so that our curriculum could be aligned much better and so that we could see some scaffolding through the grade levels. [However,] I don’t think it came from the unit office and I’m sure it didn’t come from my principal; [so,] that had to have come from meetings at the tech office when we were all together and the expectations came directly from [the researcher] as to what we were doing and what her vision was.

Participants suggested that resistance was also a result of one-way communication between teachers and administrators. Instead of encouraging teacher input into the implementation process, mapping was viewed as an administrative mandate. ELED 1 suggested that “a lot of teachers feel like this has been you will do it and we don’t want to hear from you about it. Just do it.” An anonymous respondent at the elementary school level to the *2007-2008 Curriculum Mapping Needs and Goals Survey Report* suggested that “teachers have not bought into it [curriculum mapping because] there wasn’t enough teacher input into the process. Most feel pressured into the process [and] there is enough stress without adding another thing to do.”

**Theme 2: Implementation inconsistencies result in resistance.** Data suggested that three key factors that contributed to resistance of mapping were inadequate implementation plans (20%), limited resources (11%), and limited accountability and monitoring (9%). Participants identified several indicators of inadequate implementation plans, but the three primary issues were the perception of a short-term commitment to mapping, lack of clarity in goals and expectations, and insufficient provisions for on-going support.

Participants indicated that administrators had not provided a clear understanding of the goals and expectations for mapping, and as a result, teachers felt confused and frustrated. ELED 2 described the frustrations conveyed by several of the participants:

It's just more confusion. You know, where did it come from? Why was it mandated? As a district, what was the purpose of it? Where were we going with it? What did we hope to get out of it? Those are, you know, its confusion and to invest time and energy into it and to see no end, no goal.

According to participants, the mandate to commence mapping with reading added to this confusion and frustration. Participants indicated that reading was an extremely challenging content area to map because the state standards for reading were subdivided into five components, and it was challenging for teachers to separate classroom expectations into the different categories. Participants thought it would have been better to initiate map development in another content area and to initiate collaborative development of Master Maps instead of individual Diary Maps. The national consultant warned unit office administrators that reading was the most difficult area to map and

recommended the district initiate mapping at the elementary level in science or math. However, the unit office decided to mandate the development of individual Diary Maps for reading. Compounding participants' confusion about the purpose of mapping reading was the fact that the unit office had mandated use of the district adopted reading textbook and prohibited deviation from the series.

Participants suggested that inconsistencies and inadequate resource provisions were contributing factors resulting in resistance and the perception that mapping would not be sustainable. Professional development records from 2006-2007 school year indicated that elementary teachers were provided with limited mapping training. Most of the professional development training for teachers during the 2006-2007 school year was allocated for junior high and high school teachers.

The 84 teachers in the five elementary schools were provided with three 90 minute training sessions. In September, 2006, I introduced the concept of mapping to teachers and engaged them in collaborative mapping activities using reading resources available from the state website. The national consultant presented sessions during October, 2006 that explained how to develop the content and skills section of a map. In November, 2006, the national consultant reviewed previous topics and explained how to develop the assessment section of the map so that there was alignment among the three mapping elements. In April, 2007 teachers were provided with one half-day opportunity to develop one complete monthly map within the Internet-based mapping system.

During the interim between sessions with the national consultant, I provided after-school training sessions for teachers who wanted to participate. Participating teachers

were provided with a stipend. Also, I was available one day a month at each elementary school to teachers who wanted assistance during their planning period. The goal for the 2006-2007 school year was for each elementary teacher to complete one monthly Diary Map within the Internet-based system.

Professional development for the 2007-2008 school year was provided by me. Records for the 2007-2008 school year indicated that most of the elementary teachers were provided with three full days of training and a ½ day vertical articulation session at the tech office so they could each have an individual computer station. One full day was provided per quarter. The fourth quarter included an additional ½ day session for vertical articulation; however, conflicts in the school calendar prevented some teachers from participating in this session. Different combinations of grade level representatives from each school met during the three full days. My professional development maps and agendas indicate that teachers were engaged in collaborative inquiry activities during each session and were provided with personal mapping time and I provided assistance when teachers deemed it necessary.

Quarterly reports submitted by me to unit office administrators included progress reports towards the unit office's goal for each teacher to develop a year's worth of Diary Maps, teacher evaluations of the session, professional development maps and agendas, and copies of the collaborative inquiry products generated by the teachers. I emailed final versions of the collaborative products to grade-level teachers after each mapping session. The fourth quarter report indicated that vertical articulation sessions provided teachers with an opportunity to use their maps to identify gaps and redundancies and to

use various report and search options available within the Internet-based system. The fourth quarter report described each teacher's progress towards meeting the stated unit office goals and indicated that most of the elementary school teachers were able to achieve the stated unit office goals.

The unit office built additional School Improvement Plan (SIP) days into the 2007-2008 school year and suggested that a portion of the time be allotted to teachers for personal map development. However, each of the participants indicated that administrators encroached upon the time that was allotted for personal mapping. According to ELED 3, "We hardly ever got time. She [the principal] would come back with some weirdo idea and present it. We'd do some game. And we thought, oh, we're supposed to be doing our maps." Participants indicated that after participating in the administrator lead activity or meeting, they might be given the final 15 or 30 minutes to work on their personal maps. ELED 4 related, "It took me 30 minutes to get all my papers laid out, the folders open and everything to the right page and then it was the end of the day." ELED 7 suggested that since the principal did not provide adequate time, and "that lead me to believe that it's not the most important thing to my administrator."

Participants indicated their principals had not said anything about mapping during the 2008-2009 school year. Although JELED 9 stated that her former junior high school principal said that mapping is "not going away," JELED 9 noted that the elementary school principal had not mentioned mapping and that no time had been provided for mapping. ELED 8 commented that mapping "was pushed so hard last year [2007-2008] and then this year we haven't heard anything." ELED 8 commented that administrators

had indicated that “you have to do it, but after they [maps] were done, nobody ever said anything” about mapping. ELED 4 related that, “we wondered if even we were supposed to be doing it and nobody has gotten on to try their password.” Participants concurred that they had not used the mapping system since their last professional development session at the end of the 2007-2008 school year. ELED 7 added, “I wasn’t even aware that other schools were still mapping.”

I used the Internet-based system to triangulate participants’ claims that nothing had been done with mapping during the 2008-2009 school year. The system confirmed that there were no maps housed for the elementary school teachers during the 2008-2009 school year and through December of the 2009-2010 school year. ELED 2 voiced sentiments held by other participants by stating, “I felt like my time [developing Diary Maps] was wasted. My energy was wasted.”

Thus, participants perceived that leadership during the implementation process had inhibited buy-in of mapping, and most of the participants perceived that mapping would not be sustainable within Wards Mill School District #4. Leadership during implementation also resulted in mixed perceptions of the benefits of mapping.

**Theme 3: Perceived benefits of mapping.** ELED 2 did not perceive any benefits from the mapping process, but ELED 3 suggested that benefits had not been achieved because “we just kind of stopped before [being] fully into it.” ELED 6, and other participants, did perceive benefits from the mapping process but noted that:

There’s kind of a frustration that what could have been a good initiative, what they’ve spent a lot of money on, they [administrators] didn’t take the time to plan

this out... If it's important to you and important enough to spend this kind of money and professional development time and everything on [why didn't you] have a clear plan of action and communication with staff?

Participants who had perceived benefits from mapping suggested that those perceptions were based on professional development experiences during the 2007-2008 school year. Participants suggested that the mapping process had (a) raised awareness in the state standards and alignment of curriculum with standards, (b) aided in the identification of vertical gaps and redundancies in the curriculum, (c) raised awareness in state assessment tests and modifications that might be made during classroom instruction to better prepare students, (d) promoted curricular discussions in strategies for improving curriculum, and (e) raised awareness in how various report and search options within the Internet-based system might be used to make SIP connections.

Additionally, ELED 6 suggested that maps might “really be a help to a new teacher and other teachers working together to look at a plan that they can follow [and] it helped [teachers] know a little bit more about what is expected at the next grade.” ELED 8 noted that the mapping process helped teachers align “what we are teaching with the state standards which before, we would follow pretty much what the book said to do but we didn't really align it with standards and didn't know the standards.” ELED 2 acknowledged that the mapping process showed that “there were gaps and holes in the reading series, but [suggested] it fell on deaf ears; and nothing was ever achieved; and it went nowhere.”

To triangulate the participants' perceptions of benefits from mapping, I reviewed collaborative inquiry reflections that had been anonymously written during third quarter professional development sessions during the 2007-2008 school year. The 10 minute quick writes were written at the end of a professional development session by K-5 teachers and were included in the *2007-2008 Third Quarter Curriculum Mapping Report* submitted by myself to Unit Office Administrators. One writer indicated that "curriculum mapping is a tool that can help educators reflect on the content, skills, and assessment that is being provided." A second writer stated, "I became more aware of how specific standards were related to our curriculum, reading text. I also became more aware of how specific content within our second grade texts related to [state] testing." A third writer noted, "I feel that being able to generate reports and search for specific skills will be very helpful in identifying gaps in our teaching."

An additional source for triangulation included the use of data from the *2006-2007 and 2007-2008 Curriculum Mapping Needs and Goals Survey Report*. Data in the 2007-2008 report provided comparative results of perceived benefits of mapping during the 2006-2007 and 2007-2008 school years. The surveys were sent as a census to K-12 teachers in the district using the district's Internet-based communication system. The 2006-2007 return rate for elementary teachers was 42%, and the 2007-2008 return rate was 45%. Table 18 was generated based on findings presented in the 2007-2008 *Curriculum Mapping Needs and Goals* survey report submitted to the unit office administrators during the summer of 2008.

Table 18

*Elementary Trends in Mapping Perceptions*

Raised Awareness	Likert Response Percentages	
	Agree	Strongly Agree
<b>State Standards</b>		
2006 – 2007	68%	0%
2007 – 2008	46%	27%
<b>Curricular Alignment</b>		
2006 – 2007	66%	9%
2007 – 2008	65%	11%
<b>Gaps &amp; Redundancies</b>		
2006 – 2007	69%	9%
2007 – 2008	70%	3%
<b>Promotion of Curricular Dialogue</b>		
2006 – 2007	46%	3%
2007 – 2008	57%	8%

Survey findings presented in Table 18 suggest that the survey respondents concurred with interview participants' perceptions of mapping benefits.

**Theme 4: Organizational change barriers.** Nineteen percent of the participants' perceived leadership attributes that inhibited initiative buy-in were the result of organizational barriers. Participants discussed implementation trends within the district that inhibited initiative buy-in. Participants' perceptions of district initiatives were that they would be short-lived because of the capricious nature of the administration. ELED 5 suggested that mapping was the latest educational fad, "it's just like a whim. They get a whim and oh, let's go in this direction [but] I see it [mapping] sliding down the slippery slope just like so many other things in our district have gone."

Each of the participants indicated that it was hard to buy-into initiatives presented by the administration because historical implementation trends within the district suggested that an initiative would be abandoned even if there was teacher buy-in. ELED 1 explained, “We don’t know where anything is going. I think that’s the climate of the district.”

Eight of the nine participants suggested that a negative climate existed within the district. According to participants, the climate of fear and mistrust between elementary school teachers and administrators was due to punitive actions and threats. ELED 1 suggested, “There’s a hostile attitude in the district towards the administration in a lot of ways because people feel like they are arbitrarily moved for job assignments.” ELED 6 explained, “There’s lots of examples of intimidation and you know, reprisals for when someone doesn’t agree. [Reprisals like an arbitrary change in] job positions.”

Since the participants were not aware of how maps housed in the Internet-based system were to be used, there was speculation that mapping information might be used against them. ELED 7 suggested that the maps might “be used as maybe a policing tool from the administration to see if they [teachers] were doing exactly what the administration was wanting them to do.” Participants explained that their perceptions were based on perceived punitive actions resulting from administrator reviews of reading grades housed in the Internet-based grading system.

The administration decided that some teachers were not recording a sufficient number of grades and were not appropriately weighting some of the grades that had been recorded. Therefore, unit office administrators sent out a memo to K-5 teachers in December, 2007 mandating the specific number and type of reading grades that were to

be recorded per week and the weighting of these grades. ELED 3 described it as the “hammer in the middle of the year.” ELED 1 described the shift as a “debacle ... [that] made teachers in the district feel like, oh, my gosh, big brother’s watching me.”

As a result of the concerns raised by the teachers, the unit office formed a committee of K-5 teachers representing each of the schools to reevaluate the mandated method for determining the final English language arts grades. Site-based representatives met with teachers to share a document, *Notes from Reading Committee Meeting*, that described recommendations from their January 30, 2007 meeting with administrators. The document indicated that the committee was “seeking your [teachers] written suggestions regarding the required activities for each of the [3 Language Arts] categories. Although teacher input eventually was incorporated into the new grading system, participants indicated that the incident made them fearful that mapping information might be used against them.

ELED 2 explained that during a meeting with the literacy coach, teachers “were told that we specifically had to go by the reading series [and to] follow the reading series to-a-t.” Participants explained that the literacy coach’s mandate magnified teachers’ fears about mapping. Participants suggested that the grading “debacle” and the literacy coach’s mandate resulted in maps that did not accurately portray classroom practices. ELED 7 explained that “I wasn’t exactly sure how valid some of the maps were [because] people were just putting in information and maybe not actually doing that in their classroom.” ELED 3 admitted to not being “very honest in my maps because they looked at my grade book on-line, and I was questioned about the way I was grading.”

ELED 1 explained that teachers were “fearful that if you honestly and truly map what you’ve done in your classroom that you are going to be compared to somebody else and found less credible.” ELED 4 related how teachers at her school and grade level “typed up one map and then copied into everybody’s map.” Participants suggested that several teachers developed maps based on what they thought the administration might want to read rather than what actually occurred in their classrooms. ELED 4 explained, “I had a fear that the curriculum map was going to be scrutinized [to determine if I’m] doing what I was told [and if not] I could become accountable.”

In addition to fears of retribution, ELED 1 suggested that “a lot of teachers see this [mapping] as punishment for the junior high and high school not making Adequate Yearly Progress [AYP].” According to ELED 1, “we’ve been beaten to death with those test scores and they [elementary teachers] are like, my kids are fine. My kids made AYP. Leave me alone.” ELED 1 suggested that there “is almost an adversarial thing between the junior high and the high school verses grade school.” Although test scores were a factor in the perceived relationship, ELED 1 perceived that additional “adversarial stuff” pertained to conflicting interest among the grades levels that occurred during previous contract negotiations.

ELED 3 suggested that “there’s a big morale problem [and] they can’t go anywhere without fixing that first.” ELED 1 concurred that “the atmosphere has got to change. Otherwise, curriculum mapping is just going to be deemed another one of those useless fads in education that’s come along. It will be here today and gone tomorrow.”

Since JELED 9 had been transferred to the elementary level at the end of the 2007-2008 school year, she could not speak to the issues raised by the other participants.

**Theme 5: Leadership for promoting buy-in.** Participants suggested that there was a cause-and-effect relationship between the lack of administrator knowledge about mapping and the challenges experienced during the implementation process. ELED 8 stated, “I’m not sure they [administrators] know exactly the process themselves. ELED 8 had based this conclusion on the fact that the principal “never really offered any help or anything.” ELED 2 commented, “I think mine [principal] doesn’t value it. There’s no push for us to do it or support or motivation for us.” ELED 1 stated that her principal’s words gave her the impression that principals had not been engaged in the planning process. According to ELED 1, during a faculty meeting, the principal described mapping to be:

like a runaway train that has already left the station and we are all just trying to jump on board. So, that is not encouragement and that shows that even she didn’t feel like she was apart of it and that we were all just playing catch-up and that it [mapping] was going with us or without us.

ELED 1 stated that if her “principal is not even on board; then this is not something I have to take too seriously.” Participants agreed that their perception of mapping had been negatively impacted by the lack of supportive communication and assistance from the principal. ELED 7 suggested that “commitment to it [mapping] needs to be very clear from the administrators” because teachers need to know “it’s not something that’s going to go by the wayside in a couple of years.”

ELED 1 explained, “If your [teachers] are not given any insight, if you [administrators] don’t give me the value, the bottom-line that this is why we are doing this; then, I don’t feel like you’re fully vested in it.” Participants suggested buy-in was contingent upon the administrator’s ability to foster a shared vision of the relevance and benefits of mapping and an understanding of the implementation rationale. ELED 1 suggested that administrators “need to have some documented evidence that shows that mapping works.” According to ELED 1,

If teachers can see that this works, then they will back you. They will give you everything they have got. They will give you 100% cooperation, if they feel like what they are doing is going to benefit their children in their classroom.

Participants also suggested that it was essential for administrator to be knowledgeable about mapping so that they could provide assistance to teachers. ELED 7 stated that it was important for administrators to be very knowledgeable “because they’re supposed to be the teachers’ teacher whenever they are initiating” something new. ELED 8 stated “we had to have someone to go to, to give us help when we got stuck,” but participants did not think their principals were knowledgeable enough to provide guidance and support. ELED 3’s perception was that her principal did not “understand it [mapping] because she’ll give us conflicting information.” Participants suggested that the researcher was the only resource person available for mapping assistance.

Participants also suggested that it was important for administrators to make teachers feel that their efforts were valued and appreciated. ELED 7 indicated that administrators needed to “be more encouraging” and acknowledge that mapping is

something new and that it is “going to be time consuming, but we’re going to give you the time to do it.” In addition to being supportive, JELED 9 stated that principals should “be our [teachers] advocate for getting us time to work on the map and giving us time as a school to look at each other’s maps” and to use mapping information to make school improvements.

In addition to time for map development and usage, participants indicated that sufficient professional development time needed to be provided so that teachers had a sense of personal mastery of the necessary mapping skills. Participants indicated that too much time elapsed between training sessions and the time allotted for personal mapping; therefore, participants had to retrain themselves before they could develop their maps. Participants suggested that administrators needed to provide explicit mapping time and mapping expectations. JELED 9 suggested that “everyone [in the district needs to] know that [maps are due] by the first of the month [and that] you need to get it in by then [so] we can look at it [the maps] and make some comparisons...and look for some gaps.”

ELED 8 suggested that “there needs to be some pre-training. You need some background.” Participants suggested it was imperative for administrators to build teacher leadership capacity and engage teachers in the implementation process. Participants suggested that a prologue might include consecutive days of summer professional development sessions for teacher leaders and administrators. According to participants, a leadership team should be created at each school to provide assistance to colleagues.

ELED 1 suggested that in addition to a “building level leadership” team, there “has to be some kind of collegial relationship from building to building” so that there is

continuity in the messages that are conveyed. ELED 4 concurred that there needs to be “continuity between all the buildings and administrators and teachers.” ELED 1 stated that “there has to be some kind of communication at the teacher level where they take over ownership and then they will be more willing to put their heart and soul into it and make it a valuable, viable tool” within the district.

Participants suggested that administrators needed to provide some form of incentives to teachers. The incentives suggested by participants included stipends, reduction of work load, or the purchase of classroom materials. ELED 1 and JELED 9 suggested that a method for providing teachers with collaborative time might be for the principal or other personnel to assume a teacher’s duty. ELED 1 suggested that reducing the work load might mean that teachers did “not turn in certain [lesson] plans.” ELED 1 stated that “if I’m willing to give my time after school or other hours, there has to be some kind of incentive. It doesn’t have to be money, but there has to be some kind of incentive.”

ELED 6 stated that “there needs to be more grade level meetings and more cross-grade level meetings” to arrive “at a more general consensus at what is expected as they [students] finish one grade and enter another.” ELED 8 suggested that administrators “need to get the whole entire school system onboard. If you’re going to do it, everybody needs to be doing it.” Participants suggested that implementation plans need to be supportive of site-based needs, but a comprehensive district-wide plan was also needed, concerning how maps were to be developed and used for identifying and addressing curricular gaps and redundancies.

## **Summary of Findings for Elementary School Teachers Case**

### *1. How does the implementation of the Jacobs model of curriculum mapping impact teachers' perceptions of leadership roles and responsibilities?*

Data presented by the participants suggest a cause and effect relationship between administrative actions and challenges presented to participants during the implementation process. Participants suggested that inadequate administrative knowledge and preparation for implementing mapping, insufficient two-way communication and engagement of teachers, and insufficient on-going support negatively impacted teachers' perceptions of mapping. Experiences during the implementation process of the Jacobs model of curriculum mapping impacted participants' perceptions of leadership roles and responsibilities.

One of the findings of this study was that, as a result of implementing the Jacobs model of curriculum mapping, elementary school teachers perceived leadership roles and responsibilities to encompass proactive and active leadership. Proactive leadership encompasses roles and responsibilities administrators should expect to assume prior to commencing implementation of curriculum mapping. As a result of the challenges presented during the implementation process, participants perceived that proactive leadership roles and responsibilities for administrators who intend to implement mapping included the following: (a) developing administrative knowledge in curriculum mapping and the processes involved therein, (b) forming leadership teams that include teachers and administrators, (c) developing plans for identifying and providing resources and incentives, (d) identifying and addressing organizational change barriers, and (e)

formulating cohesive site-based and district-wide attainable and long-term implementation plans.

Active leadership refers to the roles and responsibilities administrators should expect to assume during the implementation process. Participants suggested that active responsibilities and roles for administrators included the following: (a) promoting a clear understanding of the purpose and benefits of mapping, (b) building teacher leadership capacity and providing on-sight support teams, (c) encouraging teacher input into the implementation process and providing opportunities for collaboration, (d) assuming the role of coach and encourager, (e) providing adequate and on-going resources and incentives, (f) implementing plans with specific and attainable goals, (g) building positive relationship, and (h) explicitly connecting the use of maps and mapping information with school and district improvement plans. Participants suggested that the essential components of leadership roles and responsibilities included engaging teachers in the implementation process in order provide them with a sense of ownership in the process, demonstrating administrative support and commitment of mapping, formulating and communicating cohesive implementation plans, and providing adequate resources. Participants also suggested that it is essential for administrators to identify and address negative culture issues which might contribute to low teacher morale.

*2. How does the leadership during implementation of the Jacobs model of curriculum mapping impact teachers' perceptions as to the sustainability of this initiative?*

Another finding of this study was that, as a result of implementing the Jacobs model of curriculum mapping, there may be a cause and effect relationship between the

role of administrative leaders during the implementation process and teachers' perceptions of the sustainability of mapping. Data indicated that participants had mixed perceptions about the sustainability of curriculum mapping. Seven out of nine participants (78%) indicated that mapping would not be sustainable, and two out of nine (22%) were not sure of its sustainability.

The participants who were unsure if mapping would be sustainable perceived definite benefits from mapping; however, the perceived lack of administrative support and the reduction of resources raised doubts about mapping's sustainability. ELED 6 suggested that the process of identifying gaps and redundancies in the curriculum was something that "they kind of have to do;" therefore, the perception was that mapping might continue "in some form." However, ELED 6 suggested that sustainability was dependent upon modifications in administrators' leadership. According to ELED 6:

If there was a real feeling that open communication is what was wanted and if there was some effort to look at where we need to make some changes and put their money where their mouth is kind of thing, [then] there might be some possibilities for change.

JELED 9 suggested that sustainability was contingent upon the administration's willingness to provide "support that will give teachers time to work on it." However, "if it's another responsibility that's given to them [teachers], I'm going to guess that it will be down at the bottom of their priority list [and] they won't do it." JELED 9 suggested that sustainability is also contingent upon someone "in the district that is actually looking at these [maps] and are going to analyze it and are going to do anything with them."

The majority of the participants (78%) did not perceive that mapping would be sustainable within Wards Mill School District #4. Evidence suggested by the participants included the following: (a) lack of administrative knowledge and support of mapping, (b) de-emphasis on mapping and non-usage of the maps, (c) short-term provision of resources allocated for mapping, (d) teachers' perception of negative cultural issues and fears that map information might be used against them, and (e) historical implementation trends within the district. ELED 1 suggested that "unless things change dramatically and unless attitudes change or unless they [teachers] can see a benefit to what we're doing, I say mapping will be gone [and] it will be labeled as something we had to suffer through." Based on knowledge gleaned from Masters' course work, ELED 7 stated:

Program that school districts implement, if they are good valid programs, take 3 or 4 years before you even see the effect of those programs and if you are not willing to stay with something or if you have the mentality going into it that this is going to go by the wayside in a couple of years, [then] just put your time in and it will go by the wayside. If you are not committed to it, you are probably not going to reap the benefits of it.

The findings from each of the three teacher cases suggested that there was a cause and effect relationship between the role of school leaders during the implementation process and teachers' perceptions of the sustainability of mapping. In addition to common patterns, themes, and relationships noted among the teacher cases, common elements between the teacher and administrative cases were also noted.

## **Level 2: Cross-Case Analysis**

Data patterns that emerged from the four cases suggested that initiative buy-in is contingent upon three key factors relating to communication, implementation plans, and resources. Three communication sub-categories emerged from patterns in the data. Data suggested that communication resulting in buy-in requires leaders to foster an understanding of the rationale for implementing the initiative and connecting this purpose with potential benefits to be derived from the initiative. Another communication responsibility for initiative buy-in suggested by patterns in the data included fostering a shared vision as to the relevance and potential benefits for stakeholders. The third communication sub-category related to whether communication was presented in one-way directives or two-way opportunities for input and initiative discussions. Data suggested that a one-way communication results in resistance, and two-way communication promotes initiative buy-in. Data from each of the four cases suggested that two-way communication to promote initiative buy-in includes collaboration between administrators and teachers to formulate and monitor implementation processes.

The second key leadership factor impacting initiative buy-in or resistance related to allocation of resources. Three resource sub-categories that emerged from the data included provisions of time, professional development, and on-site leadership teams. Data suggested that resistance results if there is a perception of inadequate resource provisions and that on-going resource provisions, especially time, are necessary to promote buy-in.

The third key leadership factor impacting initiative buy-in or resistance related to implementation plans. Inconsistencies and lack of clarity of goals and expectations emerged as elements of implementation plans resulting in resistance to initiative buy-in. A fourth leadership factor that emerged from the data related to perceived organizational change barriers. Although organizational barriers were identified in each of the four cases, the largest percentage of this data was found in the elementary school teachers' case. Common leadership themes also emerged among the cases.

**Theme 1: Inadequate administrative knowledge results in inconsistencies and resistance.** Participants in each of the cases suggested that limited administrative knowledge about mapping and its related processes resulted in implementation inconsistencies and confusion concerning the purpose and relevance of curriculum mapping. Participants in each case suggested that administrators should be able to construct curriculum maps because creating their own maps would help them understand the challenges presented during map development and would enable them to support and coach others during map development. Participants also suggested that inadequate administrative knowledge prohibiting fostering an understanding of the purpose of mapping, potential benefits from the mapping process, and how maps might be used to make school improvement connections. Inadequate administrative knowledge of mapping resulted in inadequate communication, insufficient resource provisions, and a lack of clarity of goals and expectations presented during the implementation process. The lack of clarity and a shared vision and purpose for mapping resulted in confusion and

inconsistencies among teachers and administrators at each of the three instructional levels.

**Theme 2: Limited engagement of administrators and teachers result in resistance.** Although the degree of engagement in the mapping process varied, a common theme that emerged from each of the cases was that the curriculum mapping initiative was primarily a unit office mandate and that stakeholders had limited or no input into the implementation process. Emergent patterns in the data suggested that buy-in was contingent upon the two-way communication which stakeholders used to provide input into the implementation process. However, data also suggested that the primary form of communication during the implementation process of curriculum mapping was one-way communication. Data suggested that the lack of engagement in the implementation process inhibited initiative buy-in.

**Theme 3: Organizational change barriers.** A common organizational change barrier identified among the cases related to historic implementation trends within the district. Participants indicated that historic trends within the district suggested a short-term commitment to initiatives. The perceived historic trends coupled with the challenges presented during the implementation process inhibited buy-in to curriculum mapping. Additional organizational barriers presented by participants included the lack of systemic collaboration and planning. Participants suggested that the lack of a comprehensive, systemic implementation plan for curriculum mapping resulted in inconsistencies among the instructional levels. Some of the teacher participants suggested that negative culture issues and perceived potential punitive actions of

administrators heightened fears that mapping information might be used against them and resulted in intentional misrepresentation in the maps as a self-protect measure.

**Theme 4: Perceptions of mapping benefits.** Although participants in each of the cases suggested that maps housed in the Internet-based system had not been used to make school improvement connections, benefits from mapping were noted during the map development process. Adm 4 was the only principal to note that curricular gaps and redundancies had been identified and addressed during departmental development of Master Maps. High school participants corroborated Adm 4's perception. Although Master Maps had not been developed at the remaining instructional levels, participants in the teacher cases related commonly perceived benefits from map development.

Participants in the teacher cases noted a raised awareness of state standards, alignment of standards and curriculum, the intra-alignment of curricular content, skills, and assessments, as well as vertical and horizontal alignment of curriculum. With the exception of high school participants, teachers also suggested that the perceived benefits were the result of professional development sessions rather than the leadership provided by administrators. Data suggested a cause and effect relationship between leadership and initiative buy-in or resistance. Data also suggested a cause and effect relationship between leadership during the implementation process and teachers' perceptions of sustainability of curriculum mapping.

#### **Cross-Case Analysis Findings**

Patterns, themes, and relationships presented in the data were used to determine findings that address the following research questions: (a) *How does the implementation*

*of the Jacobs model of curriculum mapping impact administrators' perceptions of leadership roles and responsibilities?(b) How does the implementation of the Jacobs model of curriculum mapping impact teachers' perceptions of leadership roles and responsibilities? and (c) How does leadership during implementation of the Jacobs model of curriculum mapping impact teacher's perceptions as to the sustainability of this initiative?*

One of the findings of this study was that as a result of implementing the Jacobs model of curriculum mapping, administrators and teachers perceived that leadership roles and responsibilities included proactive and active leadership. Proactive leadership relates to leadership roles and responsibilities that administrators intending to implement curriculum mapping in the near future should expect to assume in preparation for commencing the implementation process. Active leadership relates to leadership roles and responsibilities that administrators should expect to assume during the implementation process.

Perceptions of proactive leadership roles and responsibilities included the following: (a) developing administrative knowledge in curriculum mapping and the processes involved therein, (b) identifying potential organizational change and resource barriers and developing a plan to address these issues, (c) forming leadership teams including administrators and teacher, and (d) formulating cohesive site-based and district-wide attainable and long-term, systemic implementation plans. Participants suggested that a component of the implementation plan should include a prologue in which the leadership team composed of administrators and teachers collaborate to gain knowledge

and experience in the mapping process, identify and address potential problems, and develop a shared vision of potential benefits.

Perceptions of active leadership roles and responsibilities included the following:

(a) promoting a clear and consistent understanding of the purpose and benefits of mapping, (b) building teacher leadership capacity and providing on-site support teams, (c) assuming the role of coach and encourager, (d) providing adequate and on-going resources and incentives, (e) educating and explicitly connecting usage of mapping information with School Improvement Plans (SIP), (f) building positive relationships and promoting horizontal and vertical collaboration among teachers, administrators, and attendance centers, and (g) communicating and implementing clear and consistent plans with specific and attainable site-based goals that demonstrate connectivity with district-wide goals. This finding suggested that promoting buy-in to curriculum mapping requires assuming proactive and active leadership roles and responsibilities and fostering the development of a collaborative culture.

Another finding of this study was that there was a cause and effect relationship between leadership during the implementation process and teachers' perceptions of the sustainability of curriculum mapping within Wards Mill School District #4. Perceptions of sustainability were impacted by the level of administrative support and commitment for mapping that was presented by the principal's words and actions, perceived benefits from the mapping process, and usage of mapping information. As the perceived level of administrative support of mapping decreases, teachers' perceptions of sustainability also decreased.

Findings from this study also suggest that perceptions of organizational change barriers impact sustainability. Organizational change barriers within Wards Mill School District #4 included historical implementation trends and negative culture issues. Historical implementation trends within the district suggest short-term support and commitment of initiatives. This lens of reference impacted sustainability perceptions even if there had been perceived benefits or potential benefits of the mapping process. A perceived leadership trend that de-emphasized mapping and the inadequate resource provisions coupled with historic implementation trends within the district raised doubts about the sustainability of this initiative.

In addition to historic implementation trends within the district, another organizational change barrier within Wards Mill School District #4 included negative cultural issues such as perceived adversarial relationships. The findings from this study suggested a cause and effect relationship between perceptions of mapping and the type of relationship among stakeholders within the district. The type of relationship between administrators and teachers in addition to the type of relationship among teachers might have impacted perceptions of mapping and its sustainability. High school participants represented the largest percentage of teacher who perceived that mapping would be sustainable. Unlike participants at other instructional levels, high school participants indicated that they were engaged in collaborative mapping activities that resulted in the development of Master Maps. The findings also suggest that as the level of fear and mistrust of the administrators increased, perceptions of the sustainability of mapping decreased. Participants at the elementary level had the largest percentage of teachers that

did not perceive that mapping was sustainable and also raised the largest percentage of fear-based issues. Additionally, the findings suggest that the level of administrative commitment for mapping impacted perceptions of sustainability. Participants at the high school level indicated that their principal was committed to and supportive of curriculum mapping and suggested that his level of commitment impacted their perceptions of sustainability. Furthermore, the elementary participants indicated that their administrators were not committed to the mapping initiative and that this negatively impacted their perception of sustainability. Findings suggest that teachers drew conclusions concerning the sustainability of mapping by whether they perceived that their principal's actions legitimized or delegitimized the curriculum mapping initiative.

### **Theoretical Proposition**

The theoretical propositions that guided this study were based on elements in change theory and components in the Jacobs model. Change theory suggests that sustainability of large-scale initiatives are contingent upon the following: (a) leaders' understanding of the magnitude of change represented by the initiative and their ability to appropriately address issues that might negatively impact stakeholders, (b) the development of a shared vision and understanding of the purpose for change; (c) adequate provisions of incentives and resources so that personal mastery of the skills required for change are developed; (d) development of systemic implementation plans that appropriately respond to the needs of stakeholders at various levels in the organization in order to make continual progress for obtainment of a common goal, (e)

collegial knowledge creation focused on obtainment of initiative goals, and (f) addressing mental models that are not conducive to the change initiative.

The Jacobs model of curriculum mapping provides a framework for large-scale, systemic social change focused on a raised awareness of curricular alignment, both horizontally and vertically, with the standards students must master to improve student achievement. Attainment of this stated goal is contingent upon the development and utilization of collaboratively developed Master Maps of the intended curriculum which are designed to address curricular gaps and redundancies and the development of personal Diary Maps that represent the implemented curriculum. Mapping information is analyzed with other student achievement data so that data-informed decisions can be made. An additional key component of the model includes building teacher leadership teams, both site-based and district-wide, that collaborate with administrators to develop implementation plans to address curricular issues arising from the analysis of mapping information and curricular dialogue.

It was my theoretical proposition that mapping was initiated without a clear understanding by administrators and teachers of the magnitude of change represented and that traditional mental models within the district would pose implementation challenges and inhibit sustainability. I perceived that these traditional mental models included top-down leadership, schools functioning as independent agents, teacher isolation and limited collaboration, isolated learning rather than collaborative inquiry and team learning, and non-systemic planning processes that guided implementation plans.

There is evidence to support my theoretical proposition that traditional mental models were operational within the district and that they posed implementation challenges and inhibit buy-in and sustainability of the curriculum mapping initiative. Traditional mental models for education include schools acting as independent agents, hierarchal decisions, limited collaboration among teachers and administrators within a building and among schools within a district, and managerial leadership. The manner in which administrators formulated implementation decisions and the roles assumed by stakeholders during the implementation process correspond with traditional mental models for education.

Curriculum mapping commenced within Wards Mill School District #4 in response to a site-based problem identified at the high school; however, it became a unit office mandate for all schools within the district. Curriculum mapping is intended to be a large-scale systemic model; however, there was no evidence to suggest that stakeholders within the three instructional levels collaborated to develop district-wide implementation plans. Instead, the data suggested that the three instructional levels independently implemented curriculum mapping and demonstrated limited knowledge of mapping progress within the district. Administrators assumed traditional managerial roles of providing resources, but they were not actively engaged in building a shared vision for mapping and facilitating learning of mapping processes. In the Jacobs model of curriculum mapping, teachers become the curriculum designers and curriculum leaders. However, the data suggested that administrators did not build teacher leadership capacity and engage teachers in leadership teams within the Jacobs model. Instead of encouraging

teachers to collaborate and become curriculum designers, elementary teachers were mandated to not deviate from the school board adopted reading series. The manner in which implementation decisions were made and the roles assumed by stakeholders within Wards Mill School District #4 depicted traditional mental models for education.

Curriculum mapping was met with mixed levels of support among participants representing the three instructional levels. Table 19 describes teachers' perceptions of the sustainability of curriculum mapping within Wards Mill School District #4. Table 19 is organized to by instructional levels and indicates participants' years of teaching experience, the grade level taught by the participant, the content area the participant mapped, and each participant's perception of the sustainability of mapping within Wards Mill School District #4.

Table 19

*Instructional Level Sustainability Perceptions*

Participant Code	Years Experience	Grade Level	Content Mapped	Sustainability		
				No (N)	Not Sure (NS)	Yes (Y)
ELED-1	20	2	Reading	N		
ELED-2	27	5	Reading	N		
ELED-3	20	K	Reading	N		
ELED-4	11	1	Reading	N		
ELED-5	12	5	Reading	N		
ELED-6	28	K	Reading		NS	
ELED-7	4	4	Reading	N		
ELED-8	29	2	Reading	N		
JELED-9	31	6-8	Science		NS	
JH-1	14	8	Math		NS	
JH-2	9	7	Science		NS	
JH-3	16	6	Science		NS	
JH-4	8	6	Language Arts			Y
JH-5	12	6	Keyboarding			Y
JH-6	16	7	Civics	N		
JH-7	19	7	Science	N		
JH-8	15	8	Science	N		
JH-9	15	7	Math		NS	
HS-1	18	9-12	Art			Y
HS-2	18	9-12	Math		NS	
HS-3	3	12	Science			Y
HS-4	4	11-12	English		NS	
HS-5	12	9-12	Math		NS	
HS-6	14	9-12	History			Y
HS-7	26	9-12	Consumer Ed			Y

Table 19 indicates that perceptions of sustainability at the high school level were more positive than perceptions at the elementary and junior high levels. The curriculum mapping initiative commenced at the high school level in order to address a site-based problem identified by Adm 4. However, mapping commenced at the other instructional levels based on a mandate from the unit office. The data indicated that district-wide implementation plans were not formulated; instead, each instructional level independently implemented curriculum mapping. Therefore, the findings of this study suggest a cause and effect relationship between leadership roles and responsibilities and teachers' perceptions of mapping and its sustainability within Wards Mill School District #4. My theoretical proposition suggested that traditional mental models within the district would inhibit perceptions of mapping and its sustainability. Although data from the junior high and elementary school levels were supportive of my theoretical proposition, data from the high school level was discrepant and will be explained in more detail in the section below.

#### **Discrepant Data**

Data in Table 19 suggests that perceptions about sustainability at the high school level may be evidence of a discrepant case. Although cross-case data suggested that curriculum mapping became a unit office mandate, it commenced at the high school level as a tool for addressing a site-based problem. Adm 4, the high school principal, indicated that his interest in mapping was the result of observed curricular discrepancies among teachers within a department and his perception that the curriculum mapping process might serve as a tool for addressing curricular discrepancies. Therefore, mapping had

been initiated as a curricular tool for addressing the curricular gaps and redundancies and as a method for providing curricular consistencies among teachers within a department.

Prior to commencing the implementation process, Adm 4 indicated that he began “planting seeds” about the purpose of mapping and fostering a shared vision about the benefits from mapping and how it might address curricular discrepancies. The vision and purpose for curriculum mapping presented by high school participants corresponded with those presented by Adm 4. High school participants also indicated that during the early phases of the implementation process, Adm 4 had explicitly allocated school improvement time for collaboration among teachers within departments and personal mapping time as well as specific goals to be accomplished during the time that was allotted.

High school participants acknowledged that they had perceived curricular benefits from the mapping process. Mapping had helped address the intended purpose of eliminating curricular gaps and redundancies and had helped develop common expectations for students. Although high school participants suggested that Adm 4’s lack of mapping knowledge had resulted in a false start and posed additional challenges for teachers, participants suggested that Adm 4’s perceived commitment to mapping, acknowledgement of teacher efforts, perceived benefits from mapping, and the positive relationship between teachers and Adm 4 had resulted in a willingness to believe in the sustainability of mapping.

The data suggested that Adm 4’s leadership helped to instill a shared vision and purpose for mapping in the minds of the high school teachers, but leadership at the

elementary and the junior high school level did not result in a commonly held vision and purpose for mapping. Data indicated that Adm 4 commenced mapping as a possible solution to a site-based problem; however, implementation of mapping at the junior high and elementary school levels were the result of a unit office mandate rather than a possible solution to site-based problems. The district did not develop systemic implementation plans which resulted in confusion and a lack of clarity as to the purpose and goals of the mapping initiative. Teachers at the high school level collaborated to develop Master Maps and identify and address horizontal and vertical curricular gaps and redundancies. Teachers at the junior high and elementary school levels were mandated to work independently to develop Diary Maps instead of collaborative development of Master Maps. Data from the high school level does not directly support my theoretical proposition and therefore represents a discrepant case.

### **Evidence of Quality**

I used a variety of strategies to improve the quality of this study. Strategies used to improve the reliability of the study included the following: (a) explaining the researcher's assumptions and theories underlying the study, (b) detailing the audit trail of how the study was conducted and how the data was used to derive the findings, (c) describing and consistently applying study protocols within each case, and (d) utilizing multiple sources of data to triangulate information provided by the participants (Merriam, 1998; Yin, 2003). I explained her assumptions associated with the Jacobs model of curriculum mapping and how it might improve teachers' knowledge of state standards, curricular alignment, and reflectivity concerning the intra-alignment of content, skills,

assessments, and standards. I also described her assumptions pertaining to leadership required for implementing the Jacobs model of curriculum mapping and how the model might impact social change within the Wards Mill School District #4. Evidence from the audit trail and interview protocols is provided in the Appendixes (see Form A1, Form A2 in Appendix A; Audit Trail B1, Audit Trail B2 in Appendix B).

Using multiple sources of data to triangulate information from participants and detailing the audit trail are also methods for improving validity (Creswell, 1998, 2003; Merriam, 1998; Yin, 2003). Multiple sources of data spanning five years were used for triangulation. Data sources included unobtrusive documents such as quarterly professional development reports, survey reports, professional development records and agendas, and communiqués. Additional unobtrusive sources of information included archival records from various databases housed within the Internet-based mapping software system and artifacts such as maps housed within the software system. Using multiple sources of data and triangulation improved the internal and construct validity of the study.

I employed strategies to improve the internal and construct validity of the data from which the findings were determined. To ensure the quality of the data used to formulate the findings, I sent focus group and one-on-one interview participants a copy of the verbatim transcript. In addition to the verbatim transcript, focus group participants were sent a document in which the researcher summarized key concepts presented by the participants and a summary of key concepts presented by each individual. A slightly different strategy was utilized with one-on-one interview participants. At the end of the

one-on-one interview, I summarized key points presented by the participants so that they might verify the accuracy during the interview, and the participants were given a final opportunity to discuss any pertinent perceptions not addressed during the interview. Each interview participant received a mailing that included the verbatim transcript and verification form to sign and return to the researcher in the stamped return envelop. Providing participants with an opportunity to review the transcript and the accuracy of my summaries was used to protect the quality of the data. Participants were afforded follow-up interviews to clarify any discrepancies between my summaries and participant's perceptions; however, participants did not deem that follow-up interviews were necessary.

A final method used to improve internal and construct validity included the utilization of a member-checking strategy. Participants from each of the four cases were mailed study findings for their respective case. In addition to a document of the findings, the mailing included a verification form that participants signed and returned in the stamped return envelop. Returning the signed verification form to me signified that the participants believed that the findings of the study were plausible. Follow-up options were provided if participants noted inaccuracies; however, participants did not deem that a follow-up was necessary.

Inductive analysis procedures utilized to develop the complex coding system required rigorous pattern matching with-in cases and cross-cases (see Data C4, Data C5, Data C6 in Appendix C). Pattern matching procedures were also utilized to formulate

findings. Pattern matching is a strategy that improves internal validity of the study (Creswell, 1998, 2003; Merriam, 1998; Yin, 2003).

Prolonged engagement in the field also improves internal validity. I spent 4 years in the field participating in the implementation process of curriculum mapping within Wards Mill School District #4. Prolonged engagement in the field, triangulation of multiple sources of data, member-checking, pattern matching, and establishing an audit trail improve the congruency of the finding with the implementation reality within Wards Mill School District #4.

Methods used to improve the external validity of the study included explaining my role, minimizing my biases, and developing strict data collection and data analysis protocols to conduct the study. Additionally, I provided rich, thick descriptions of the context of the study. The information I provided should be sufficient for readers to determine the applicability of the study to their own unique context.

Creswell (1998) contends that a qualitative researcher should employ a minimum of two different strategies to improve the quality of their study. I exceeded Creswell's (1998) recommendation. Methods used as evidence of the quality for this study included rich descriptions, member-checking, pattern matching, triangulation using multiple sources of data encompassing five school years, prolonged engagement in the field, a chain of evidence provided in the audit trail, and a clear description of my assumptions, biases, and role.

## **Conclusion**

Data used to derive findings for this study were based on information collected from interviews with 30 participants representing four cases. A case was defined as a group of five to nine participants. Three of the cases included teachers representing three instructional levels which included the elementary, junior high, and high school. The administrative case included principals from each instructional level and unit office administrators. Unobtrusive data from five school years was used to triangulate information provided during the interviews. Data were collected to explore how the implementation of the Jacobs model of curriculum mapping impacted teachers and administrators perceptions of leadership roles and responsibilities. The findings suggested that implementation of the Jacobs model of curriculum mapping encompass proactive and active leadership roles and responsibilities. The findings of the study also suggested a cause and effect relationship between leadership during the implementation process and teachers perceptions of mapping and its sustainability.

Section 5 presents an interpretation of the findings which address the research questions and relate these findings to the conceptual framework based on change theories. Section 5 also includes a discussion of social change implications and recommendations for action and further study. Section 5 will conclude with a reflection of my experiences, the impact of the study, personal biases, and how I might have impacted the participants.

## Section 5: Discussion, Conclusions, and Recommendations

### Overview

At the time this study was undertaken, states were under pressure to ensure that students met the Adequate Yearly Progress (AYP) targets associated with the *No Child Left Behind Act of 2001*. Wards Mill School District #4 was in the process of implementing the Jacobs model of curriculum mapping in an attempt to better align curriculum with the state standards used to monitor AYP. The curriculum mapping initiative commenced at the high school level as a possible solution for addressing curricular discrepancies identified by the high school principal and became a unit office mandate for the remaining instructional levels within the district.

The realization of potential benefits from the mapping process and the institutionalization of the Jacobs model of curriculum mapping are contingent upon leadership during the implementation process. I theorized that mapping was initiated without adequate administrative knowledge of mapping and the magnitude of change represented by this initiative and, as a result, mapping met with mixed levels of support. As a result of my leadership responsibilities during the implementation process, I decided to design a study to explore how the implementation of the Jacobs model of curriculum mapping within Wards Mill School District #4 impacted teachers' and administrators' perceptions of leadership roles and responsibilities. I also sought to explore how leadership during the implementation process impacted teachers' perceptions of the sustainability of mapping within the district.

Exploring the perceptions of teachers representing three instructional levels and the administrative unit within the district necessitated the use of a multiple case study design to explore administrator and teacher perceptions within the four cases. A case, or unit of analysis, was defined as a specific instructional level such as elementary, middle school, or high school in addition to one administrative case representing principals from each of the instructional levels and unit office administrators. Each instructional level included a group of five to nine teachers. Data were collected from focus group and one-on-one interviews with 25 teachers and one-on-one interviews with five administrators. Unobtrusive data were collected from documents such as curriculum mapping reports, professional development records, and communiqués. Unobtrusive data were also collected from artifacts such as maps housed within the Internet-based software system. Unobtrusive data spanned five school years and was used to triangulate interview data.

The interviews were inductively analyzed and resulted in three frames of analysis relating to attributes of leadership resulting in buy-in, attributes of leadership resulting in resistance, and cause and effect relationships of initiative factors resulting in buy-in. Constant pattern matching among data presented in the interviews resulted in a complex coding system, based on concepts presented by participants, the conceptual framework, and the researcher. Emergent patterns, themes, and relationships were based on a line-by-line analysis of the interview data. A single case analysis of data resulted in case specific findings that addressed the research questions. Each single case analysis was followed by a cross-case analysis of emergent patterns, themes, and relationships. The analysis of the cross-case data resulted in findings that addressed the following research

questions: (a) *How does the implementation of the Jacobs model of curriculum mapping impact administrators' perceptions of leadership roles and responsibilities?* (b) *How does the implementation of the Jacobs model of curriculum mapping impact teachers' perceptions of leadership roles and responsibilities?* and (c) *How does leadership during implementation of the Jacobs model of curriculum mapping impact teacher's perceptions as to the sustainability of this initiative?*

One of the findings of this study suggests that leadership for promoting buy-in to curriculum mapping necessitates that administrators assume proactive and active leadership roles and responsibilities during the implementation process. Proactive leadership represents the leadership roles and responsibilities administrators should expect to assume in preparation for commencing a curriculum mapping initiative. Active leadership encompasses roles and responsibilities administrators should expect to assume during the implementation process.

This study found that an essential component of the proactive leadership includes establishing a leadership team composed of teachers and administrator and engaging the leadership team in a prologue. The prologue is a period of time in which the leadership team collaborates to gain knowledge and experience in the mapping process, identifies and addresses potential problems, and develops a shared vision of potential benefits of mapping. The intended result of the prologue is the establishment of site-based and district-wide leadership teams capable of responding to stakeholder needs while promoting a unified mapping message during the implementation process.

Another finding of this study suggests a cause and effect relationship between leadership during the implementation process and teachers' perceptions of the sustainability of curriculum mapping. Perceptions of sustainability were impacted by the level of administrative support and commitment for mapping that was demonstrated by the principal's words and actions, perceived benefits from the mapping process, and usage of mapping information. As the perceived level of administrative support and commitment of mapping decreased, teachers' perceptions of sustainability also decreased. This finding underscores the importance of assuming active leadership roles during the implementation process. Active leadership during implementation includes promoting an understanding of the benefits and purposes of mapping, providing on-going resources and support, explicitly connecting mapping with school improvement plans, and promoting collaboration among stakeholders focused on a common goal.

Another significant finding from this study is that perceptions of organizational change barriers impact sustainability. Organizational change barriers within Wards Mill School District #4 included historical implementation trends and negative culture issues. Data analysis suggested a cause and effect relationship between perceptions of mapping and the type of relationship among stakeholders within the district. This finding underscores the importance of identifying and addressing organizational barriers as a component of proactive leadership. The findings also emphasize the importance of building positive relationships as a component of active leadership.

### Interpretation of Findings

The interpretation of findings for this study were based on the relationship of these findings to the conceptual framework of this study and to the major themes found in the literature review. Major constructs in the conceptual framework and themes found in the literature suggest that large-scale reform initiatives represent a second order change and therefore necessitate that change agents assume different roles and responsibilities than those required for leading a first order change. Change initiatives that deviate from traditional norms within a school district necessitates that change agents develop an understanding of the *moral purpose* propelling the need for change and foster a *shared vision* that compels stakeholders to change. (Marzano, 2003; Fullan, 2004, Senge, 2006)

The initial phase of change results in a sense of confusion, inadequacy, and frustration because stakeholders are required to step out of their comfort zones to apply new skills. Therefore, second-order change necessitates that change agents have a *comprehensive knowledge* of the change initiative so that they are able to appropriately support stakeholders with sufficient *resources* and incentives required to develop *personal mastery* of new skills while providing bridges between past and new practices. Change required to meet 21<sup>st</sup> century demands necessitates stepping out of traditional *mental models* of leadership and teaching and necessitates that change agents identify and address conflicting elements that might undermine change efforts while working to *build positive relationships* among stakeholders. Large-scale change necessitates collectively formulating *implementation plans* and using *systems thinking* to monitor and address issues that might inhibit sustainability of reform efforts (Chenoweth & Everhart, 2002;

Donaldson, 2006; Evans, 1996; Fullan, 2001, 2004, 2005; Hargreaves & Fink, 2006; Jellison, 2006; Knoster, Villa, & Thousand, 2000; Marzano, 2003; Marzano, Waters, & McNulty, 2005; Schlechty, 1990; Senge, 2006).

Studies have been conducted that indicate the perceived curricular benefits of mapping and provide evidence of improved student achievement as a result of the mapping process (Fairris, 2008; Huffman, 2002; Lucas, 2006; Shanks, 2003; Wilansky, 2006). Beans (2006) compared how two high schools implemented curriculum mapping and presented an explanation as to how leadership impacted the process. Although there are studies that explore leadership during comprehensive school reforms, these studies are not specific to leadership imperatives for implementing the Jacobs model of curriculum mapping. I sought to explore how the implementation of the Jacobs model of curriculum mapping impacted teachers and administrators' perceptions of leadership roles and responsibilities. I also sought to explore how leadership during the implementation process impacts teacher perceptions of sustainability of a curriculum mapping initiative. Therefore, the results of this study will address gaps in the literature relating to leadership imperatives for implementing the Jacobs model of curriculum mapping.

The Jacobs model of curriculum mapping is a large-scale, systemic change model. Unfortunately, large-scale change initiatives often failed to become institutionalized because mental models within the school culture are not conducive with components in the reform initiative (Evans, 1996; Fullan, 2001; Marzano, Waters, & McNulty, 2005; Senge, 2006). Leadership for transforming cultures departs from traditional norms. Second order change necessitates that leaders have comprehensive knowledge of the

initiative in order to foster a shared vision and rationale as to why change is required and how it will benefit stakeholders. Comprehensive knowledge of the initiative and the change process is required so that leaders can appropriately support, encourage, and provide resources for stakeholders to develop personal mastery of new skills and knowledge required within the reform initiative. Traditional managerial leadership based on top-down directives can inhibit rather than foster a climate conducive to second-order change (Evans, 1996; Jellison, 2006; Lambert, 2003; Leithwood, 2002; Marzano, 2005; Senge, 2006).

The Jacobs model of curriculum mapping is divergent from traditional mental models of the roles and responsibilities of administrators and teachers because it is designed to be a systemic change initiative that encourages teachers to become the curriculum designers and curriculum leaders within a district. The model is designed to build teacher leadership capacity by engaging teachers in site-based and district-wide leadership teams. The model is designed to encourage the development of professional learning communities in which teachers and administrators collaborate to make data informed decisions about curriculum and professional development opportunities (Hale, 2008; Holt, 2004; Jacobs, 1997; Johnson & Johnson, 2004; O'Neil, 2004; Truesdale, Thompson, & Lucas, 2004; Udelhofen, 2005).

I assumed that the design of the Jacobs model of curriculum mapping could provide a framework for positive social change within the district that might result in fostering the development of professional learning communities that collaboratively addressed curricular issues. However, my theory was that mapping was initiated without

adequate administrative knowledge of mapping and the magnitude of change represented within the model. The theoretical proposition for this study was that the traditional mental models would inhibit initiative buy-in and threaten sustainability of curriculum mapping within Wards Mill School District #4.

I found that mapping was initiated without sufficient administrative knowledge in mapping and the mapping process. Instead of acting as a change agent, most of the administrators assumed traditional managerial roles of providing consultants to train teachers and scheduling substitutes for teachers while teachers attended professional development sessions. I also found that administrators did not collaborate to develop systemic implementation plans; instead, administrators within the three instructional levels acted as autonomous agents in compliance with unit office mandates. As a result, implementation plans lacked district-wide continuity, clarity of goals, and a shared vision for mapping. These findings suggest that administrators within Wards Mill School District #4 misunderstood the magnitude of change represented by the Jacobs model of curriculum mapping and did not assume the leadership roles associated with that of a change agent (Fullan, 2004; Marzano, 2003; Senge, 2006; Walker, 2002)

As a result of implementing the Jacobs model of curriculum mapping, teachers and administrators concurred that proactive leadership roles and responsibilities included (a) developing administrative knowledge in curriculum mapping and related processes, (b) identifying potential organizational change and resource barriers and developing a plan to address these issues, and (c) formulating cohesive site-based and district-wide attainable and long-term, systemic implementation plans. Administrators acknowledged

the importance of collaboration among principals and the unit office to develop district-wide implementation plans. However, they ignored a key leadership component of the Jacobs model of curriculum mapping. The Jacobs model necessitates that administrators build leadership capacity among teachers so that teachers become curriculum leaders (Hale, 2008; Jacob, 1997; Johnsons & Lucas, 2008; Truesdale, Thompson, & Lucas, 2004). Although the unit office directed me to meet with principals to determine and submit a list of potential teacher leaders, unit office administrators mandated that teachers were not to be engaged in leadership teams outlined in the Jacobs model. I was not provided with a rationale for the administrative decision to not engage teachers in leadership teams.

Barth (2002) noted that administrators' resistance to building teacher leadership might be symptomatic of traditional mental models in which administrators lead and teachers teach. However, living in the 21<sup>st</sup> century knowledge society necessitates that administrators assume the role of learning-leaders and foster a collegial climate in which they build leadership capacity that includes the engagement of teachers in the learning-leading process (Barth, 2002; Crowther, Kaagan, Ferguson, & Hann, 2002; Reeves, 2006; Schlechty, 1990). Participants in the three teacher cases perceived that proactive and active leadership included collaboration among teachers and administrators and the engagement of teacher leadership during the implementation process. However, data analysis from this study suggested that the culture within the district inhibited rather than fostered the development of teachers as curriculum leaders.

Evidence suggests that organizational barriers such as fear-based cultural issues negatively impacted teacher perceptions of curriculum mapping. Unit office mandates prohibiting deviation from the adopted reading textbook series compounded the confusion of elementary teachers about the purpose of mapping and resulted in fears that maps would be used by administrators to police usage of the series. The perception that punitive actions might result if administrators observed deviations from the textbook series raised doubts that the maps were valid. The validity and usefulness of the maps were questioned because participants in the teacher cases suggested that some of the maps might contain what the writer thought administrators might want to read rather than reflect actual classroom practices and student expectations. Fears of possible retribution and non-usage of maps that had been developed lead to teacher perceptions that mapping was unnecessary busy work. According to Pfeffer and Sutton (2000), a climate of fear and distrust is counterproductive for innovation and reform. Large-scale reform necessitates a culture in which trusting relationships are the norm, there is commitment to a shared purpose, and collective learning and planning are encouraged (Donaldson, 2006; Fleming & Thompson, 2004; Serviovanni, 2005).

In the research literature, Marzano (2003) noted that discrepancies between the intended and implemented curriculum are problematic factors impeding student achievement. The Jacobs model of curriculum mapping is designed to foster the development of professional learning communities in which teachers and administrators collaborate to identify and address curricular gaps and redundancies. Data informed decisions are based on information housed within the collaboratively developed Master

Maps representing the intended curriculum and the individually developed Diary Maps representing the implemented curriculum. Maps are developed to ensure horizontal and vertical alignment of curriculum and alignment of the curriculum with standards used to monitor Adequate Yearly Progress (Hale, 2008; Jacobs, 1997; Udelhofen, 2005).

I assumed the mapping process would result in a raised awareness of the standards, promote alignment of curriculum with standards, and foster the development of collegial relationships. This study provided evidence that teachers in each of the three instructional levels did perceive benefits from the mapping process, including a raised awareness in standards, alignment of curriculum, and collegial curricular dialogue. The perceived benefits of mapping within Wards Mill School District #4 correspond to similar findings from other studies (Huffman, 2002; Lucas, 2006). However, the lack of consistent district-wide planning resulted in discrepancies in the type of maps which were generated. Only the high school teachers developed Master Maps while elementary and junior high school teachers generated Diary Maps. Although participants from the junior high and elementary school cases perceived personal benefits from developing Diary Maps, it was difficult to understand how this type of map could be used to identify horizontal and vertical gaps and redundancies in the curriculum. Therefore, participants from the elementary and junior high cases indicated that they would have preferred to work collaboratively to develop Master Maps instead of individual Diary Maps.

Administrators acknowledged having a limited understanding of the connectivity between maps and school improvement efforts. The non-usage of mapping information, inadequate on-going resources, and short-term commitment for mapping implies that

administrators did not understand how mapping can be a vital mechanism for determining discrepancies between the intended and implemented curriculum. Instead the implied perception suggests that mapping was viewed as an end product. Master Maps in essence became a reformatted curriculum guide. Maps developed in the Jacobs model of curriculum mapping are designed to represent the intended curriculum (Master Maps) and the implemented curriculum (Diary Maps) and are to be used and address curricular discrepancies that might impede student learning (Hale, 2008; Jacobs, 1997; Udelhofen, 2005). The 7-step review process espoused by Jacobs is intended to provide a guideline for utilizing mapping information to identify gaps and redundancies (Hale, 2008; Jacobs, 2004). Non-usage of the maps to make school improvement connections implies insufficient leadership knowledge of the review processes within the Jacobs model and underscores the importance of developing this knowledge as a leadership imperative.

The implementation of the Jacobs model of curriculum mapping impacted perceptions of active leadership roles and responsibilities. As a result of challenges presented during the implementation process, participants perceived that active leadership roles and responsibilities included promoting a clear and consistent understanding of the purpose and benefits of mapping. Additionally, leaders needed to formulate and communicate systemic plans that provided connectivity between site-based and district-wide goals and explicitly connected use of mapping information with school and district improvement plans. Administrators needed to building teacher leadership capacity and provide on-site support teams in addition to being knowledgeable enough to assuming the role of coach and encourager. Active leadership roles also included providing adequate

and on-going resources and incentives. The leadership imperatives identified by participants in this study correspond with those espoused by change theorist and mapping proponents (Fullan, 2005; Hale, 2008; Jacobs, 1997; Knoster, Villa, & Thousand, 2000; Senge, 2006; Sergiovanni, 2005).

The findings of this study also suggested a cause and effect relationship between leadership during the implementation process and teachers' perceptions of curriculum mapping and the sustainability of this initiative. As the level of perceived administrative support for mapping decreased, teachers' positive perceptions of mapping and its sustainability decreased. This study also found that the type of relationship between administrators and teachers impacts perceptions of mapping and its sustainability. As perceived relationships between administrators and teachers became more negative, teacher perceptions of mapping and its sustainability also became more negative. Although the purpose of the study conducted by Beans (2006) was not to determine the impact of leadership during the implementation process, her study also suggests a causal relationship between leadership during the implementation process and sustainability of a curriculum mapping initiative.

As a result of the impact of perceived relationships during the implementation process, another active leadership component included building positive relationships and promoting horizontal and vertical collaboration among teachers, administrators, and attendance centers. Establishing and fostering collegial, collaborative relationships are cornerstone components within the Jacobs model of curriculum mapping (Hale, 2008; Jacobs, 1997). Therefore, a key change agent imperative includes building positive

relationship and developing a sense of collective responsibilities toward implementing a change initiative (Donaldson, 2006; Evans, 1996; Fullan, 1993; Fleming & Thompson, 2004). Negative cultures impede the change process; therefore, this impediment underscores the importance of identifying and addressing organizational change barriers as a proactive and active leadership imperative (Barth, 2006; Evans, 1996; Fleming & Thompson, 2004). Thus, the findings of this study address gaps in the literature relating to the Jacobs model of curriculum mapping and to leadership imperatives needed during the implementation process as well as providing insights about leadership for those administrators who are considering a curriculum mapping initiative within their district.

### **Implications for Social Change**

An implication for social change in education in relation to this study is that traditional top-down leadership and resistance to building teacher leadership as stipulated in the Jacobs model may impede buy-in and threaten sustainability of the curriculum mapping initiative. Study findings indicate that buy-in is a result of providing stakeholders with a sense of ownership in the implementation process, fostering an understanding of the purpose for mapping and potential benefits to be derived from the mapping process, and demonstrating administrative support and commitment of mapping. There is evidence that leadership at the high school level resulted in more positive perceptions of the sustainability of mapping than at the other instructional levels. Leadership at the high school level included fostering a shared vision and purpose for mapping. As a result of the non-traditional leadership from the high school principal, there is evidence of tangible improvements in relation to meeting the district goals of

raised awareness about the standards and alignment of the curriculum to those standards. There is also tangible evidence that the collaborative processes required to develop Master Maps and to align curriculum promoted positive social change in education by creating a climate more conducive to the development of professional learning communities.

Implications for social change were also evident in other aspects of this study. For example, there is additional tangible evidence at the elementary and junior high school levels that the mapping process raised awareness in standards and curricular alignment and increased teacher reflectivity in relation to the alignment of classroom expectations with the standards. Teachers at these instructional levels indicated a desire to collaborate with colleagues and an increased awareness in the importance of horizontal and vertical articulation and collaboration. Teachers at all levels indicated a raised awareness for building teacher leadership and engaging teachers in the role of curriculum designers and curricular leaders. The movement away from traditional mental models of teacher isolation towards a raised awareness of collaboration is an example of positive social change. However, this movement toward positive social change has been hampered by a return to autonomous practices among district administrators, limited opportunities for teacher collaboration, and non-usage of mapping information. Just as there are mixed perceptions of mapping, there is mixed evidence of positive social change within the district in relation to the type of leadership provided during the mapping process.

The Jacobs model of curriculum mapping provides a framework for positive social change; however, the findings suggest that the implementation process may pose several leadership challenges. The findings provide information concerning leadership implications for promoting buy-in of curriculum mapping and sustainability of the initiative. Although constructs within the Jacobs model of curriculum mapping can promote positive social change, the findings of this study suggest a cause and effect relationship between perceptions of mapping and its sustainability and leadership during the implementation process. My study suggests that positive social change leadership for a curriculum mapping initiative requires administrators to assume both proactive and active leadership roles and responsibilities. A curriculum mapping initiative that results in positive social change requires the receptivity of educational leaders in identifying and addressing traditional mental models and organizational barriers that are discordant with components in the Jacobs model of curriculum mapping.

### **Recommendations for Action**

Several recommendations for action at the local level need to be considered in relation to the findings of this study. For example, leadership implications for administrators within Wards Mill School District #4 and possibly for other school districts are related to the importance of identifying and addressing organizational barriers in connection to the implementation of any new initiative related to curriculum, instruction, and assessment. For this particular school district, perceptions of historic implementation trends within the district suggested a tendency to provide short-term commitment and support for initiatives. An additional organizational barrier identified in

this study related to perceived negative relationships that existed within the district. Participants from those instructional levels that discouraged and ignored teacher input had negative perceptions of administrators and mapping. In contrast, high school participants described a positive relationship with the principal because he encouraged teacher input and collaboration and acknowledged their efforts in obtaining site-based mapping goals. The findings of this study may provide insights for other districts contemplating a curriculum mapping initiative in relation to potential organizational barriers that might need to be identified and addressed prior to commencing the initiative and barriers which might arise during the implementation process.

Another recommendation for action relates to the need to improve the implementation process of any new initiative through collaborative planning. For example, in order to improve perceptions of mapping and its sustainability, administrators within Wards Mill School District #4 need to improve their knowledge of mapping and the mapping process through collaborative and collegial participation in professional development opportunities instead of isolated learning. An improved collective knowledge about mapping and the process of mapping should be used to formulate a shared vision and purpose for mapping and to develop systemic implementation plans that provide connectivity between mapping information and site-base as well as district-based school improvement plans. Administrators within this district need to provide teachers with a sense of ownership in the mapping process by providing them with opportunities for input and building leadership capacity as stipulated in the Jacobs model for curriculum mapping. Unless administrators can address

traditional mental models and organizational barriers that impede successful educational reform, mapping will become another educational district fad. Upon completion of the doctoral process, I will schedule an appointment with administrators to share the findings of this study. Administrators might use these study results to formulate a plan of action to improve perceptions of mapping and its sustainability within Wards Mills School District #4. The study results may provide insights to administrators in other districts who may be struggling with implementation of a new initiative.

Another recommendation for action is that administrators who are contemplating implementing the Jacobs model of curriculum mapping in the near future should pay attention to the results of this study. National curriculum mapping leaders should also pay attention to the results of this study because the results of this study may provide insights into challenges that might arise as a result of implementing the Jacobs model of curriculum mapping. This study also may provide insights into proactive and active leadership imperatives that minimize challenges and promote more positive perceptions of mapping and its sustainability. Furthermore, the results of my study may provide insights into mapping benefits that are useful for developing a shared vision and purpose for mapping as well as the positive social change elements that might result from implementing the Jacobs model of curriculum mapping.

As a result of my personal efforts to improve my understanding of the Jacobs model of curriculum mapping, I developed a network of renowned curriculum mapping experts. I intend to share the results of this study with these experts so that they can disseminate the findings of this study. I will also disseminate the results of this study

during presentations at curriculum mapping conferences or communicated in scholarly journal articles.

### **Recommendations for Further Study**

The review of the literature for this study discovered studies pertaining to perceived benefits of mapping and the impact of mapping on student achievement. However, the literature presented only one study that compared the implementation process of curriculum mapping within two high schools. The literature did not present studies concerning perceptions of leadership imperatives for implementing the Jacobs model of curriculum mapping. Therefore, my study addressed gaps in the literature related to leadership imperatives for implementing the Jacobs model of curriculum mapping. My study describes perceptions from the viewpoint of stakeholders in a district in which the implementation process posed numerous challenges and the sustainability of mapping was dubious. Further studies might include exploring leadership imperatives from the perspectives of stakeholders in a district in which mapping has been successfully institutionalized and plays a vital role in formulating school and district improvement plans. Comparative study results might stimulate additional questions concerning leadership imperatives for implementing the Jacobs model of curriculum mapping. Furthermore, a study that explores leadership style in districts successfully institutionalizing a mapping initiative as well as those in which mapping has failed to be institutionalized might provide insights into leadership characteristics required for sustainability and those non-conducive to change. Understanding leadership imperatives and the impact of leadership style during the implementation process broadens the

knowledge of leadership requirements to successfully implement and sustain a mapping initiative.

My study suggests that the mental models within a district impacts perceptions of mapping and its sustainability. Therefore, additional topics for further study might include exploring the mental models within districts that have successfully institutionalized mapping and the impact of the Jacobs model on the culture of the school. Exploring school cultures conducive to the Jacobs model might provide insights and stimulate additional questions into the mental models required for sustainability as well as how the Jacobs framework for change impacts mental models in relationship to 21<sup>st</sup> century demands for education. Successful educational reform to meet 21<sup>st</sup> century demands necessitates understanding barriers to change and leadership that results in positive social change.

### **Reflection on Researcher's Experience**

I observed and experienced the impact resulting from a lack of administrative knowledge, vision, and collaborative systemic planning on implementing a curriculum mapping initiative. I was an employee of Wards Mill School District #4 for 33 years. During that time, I experienced leadership from three superintendents, four assistant superintendents, and nine principals. I was an employee under transformative leadership that encouraged innovation and valued thinking outside the box and transactional leadership that discouraged creativity and encouraged conformity. Therefore, I assumed that leadership during the implementation process would impact the receptivity and sustainability of curriculum mapping. My knowledge of constructs within the Jacobs

model of curriculum mapping and of leadership within the district raised doubts about the sustainability of this initiative within Wards Mill School District #4. However, my teaching experiences raised my awareness about the necessity for establishing a district-wide framework for identifying and addressing curricular gaps.

I spent 20 years as a self-contained classroom teacher, seven years as an itinerant gifted instructor providing services for students in six of the seven attendance centers, four years co-teaching K-5 grade students in one attendance center, and two years co-teaching science at the junior high. For 13 years, I served as a curriculum designer developing curriculum based on the state and district standards in relation to school improvement planning. In addition, I worked as a curriculum leader modeling and teaching differentiated strategies that were incorporated into unit development. I am cognizant of the fact that my career has been rather unique based on district norms. However, co-teaching multiple grades and content areas in addition to serving as an itinerant staff member raised the my awareness of unintentional curricular gaps and redundancies occurring within the district. As a result of my role during the mapping process, I had the opportunity to work with most of the K-12 teachers within the district. Working with K-12 teachers additionally raised my awareness of unintentional curricular discrepancies and increased my support of the Jacobs model of curriculum mapping.

The Jacobs model of curriculum mapping provided a systemic framework for identifying and addressing discrepancies in the intended and implemented curriculum as well as a mechanism for building a collegial and collaborative culture focused on improving the consistency and scaffolding of student content and skill expectations. I

believed that the Jacobs model of curriculum mapping could help address some of the discrepancies I had observed. Although I knew the mapping initiative would pose several challenges, I believed that administrators were sincere in their support and commitment of this initiative.

I was honored to be given a leadership role in the process. Unfortunately, I soon realized that mapping had been initiated without sufficient administrative knowledge of the initiative. I also understood the magnitude of change mapping represented and that there were no implementation plans other than for teachers to develop the maps. I was expected to provide training and support because the administrators were not capable of assuming these roles and responsibilities. I was dismayed and overwhelmed by the confusion, frustration, and hostility that teachers projected towards the national consultant. However, the emotions displayed by the teachers were understandable, due to the extra work imposed on teachers as a result of false starts and the extra pressures to generate maps with inadequate resource provisions and the lack of on-site support. It became evident that teachers were mandated to develop maps without a clear understanding of the purpose and potential benefits of mapping.

Hostility and resistance are typical reactions during the early phases of a change process because stakeholders are often asked to abandon familiar past practices and to assume responsibilities requiring new knowledge and skills. During the early phases of change, stress levels increase and fears of failure abound until personal mastery of new skills are acquired and benefits from the change initiative are perceived (Evans, 1996; Fullan, 1993, 2001; Jellison, 2006, Senge, 2006). Prior to assuming the role of

curriculum mapping coordinator, I spent a year researching mapping and developing various types of maps; therefore, I was aware of the frustrations and fears teachers might experience. Researching the change process made it easier for me to understand that teacher hostility was not a personal attack on me; instead it was a projection of their personal fears, frustrations, and feelings of inadequacy all of which are natural components of the change process.

Traditionally, teachers work in isolation, are considered instructional leaders within their classrooms, and assume students are being presented with similar learning experiences because they use textbook series that have been adopted district-wide. As a result my experiences while serving as the mapping coordinator, I observed that many teachers and administrators within the district assumed that textbook companies scaffold student learning and align curriculum with state standards; therefore, it was difficult for them to understand the purpose of mapping. However, I also observed how the mapping process and engagement in team learning experiences focused on raising awareness in standards and curricular alignment expanded teachers' perspectives beyond the traditional norms and began to foster the development of a learning community.

### **Conclusion**

Although the Jacobs model does provide a framework for positive social change and is conducive to the type of educational change for addressing 21<sup>st</sup> century demands, leadership required for successful implementation of the Jacobs model is not congruent with traditional leadership structures. Traditional leadership in education is often based on top-down directives and managerial roles and responsibilities. In traditional

educational cultures, teachers frequently work in isolation and serve as repositories of knowledge and schools function as autonomous units. However, the Jacobs model necessitates building leadership capacity and fostering a culture of horizontal and vertical collaboration among teachers and administrators. In essence, the Jacobs model challenges traditional mental models which are resistant to change and potentially impede buy-in and sustainability of curriculum mapping. Successful school reform necessitates individual teacher and administrator reflection as well as district reflection into discordant elements inhibiting change and then addressing these elements so that more harmonious condition exists for change.

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## Appendix A: Forms

### Consent Form, Protocol, Contact Letter, Summary and Verification Form

#### Form A1 Interview Consent Form

You are invited to take part in a research interview of the implementation of curriculum mapping. You were chosen for the interview because you have two years of experience with the implementation of curriculum mapping within Wards Mill School District #4 (pseudonym). Please read this form and ask any questions you have before agreeing to be part of the interview.

This interview is being conducted by a researcher named Valerie Lyle, who is a doctoral student at Walden University. Valerie Lyle is also assigned as a Junior High School Science Resource Teacher and Curriculum Developer in Wards Mill School District #4.

#### **Background Information:**

The purpose of this interview is to examine perceptions of our curriculum mapping initiative and the challenges posed by this initiative. The findings from this study might provide beneficial information to modify implementation plans. Furthermore, interest in curriculum mapping is expanding both nationally and internationally. Therefore, the findings of this study might provide insights to benefit other districts during their implementation process.

#### **Procedures:**

If you agree, you will be asked to participate in an audio-recorded interview, lasting 50 - 60 minutes (if focus group participant) or 30 – 40 minutes (one-on-one participant).

#### **Voluntary Nature of the Interview:**

Your participation in this interview is voluntary. This means that everyone will respect your decision of whether or not you want to be in the interview. No one at Wards Mill School District #4 will treat you differently if you decide not to be in the interview. If you decide to join the interview now, you can still change your mind later. If you feel stressed during the interview, you may stop at any time. You may skip any questions that you feel are too personal.

#### **Risks and Benefits of Being in the Interview:**

There is the minimal risk of psychological stress during this interview. If you feel stressed during the interview, you may stop at any time. There are no benefits to you from participating in this interview other than the knowledge that the perceptions you provide might be beneficial to our district and might help other districts during their implementation process.

#### **Compensation:**

There is a small compensation to thank you for participating in this interview.

**Confidentiality:**

Any information you provide will be kept confidential. A pseudonym and coded information will be used to protect your identity. The researcher will not share special interview information with anyone in the district.

**Contacts and Questions:**

The researcher's name is Valerie Lyle. The researcher's doctoral chair is Dr. Anthony Chan. You may ask any questions you have now. Or if you have questions later, you may contact the researcher via (618) 993-3692 or [vlyle@msn.com](mailto:vlyle@msn.com) or the instructor at 647-343-9178 or [anthony.chan@waldenu.edu](mailto:anthony.chan@waldenu.edu). If you want to talk privately about your rights as a participant, you can call Dr. Leilani Endicott. She is the Director of the Research Center at Walden University. Her phone number is 1-800-925-3368, extension 1210.

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

**Statement of Consent:**

I have read the above information. I have received answers to any questions I have at this time. I am 18 years of age or older, and I consent to participate in the interview.

Printed Name of

Participant

Participant's Written or

Electronic\* Signature

Researcher's Written or

Electronic\* Signature

Electronic signatures are regulated by the Uniform Electronic Transactions Act.

Legally, an "electronic signature" can be the person's typed name, their email address, or any other identifying marker. An electronic signature is just as valid as a written signature as long as both parties have agreed to conduct the transaction electronically.

## Form A2 Teacher's Interview Protocol

Interviewee: \_\_\_\_\_ Location: \_\_\_\_\_  
 Date: \_\_\_\_\_ Time: \_\_\_\_\_

*Review purpose of the study and consent form information. Ask if interviewee has any questions or concerns. (Collect consent form)*

**Introduction:** Thank you for being willing to share your insights concerning the implementation of our curriculum mapping initiative. I'd like to begin by having you tell me a little about yourself.

- How long have you been teaching? \_\_\_\_\_
- How much of your experience has been in Unit #2? \_\_\_\_\_
- What grade level do you teach? \_\_\_\_\_ Where do you teach? \_\_\_\_\_
- How many years of experience do you have with curriculum mapping? \_\_\_\_\_
- How many of these years are within this district? \_\_\_\_\_
- What content area have you been mapping? \_\_\_\_\_
- What type of map(s) have you developed? \_\_\_\_\_

Mailing Address \_\_\_\_\_

**Main Question/ Item:** What district/site-based initiative, past or present, have you bought into? What factors do you think influenced your decision?

- What ranking would you give a comparison between mapping and this initiative, if (1) meant

there are several similarities through to (5) meaning there are lots of differences. What ranking would you give it? Explain your reasons for this ranking and how it affects your perceptions of mapping.

- What do you think is the reason our district is mapping?

**Main Question/ Item:** What kinds of challenges have you experienced during the implementation phase of mapping?

- What has your principal done or said to help address the challenges you have experienced?

- How have your administrator's words and/or actions affected your perceptions of mapping?

**Main Question/ Item:** Three years from now, what do you perceive will happen to the curriculum mapping initiative? Explain the factors that are causing you to draw this conclusion.

**Main Question/ Item:** Suppose you could advise administrators in our district or in another district considering implementing mapping, - describe what you think administrators' leadership roles and/or responsibilities should be during the implementation phase in order for mapping to be sustainable?

## Form A3 Administrator's Contact Letter

Dear,

Thank you for being willing to consider participation in an interview for my doctoral study. It is my hope that insights gleaned from this study will benefit our district. Furthermore, interest in curriculum mapping is expanding both nationally and internationally; therefore insights from this study might be of benefit to others in their mapping journey. This study seeks to explore your perspectives as an administrator. The following is a listing of the main questions which will be asked during the interview. Additional follow-up questions might be asked based on your responses.

Main Question/ Item: Explain your involvement in implementing curriculum mapping.

Main Question/ Item: What leadership challenges has this initiative posed for you and what have you done to address these challenges?

- What factors do you think contribute to these challenges?

Main Question/ Item: How does curriculum mapping compare with other district initiatives you have had to lead?

- What is the reason our district is mapping?

Main Question/ Item: Based on your experience with mapping, what type of roles and responsibilities would you advise other administrators to expect to assume during implementation of mapping?

- Reflecting on what you have learned about implementing curriculum mapping, what would you do differently that you think would have made this process go more smoothly?

Respectfully,

Valerie Lyle

## Form A4 High School Focus Group Summary for Verification

Two out of four interviewees thought the district would still be mapping three years from now; however, the remaining two were not sure. Administrative commitment and mandate for mapping were provided as a rationale for continuation of mapping. Furthermore, it was expressed that work toward mapping is incomplete and that it is an on-going process. However, the lack of accountability and resources (e.g. time, training) in addition to the impressions that mapping was a low priority and maps are cumbersome to generate were provided as reasons for uncertainty as to if mapping would be sustainable.

### **General Concepts:**

**Benefits:** Interviewees indicated that mapping was a useful personal tool for aligning curriculum to standards as well as for identifying curricular gaps and redundancies. However, interviewees do not think maps are being effectively used to address the original purpose of identifying gaps and redundancies among grade levels.

**Usage of Maps:** The primary focus has been on map development rather than usage of the maps. Most interviewees related that maps have not been used collaboratively among colleagues. However, the principal has used maps as a communication tool to relate curricular content to prospective parents. It was also related that maps, if accurate, can be a Godsend for new teachers and provide pacing and content guidance.

**Format:** Although interviewees related personal benefits from mapping, issues were raised about frustrations associated with too much of a focus on formatting (e.g. bullets, articles, numbers, etc.) rather than content of the maps. Interviewees related that some teachers found construction of the map to be so overwhelming that they refused to map. Mapping training provided conflicting messages as to how maps should be constructed. Inconsistencies between mapping training resulted in teachers re-writing maps and lowering teacher morale.

**Teacher Input:** To their knowledge, teachers have not been engaged in the development of implementation plans for mapping.

### **Individual Summaries:**

**HS1:** Mapping has provided personal benefits in self-reflection that resulted in better organizing course offerings so that the necessary content is being covered and aligned with standards. Although formatting has been cumbersome, the interviewee can see benefits in having an organizational structure to the maps which promotes readability. However, time lapses between provisions of mapping time, insufficient time, and conflicting priorities have posed challenges. It appears as if there wasn't a clear implementation plan.

Form A5 Verification Form

**Focus Group Interview:** The researcher’s general summary of discussion concepts and my individual summary accurately represent the perceptions which were presented during the focus group interview.

**Individual Interview:** The researcher’s general summary, at the end of the interview, accurately represents the perceptions which were presented during the one-on-one interview.

**Study Findings:** The findings presented by the researcher represent a plausible discussion of participants’ perceptions of leadership roles and responsibilities for implementing the Jacobs’ model of curriculum mapping.

Signature \_\_\_\_\_ Date \_\_\_\_\_

The general summary somewhat accurately represents the perceptions which were presented during the interview. However, I have additional thoughts I would like to add or have modification recommendations:

Signature \_\_\_\_\_ Date \_\_\_\_\_

I would like to schedule a meeting to discuss concerns I have with the summaries or information in the transcript. Please contact me at \_\_\_\_\_ (phone number) or \_\_\_\_\_ (email address)

Signature \_\_\_\_\_ Date \_\_\_\_\_

## Appendix B Audit Trail

## Sample Research Log and Journal

## Audit Trail B1 Excerpt from Research Log

February 2009 Log: Record of Events		Journal: Reflective Thoughts	
Date	Activity	Product/ Results	Research Journal
Feb. 2	<p>Approached JH teacher about participating in focus group session, unable to connect with other teachers. Tentatively rescheduled interview session with principal. Sent email to confirm availability to main teacher to participate in focus group session.</p>	<p>Another JH teacher agrees to participate. A tentative date of Thursday, Feb. 12 at 4 p.m. was set. Received email from main teacher indicating tentative date is agreeable. JH principal tentatively rescheduled interview session during one of my prep periods on Thursday or Friday.</p>	<p>I am leery about asking teachers to participate – but I need to get over it. I was surprised this second teacher was willing to participate. She express some opinions concerning mapping – only negative and mostly indicated that time was a major barrier as well as the negative culture in the district – primarily a result of Unit Office administrators.</p>
Feb. 3	<p>Contacted a 3<sup>rd</sup> JH teacher (reassigned from HS) about the focus group.</p> <p>I checked out the cost and availability of a private conference room in a local restaurant for a possible</p>	<p>She indicated that she wouldn't be able to participate in the focus group session but indicated she would be glad to do a one-on-one interview. She suggested several HS teachers for me to contact as possible interviewees.</p> <p>A couple of tentative dates were scheduled to use conference room –</p>	<p>The 3<sup>rd</sup> JH teacher spoke of the negative culture in the district which might make it difficult to get teachers to talk to me – especially on tape. There is a lot of fear about retaliation from UO</p>

	<p>site for focus group sessions.</p> <p>Got an email from the 1<sup>st</sup> JH teacher confirming willingness to participate in the focus group session</p>	<p>contingent on whether I can get participants. A follow up call has been set for this Friday.</p>	<p>Administrators. However, she did suggest several teachers who might be willing. She also expressed negative attitudes toward mapping and doubted I would be able to find those with positive attitudes.</p> <p>I decided it might be wise to check out the availability of a private conference room at a local business for focus group sessions. Perhaps this would make teachers feel more comfortable about participating.</p>
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## Audit Trail B2 Excerpt from Research Journal

**February 10, 2009**

I've been reading back through the interview with Adm-1. I've also started highlighting key concepts. I think a lot of the confusion and frustration that I have seen among teachers relating to curriculum mapping is a result of the lack of knowledge and preparation of administrators. Adm-1 relates participation in a 1 ½ - 2 day workshop presented by software consultants with the purpose of providing an overview of mapping. I happen to have attended this same workshop and remember feeling confused and frustrated by the presenter. The purpose of the workshop seemed more to sell the software program rather than provide an understanding of mapping and how to construct maps. I remember Adm-1 was reading a book written by Jacobs. Ironically, this book (I read at a later date) emphasized the importance of advanced collaborative planning (about 1 year) of lead teachers and administrators – something that wasn't done within this district. I can not imagine that Adm-1 had a sufficient understanding to develop an effective Power Point presentation that would help teachers understand the purpose of mapping. I find it ironic that Adm-1 says teachers are fearful that mapping might be used as a component of their evaluation and yet discusses the importance of continuing Diary Mapping efforts during teacher evaluations – even to new teachers that have not received training. Although Adm-1 indicates that she wants Master Maps, Adm-1 keeps emphasizing the importance of developing Diary Maps. Adm-1 seems to think that encouraging teachers to develop Diary Maps will help teachers understand the benefits of mapping. Adm-1 doesn't seem to understand that merely telling teachers to do something will help them understand its benefits. Adm-1 hopes that teachers will understand the importance and significance of mapping “without coming out and saying it”. I think teachers need to have administrators explicitly help them understand mapping benefits and be knowledgeable enough in mapping so that they can help teachers work through formatting issues and demonstrate how maps can be used. It seems that Adm-1 is sending conflicting messages to teachers.

## Appendix C: Sample Unobtrusive Document and Memorable Quotes

## Data C1 Unobtrusive Document Summary Form

**Document Name:** Oct. 1, 2007 Professional Development Directives for Researcher

**Code:** UNOB 12      **Memoranda from:** Unit Office and Lead ELED Principal

**Date reviewed:** March 12, 2009

**Permission to Access to document provided by:** Superintendent

**Date permission granted:** Oct. 7, 2008 and Dec. 30, 2008

**Description of document:** Adm 3 gave this memo to Lyle on Oct. 2 to outline CM responsibilities, administrative goals/ guidelines regarding CM Meetings/ Elementary CM Plan 2007 – 2008. There wasn't a meeting with Unit Office administrators to discuss plans, merely the directives were given to Researcher and Researcher was directed to initiate development of a Professional Development proposal to submit to the Unit Office.

**Document relevance to doctoral study:** The memo provides insights into administrative plans for CM during 2007 - 2008 school year and an example of how administrators communicate these directives. It might also provide information to triangulate with other data and might provide items which could be included as a quote.

**Initial analysis thoughts/ideas (How might be reviewed and/or included in study):** This document is an indicator of the limited communications and engagement of teachers in the mapping process. It also indicates the limited involvement of principals in the process. The memo suggests that only one principal was engaged in the elementary CM plans.

**Should the document or portions of the document be included in Appendix of study?** It is doubtful that the document or portions of it should be included in the Appendix. However, portions of it might be used to triangulate data collected from other sources and might provide items which could be quoted in the dissertation.

**Summary of contents:** The memo includes a time frame and type of training which is to be provided. The focus is on elementary teachers. New teachers are to receive basic CM (1/2 day) training; elementary teacher are to complete maps; 1 Grade level per quarter: 1<sup>st</sup> meeting in 2<sup>nd</sup> quarter, ~6 participants per session;. Meeting schedules are to be copied to building principal and the School Improvement Facilitator (SIF). Quarterly reports are to be submitted to (SIF) to disseminate to the Superintendent and Assistant Superintendent of Curriculum. No teacher leadership teams are to be formed in 07 – 08.

Adapted from Miles, M. B., & Huberman, M. (1994). Document summary form: Illustration. In *Qualitative data analysis: An expanded sourcebook* (p. 55). Thousand Oaks, CA: Sage.

## Data C 2 Memorable Quotes File: Sustainability Perceptions

ELED Code	Comment Number	Page	Comment <i>(Excerpt from Elementary Memorable Quotes File)</i>
ELED 1: <b>NO</b>	ELED 1's typed notes handed to researcher after interview  Pilot Interview VTL 115  VTL 114	10	<p>"If current circumstances don't change, curriculum mapping will be gone in Unit 2. It will be labeled something we had to suffer through to prove that we were trying to help the Junior High and High School in their efforts to meet AYP."</p> <p>(talks about impact of reassigning researcher and other to JH as evidence that district is going to try something new) "Unless things change dramatically and unless attitudes change or unless they can see a benefit to what we're doing, I say mapping will be gone."</p> <p>Teachers viewed reassignment of Lyle and others as indicator of "this is the beginning of the end for curriculum mapping. She's being reassigned. This won't last any longer because nobody else is going to step up and do this."</p>
ELED 2: <b>NO</b>	VTL – 73	10 - 11	"For me personally, it's just more confusion. You know, where did it come from? Why was it mandated? What, I understand the purpose of curriculum mapping, but as a district as a whole what was the purpose of it? Where were we going with it? What did we hope to get out of it? Those are, you know, its confusion and to invest time and energy into it and to see no end, no goal."
ELED 5: <b>NO</b>	VTL 77	11	"I see it sliding down the slippery slope just like so many other things in our district have gone."
ELED 8: <b>NO</b>	VTL 26 – 27	8	<p>"as quick as they dropped it from last year to this year, no"</p> <p>"It was pushed so hard last year and then this year we haven't heard anything."</p> <p>"Maybe we are supposed to still be doing it, but nobody has said anything to me about it; so, I haven't."</p>
ELED 1,	POST-IT NOTES <i>Anonymously</i>		- "Mapping appears to be another of the district's initiatives that money was poured into and is now abandoned" -

## Appendix D: Coding

## Coding System, Coded Interview and Post-It Notes

## Coding D1 Leadership Imperatives for Initiative Buy-in and Sustainability

**Semantic Relationship:** Attributes of Responsibilities/Roles **Color-coding Preface:** VL

<p><b>Included Term:</b> Responsibilities/ Roles</p> <p><i>(Excerpt from coding system)</i></p> <p>(Provides insights to answer questions 1, 2, and 3)</p>	<p><b>Cover Term:</b></p> <p>Leadership Resulting In Buy-in (ldib.)</p>
<p><u>Shared Vision</u></p> <ul style="list-style-type: none"> <li>• Relevance [non-specific benefit] (ldib.ccomsvr)</li> <li>• Personal Benefits [e.g., organization tool, raised standards awareness/ alignment] (ldib.ccomsvpb)</li> <li>• Student Benefits [e.g., seamless curriculum, improved student learning] (ldib.ccomsvsb)</li> <li>• Curricular Alignment Benefits [e.g., to standards, horizontal, vertical, lateral content/skills alignment] (ldib.ccomsvcb)</li> <li>• Curricular Communication Tool [e.g., New Teacher Curriculum Guide, Focused Articulation] (ldib.ccomsvct)</li> </ul> <p><u>Moral Purpose</u></p> <ul style="list-style-type: none"> <li>• Implementation Rationale: Purpose Driven [specific intent] (ldib.ccommprpd)</li> <li>• Implementation Rationale: Needs Based [possible solution to identified problem] (ldib.ccommprnb)</li> <li>• Implementation Rationale: External Accountability [e.g., improved test scores] (ldib.ccommprea)</li> <li>• Implementation Rationale: Mandate/ Positive Perception [non-specific purpose but positive view of mapping] (ldib.ccommprmp)</li> </ul> <p><u>Two-way Communication</u></p> <ul style="list-style-type: none"> <li>• Encouraged teacher input/ engagement (ldib.ccomtwentipt)</li> <li>• Encouraged administrative input/ engagement (ldib.ccomtwenadminpt)</li> <li>• Comments Encourage Perseverance (ldib.ccomtwep)</li> <li>• Administrative Commitment [e.g., Buy-in/ Supportive Comments or Actions] (ldib.ccomtwadcomt)</li> </ul> <p><u>Visible Unit Office / Administrative Engagement (ldib.icomtwuoe)</u></p>	<p>Continual Communication (ldib.ccom)</p>

Coding D2: Coded Administrator Interview  
(Excerpt from coded interview)

Position: Unit Office Administrator Location: Interviewee's Office  
Time: 2:45 p.m. – 3:50 p.m. Date: July 28, 2009

The interview began with a review of the consent form and an overview of the purpose and format of the interview.

RQ1: Could you please explain your involvement in implementing curriculum Mapping?

Adm-5: Okay, probably more limited and you know, it is more limited than I would want it to be. I think in terms of presenting to principals (pause) a repeated message that it is important, that it is the direction we want to go. Understanding that (long pause), the time commitment has been huge and from which I had many hours to spend on it (chuckles) this position is evolving. So, if I were to say you know like some days I may come in and everything I'm addressing maybe totally building stuff which is not my area of fun. I mean, but it falls within the realm of what my job description says I will do, but that job description is ever changing. So, if I really had the time to spend on the curriculum that I would like to, it would be first. You know, it would be one major thing. From this office (pause), the last two years as you well know, have been kind of just (pause) we have been pulled in different directions, for various reasons, a lot of it, litigations,

**Comment [VTL9]:** Unit Office Disengaged (ldir.icomsvuod) Limited Commitment (ldir.icomsvadcomt)

**Comment [VTL10]:** One-way communication (ldir.icomowlnadmipt) Traditional Hierarchal (ldir.aobh)

**Comment [VTL11]:** Negative Culture low trust (ldir.aoblt) Teachers have sued, community members have sued

Things that have nothing to do with, at all with curriculum; so, from that both, both the superintendent and I have repeatedly said at administrative meetings – this is important. We are going forward. We support that and yet at the time I don't think there has been sufficient, on my part, and he may say he has given sufficient support, but I don't think we have in terms of leadership from our perspective on modeling, maybe, mapping. You know, I think we both have general concepts and I think we know what it is. We have read about it. We've done it. But, do we in fact practice it so that when you come in and say have you mapped as an administrator? No, I haven't. I wish we did more of that. I wish you know we could have (pause) but before we can get there we have to have a place, we have to have a vehicle in place. We have to have administrators who actually work together. We have to be able to trust that what we are told by administrators is true, that what they are saying is happening because we are not there to monitor. And I think a great deal, you know, (pause) I wish we had more time. I wish we had more resources. I wish we had to put into place, if I could have a Valerie Lyle at every building. You know, but I don't see, we don't have that at

**Comment [VTL12]:** One-way communication (ldir.icomowlnadmipt) Limited Commitment (ldir.icomsvadcomt) Traditional Hierarchal (ldir.aobh)

**Comment [VTL13]:** Limited Commitment (ldir.icomsvadcomt) Unit Office Disengaged (ldir.icomsvuod)

**Comment [VTL14]:** Limited Knowledge (ldir.lrpdadm) Isolated learning (ldir.aobll)

**Comment [VTL15]:** Negative Culture: Non-collaborative (ldir.aobac) Traditional: Isolated/ Autonomous Practice (ldir.aoba) Inadequate Systems thinking (ldir.iapstp)

**Comment [VTL16]:** Limited Adm Commitment (ldir.icomsvadcomt) Unit Office Disengaged (ldir.icomsvuod) Undocumented Verbal Reports (ldir.nmamvr)

Coding D3 Junior High Focus Group Post It Notes  
(Excerpt from coded Post-It Notes)

**Interview Data:** February 12, 2009 **Location:** Researcher's Classroom **Time:** 4 – 5 p.m.  
**Participants:** JH-1, JH-2, JH-3, JH-4

**Question:** Will our district still be curriculum mapping three years from now?

**Procedure:** Participants were given a clipboard with three categories of Post-It note options: No, Yes, and Not Sure. Participants were instructed to record one reason per Post-It Note. They were given approximately ten minutes to record perceptions; then, the participants and the researcher classified notes and collaboratively developed labels for the categories.

**Response percentage:** Three out of four participants indicated they were *not sure* and one out of four participants thought the district *would still be mapping* within three years.

Not Sure Responses

Group Classification	Written Comment	
Resource - Training: Lack of Skills	Training needs to be more intense and more often so we don't forget what we're doing	<b>Comment [VTL1]:</b> Resource Professional Development: Inadequate for mastery (ldir.lpdmd)
	Training has been kind of hit and miss, don't learn the process fully, it's hard for teachers to buy-in Other teachers not sure how to use it	<b>Comment [VTL2]:</b> Resource Professional Development: Inadequate for mastery (ldir.lpdmd)
- Lack of Time	Again, time is an issue teachers need time to collaborate with other teachers in the same subject area. Are teachers going to be given this work time?	<b>Comment [VTL3]:</b> Resource Professional Development: Usage of Maps (ldir.lpdSIP) <b>Comment [VTL4]:</b> Resource Time: Limited Collaboration (ldir.lrtartl)
	If we are really staying with it, why haven't we devoted the time and energy toward the mapper?	<b>Comment [VTL5]:</b> Implementation Plan: Inadequate On-going support/ resources (ldir.iapost)
	I think no because we haven't had the time in our school devoted to it so it appears to be going away (participant classified as Not Sure)	<b>Comment [VTL6]:</b> Action Plan: Inadequate On-going support/ resources (ldir.iapost)
	Time factor – teachers are not doing it on their own time	<b>Comment [VTL7]:</b> Resource Time: Limited Personal Map Development (ldir.lrtpm)
	For it to continue, teachers need to have time to work on their maps is the district going to provide that time?	<b>Comment [VTL8]:</b> Resource Time: Limited Personal Map Development (ldir.lrtpm)

## Curriculum Vitae

Valerie Lyle

### **I. Educational Degrees and Certification**

- A. Bachelors Degree in Education, 1976, Southern Illinois University, Edwardsville, Illinois. I earned K-9 certification and graduated with a minor in music.
- B. Masters Degree in Education, 1983, Southern Illinois University, Carbondale, Illinois. Although this is a general education degree, my area of focus was reading.
- C. As a result of participation in various initiatives, I earned approximately 40 graduate hours with a focus on science and math education. I also received a gifted education certification.
- D. As a result of a 2-year mentorship initiative of the National Association for Gifted Children (NAGC), in 2004 I earned my Professional Achievement Certificate with a focus in differentiated instruction.
- E. In 2001, I earned my National Board for Professional Teaching Standards in the area of Middle Childhood Generalist.

**Work Experience**

F. I began teaching for Wards Mill School District #4 (pseudonym) in 1976. I taught in the district for 33 years. I began my career as a Title I reading assistant and grades 4-8 music teacher. I spent 20 years as a self contained grade 5 teacher with choral director responsibilities. I was an itinerant gifted education instructor and provided services to students in grades 4-6 in 6 of the district's 7 schools. I was later transferred to a position in which I developed reading, math, and science materials for K-5 grade students and co-taught with K-5 teachers for whom the units were developed. While serving as the curriculum mapping coordinator, I provided training and support to the district's K-12 teachers and administrators. During the last 2 years of my career, I served as a science curriculum developer and resource teacher for students in grades 6-7 and co-taught science labs. In addition to providing curriculum mapping training, I was called upon to present workshops in how to incorporate differentiated instruction, hands-on science and math, video-based instruction, and brain-based learning strategies into classroom practices.

**II. Notable Awards**

A. Although I have been fortunate to receive various awards during my career, I am most honored to have been given the following awards: a NAGC Curriculum Division award in 2004 for a differentiated

learning unit I developed and 2 Illinois Science Teacher Associate awards as one of the top 10 Elementary Science Teachers in 1994 and 1996.

### **III. Conference Presentations**

- A. I was honored serve as a video-based lesson developer and presenter for the National Teacher Training Institute (NTTI) during 5 school years. NTTI was a National Public Broadcast initiative designed to integrated hands-on science and math and technology into interactive video-based lessons.
- B. I have also been honored to present at various local, state, and national conferences including the Learning Brain Expo and the National Association for Gifted Children.