THE IMPACT OF SUPERINTENDENT SUPPORT FOR CURRICULUM MAPPING ON PRINCIPALS' EFFICACIOUS USE OF MAPS

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Abstract

Pressures on leaders to reform are pervasive within the United States, and school superintendent and building principal relationships in the use of curriculum maps will partly determine how successfully schools change. Prior studies show superintendents who provide clear expectations and goals, ensure quality professional development, and attend to matters of curriculum alignment and collaborative decision-making develop building leaders with the skills, knowledge, and efficacy to carry out reforms. The results of this study suggest these same findings apply equally well to use of curriculum maps by building leaders.

New York State public school principals in schools containing grade seven with district enrollments $\leq$ 6,000 students were the target population for this quantitative study. Spearman's rho correlations and linear multiple regressions were run to measure strength of the relationships between superintendent and building principal. Superintendent support for curriculum mapping was the independent variable. Dependent variables were (a) curriculum map use by principals, (b) use of maps by principals as boundary objects, and (c) principals' efficacy to use maps. Data were collected with an Internet-accessed survey tool created by the researcher. Principals' sense of efficacy was determined using questions taken from Drs. Tschannen-Moran and Gareis' (2004) study on tools for measuring principal self-efficacy.

Findings showed that significant, positive relationships exist between superintendent support for curriculum mapping and (a) principals' use of maps, (b) principals' use of maps as boundary objects, and (c) principals' efficacy to use maps.

Results also show accountability and monitoring of principals' use of curriculum maps by superintendents are lacking.

Key Words: curriculum map, efficacy, principal, boundary object, superintendent, standards

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Chapter 1: Introduction

> The loose coupling of school leadership and classroom teaching…is paralleled...by the separation of most leadership research and researchers from research on teaching and learning….Second, it seems clear that if we are to learn more about how leadership supports teachers in improving student outcomes, we need to measure how leaders attempt to influence *the teaching practices that matter.* (Robinson, Lloyd, & Rowe, 2008, pp. 668-669)

Problem Statement

Pressures on educational leaders to reform and restructure schools are pervasive within the United States and include Common Core State Standards (CCSS, 2010), Race to the Top (RTTT) (USDOE, 2009), growing global economic competition, next generation assessments (Achieve, 2010), and changing demographics. Curriculum leadership and effective school superintendent and building principal relationships in the use of curriculum maps will partly determine how successfully schools change. Emergence from the Great Recession of 2009 has created tremendous burdens on public school systems. State and local funds are depleted and schools across the nation are being asked to do more with less. In the face of these trying economic times, school leaders seek to prepare children to successfully compete for jobs in this 21st century global economy, and do so with limited resources.

The National Commission on Excellence in Education's *A Nation At Risk* (1983) put the American public on notice that our society and public education system were not preparing children for the rigors of the global community, and we were losing our

competitive edge when compared with other countries' outcomes. According to the United States Department of Education Institute of Education Sciences, United States' student scores on international measures such as the Programme for International Student Assessment (PISA) (Fleischman, Hopstock, Pelczar, & Shelley, 2010) and Trends in International Mathematics and Science Study (TIMSS) (Gonzales, Williams, Jocelyn, Roey, Kastberg, & Brenwald, 2008), continue to show minimal overall improvement and declines in math and science creating a renewed sense of urgency to raise the rigor and relevance of what gets taught in this country's public schools. As a result, the CCSS (2010) were created through the focused efforts of the National Governors Association Center for Best Practices (NGA Center) and the Council of Chief State School Officers (CCSSO). In 2009, President Obama launched the $4 billion RTTT (USDOE, 2009) in an effort to improve the quality and competitiveness of public schools. The four tenets of RTTT (USDOE, 2009) are (a) adoption of CCSS (2010) and next generation assessments (Achieve, 2010), (b) data-informed decision making by school leaders and teachers, (c) development of a competent and skilled teacher workforce, and (d) a turn-around model for low achieving schools.

CCSS (2010) are critically important and useful as they define what students must know and be able to do in the areas of literacy and math to be career and college ready. RTTT (USDOE, 2009) is equally vital to school reform, with a small but growing number of states qualifying for competitive grants to pursue RTTT-based reforms. Next generation assessments (Achieve, 2010) are being readied across the nation to assess school and student progress to meet the standards. CCSS (2010) and changing demographics within the U.S. demand curriculum reform and concomitant changes in

pedagogy and local assessments. Curriculum maps and their creation through curriculum mapping are proven tools for effectively transitioning through periods of reform (Kercheval & Newbill, 2002; Plaza, Draugalis, Slack, Skrepnek, & Sauer, 2007). Maps are databases for informing principal leadership practices and teacher pedagogy by defining what students will know and be able to do on a monthly basis for each subject area. It is proposed that how successfully schools manage the changes will depend on numerous factors, including curriculum leadership and an effective school superintendent and building principal relationship in the use of curriculum maps (Kercheval & Newbill, 2002).

Prior Studies

This nation has experienced significant education reform periods in the past, and ample research exists describing effective leadership practices during such times. A body of such research stems from implementation of NCLB (2002) whose goal was to prepare our nation's schools for the rigors of accountability and Adequate Yearly Progress (AYP) for all students and subgroups. State standards were written, curricula aligned, formative and summative assessments implemented, and data analyzed and disaggregated to varying degrees of success in an attempt to identify what is and is not working for students and schools. District leadership was pivotal in transitioning to the oft times punitive nature of NCLB, and the successful leadership practices during the NCLB era were noted (Cotton, 2003; Leithwood, Harris, & Hopkins, 2008; Marzano & Waters, 2009; Wahlstrom, Louis, Leithwood, & Anderson, 2010; Williams, Tabernak, & Krivaks, 2009).

Hart and Ogawa (1987) conducted a seminal study that showed the impacts, though subtle, of superintendent leadership on building principal practices and student performance. As a tool for curriculum auditing, Fenwick English (1984) demonstrated the value of curriculum mapping to uncover the hidden curriculum taught within classrooms. A study of 50 of Ohio's most improved school districts found the top factor in the districts' progress was tied to curriculum mapping (Kercheval & Newbill, 2002), solidifying the potential of mapping. Mapping is cited often in the literature as a tool for informing change, and is well established by the work of Heidi Hayes-Jacobs (1997). With curriculum reform being pushed forward by a 21st century global agenda, leadership today will demand spotlight attention by superintendents and building principals on curriculum mapping as schools raise the bar of rigor and relevance in efforts to meet the challenges.

Effective superintendents develop principals' capacities to lead, particularly in the area of curriculum reforms. Superintendents who provide principals with clear goals and expectations, monitor principal performance, ensure quality and sustained professional development, and attend to the matters of curriculum alignment and collaborative decision-making develop building leaders with the skills, knowledge, and efficacy to carry out the challenging reforms needed (Anderson, 2003; Bottoms & Fry, 2009; Marzano & Waters, 2009; Wahlstrom et al., 2010). When maps are used properly and confidently as instructional leadership tools, efficacious building principals have the capacity to create communities of practice and boundary objects which bring administrators to the classroom level and help push reform efforts forward (Wenger, 1998). A building principal's efficacy is critically important for using curriculum maps

effectively and persevering through obstacles and barriers that appear along the path of curriculum reform.

Gaps/Deficiencies in Studies

Numerous studies have been conducted on superintendent and building principal leadership, but few have looked at the relationship between superintendents and building principals in the areas of curriculum mapping. Furthermore, research exists on leadership and curriculum, but scant evidence on the use of maps in leadership practices. Studies have shown varying uses of maps in school practices regarding collaboration, alignment, and general processes of decision making, but little in the area of superintendent support for maps and relationships to building principals' use of maps. Also lacking is research on superintendent support for curriculum mapping and building principals' sense of efficacy to use maps as instructional leadership tools.

Communication and development of education policy are compromised by a gap between educational leadership research and field practitioners (Heck and Hallinger, 2005, p. 239), and research on school effectiveness could benefit from studies on organization functions and the causal relationships between leaders, school culture, and school effectiveness (Luyten, Visscher, and Witziers, 2005, p. 272).

Significance of Study

This study provides valuable information for district leaders as they work with building principals to ensure effective implementation of school reform efforts, particularly in the areas of curriculum, instruction, and assessment. Strong superintendent leadership and support for building principals will be necessary to fully realize the potential of curriculum maps to inform building leadership practices as schools grapple

with RTTT (USDOE, 2009), CCSS (2010), and next generation assessments (Achieve, 2010). Principals who use maps most effectively do so through professional learning communities in which the curriculum map serves as a bridge between administration and classroom. Contributions from this study will help principals to do their highest work as instructional leaders.

Merits of this dissertation are supported by Leithwood and Jantzis' (2008) statement: "Future research would do well to inquire more deeply into the leadership behaviors of district administrators that nurture a sense of efficacy and confidence on the part of school leaders" (p. 521). This study delves into an unexamined area of curriculum reform essential to understand systemic change, and may contribute to more effective and widespread use of curriculum maps by building principals. Results can inform theories affecting the organizational aspects of school effectiveness and human causal relationships between superintendents and building principals in the area of curriculum maps.

This research has the potential to guide superintendents' practices to ensure building principals have the skills, knowledge, resources, and efficacy to effectively use curriculum maps to help carry out curriculum reform. Superintendents, boards of education, and building leaders must recognize the importance of curriculum mapping support at the superintendent level as major school reforms occur through implementation of CCSS (2010), next generation assessments (Achieve, 2010), and in some states, RTTT (USDOE, 2009). Results will empower principals to effectively implement CCSS (2010), next generation assessments (Achieve, 2010), and teacher evaluations.

Purpose Statement

The purpose of this study was to explore how superintendents' actions and support for change initiatives impact building principals' abilities to lead and sustain change, and how such efforts directly and indirectly affect leadership practices and principals' sense of efficacy. More specifically, this research examined the strength of the relationship of superintendent support for curriculum mapping and building principals' efficacious use of curriculum maps as a tool for successful change. Three research questions guided this study:

1. What is the strength of the relationship between superintendent support for curriculum mapping and use of curriculum maps by middle school building principals?

2. What is the strength of the relationship between superintendent support for curriculum mapping and the extent middle school principals use curriculum maps as boundary objects?

3. What is the strength of the relationship between superintendent support for curriculum mapping and middle school building principals' sense of efficacy to use maps?

The unit of analysis is building principals with responsibility for students in seventh grade, which primarily addresses middle school buildings. Although data contain responses from principals with diverse grade levels, the focus on seventh grade is a determinant factor because of the call for secondary school research on leadership and teaching (Anfara, 2009; Louis, Leithwood, Wahlstrom, & Anderson, 2010). A middle school population was also chosen since it (a) represents school leaders responsible for a diverse, transitional student population where subject area curricula are more focused

than in elementary settings in which learning to read and reading to learn are priorities at the primary and upper elementary levels, respectively; and (b) departmentalization is more likely to occur at the middle level than in elementary schools, and yet there still exists opportunity for cross curricular decision making through grade level teams.

Superintendent support for curriculum mapping will be the independent variable, and dependent variables are extent of curriculum map use by principals, use of maps as boundary objects, and principals' sense of efficacy to use maps as instructional leaders. Moderating variables including principal and school demographics will also be collected. This cross-sectional study will compare the relationship of the independent variable with each dependent variable. Therefore, a quantitative study was chosen, driven primarily by cross-sectional data collected from a self-administered, multi-measure tool.

Limitations and Delimitations

A major study limitation involved the filtering of all districts with enrollments $\geq$ 6,001 students. Schools from large districts were filtered from the study due to the unexpected relationship of superintendents and building principals in New York City schools. New York City principals work with Children First Networks (CFN) (NYCDOE, n.d.) rather than with superintendents regarding curriculum and other matters of student learning. CFNs work directly with building principals to create personalized services that meet the needs of each school. Consequently, survey data were filtered to remove all schools with enrollments greater or equal to 6,001 students (all 33 New York City School Districts have enrollments greater than 6,001 students).

Correlation is not causation, and this study is limited by its quantitative nature. Data in this study were based on principals' survey responses, and more detailed and

descriptive results potentially could have been garnered through probing interviews with principals. A response rate of 26% was an additional limitation in this study. Measuring superintendent support indirectly through principal responses is dependent on principals' knowledge regarding central office, which may not be accurate or objective. Additionally, the survey questions selected by the researcher to represent the three dependent variables of curriculum map use, use of maps as boundary objects, and principal efficacy may reflect researcher bias.

Key Terms and Definitions

The list below defines terms and definitions that will be used throughout this dissertation.

Adequate Yearly Progress: Minimum levels of improvement in measurable terms of student performance local educational agencies must achieve within given time frames specified by the Child Left Behind Act (NCLB Act, 2002).

Boundary Objects: "Artifacts, documents, terms, concepts, and other forms of reification around which communities of practice can organize their interconnections" (Wenger, 1998 p. 105). Boundary object are tangible items individuals use to cross boundaries between groups. Within schools, boundary objects are tools principals can use to promote professional conversations with teachers about curriculum, instruction and student learning. Star and Griesemer (1989) define boundary objects as "objects of interest." Boundary object examples include student writing folders, student work samples, and curriculum maps.

Boundary Practices: Complex practices which require sustained effort to maintain a bridge between two communities of practice (Wenger, 2000, p. 237).

BEDS: Basic Educational Data System used by the New York State Education Department to define general characteristics of pupils, staff, and facilities of every local school district, school building, and intermediate district (Boards of Cooperative Educational Services--BOCES) in New York. (retrieved from http://www.archives.nysed.gov/a/research/res_topics_ed_sed.shtml).

Children First Networks (CFN): Networks within the New York City Department of Education that work directly with building principals to create personalized services which meet the needs of each school (NYCDOE, n.d.).

Collective Efficacy: A leader's perception of staff's ability to impact student learning (Leithwood & Jantzi, 2008, p. 498).

Common Core State Standards: K-12 educational standards for English language arts and mathematics that states can voluntarily adopt. Creation initiated by National Governors Association Center for Best Practices (NGA Center) and the Council of Chief State School Officers (CCSSO).

Communities of Practice: Groups of individuals and practices where there is mutual engagement, shared repertoire, and joint enterprise (Wenger, 1998, p. 73).

Curriculum Maps: Databases that describe the content, skills, and assessments covered each month in a given class or subject.

Curriculum Mapping: Active process by educators of recording the content, skills, assessments and other relevant course information by month into a data base or template for future reference.

Next Generation Assessments: Assessments to measure student learning against the CCSS from grade three through high school. The U.S. Department of Education awarded $330 million to two multistate consortia to develop the next-generation assessment systems (Achieve, 2010).

No Child Left Behind Act (NCLB): Federal bill to ensure all children have a fair, equal, and significant opportunity to obtain a high-quality education and reach, at a

minimum, proficiency on challenging State academic achievement standards and state academic assessments (NCLB, 2002).

Reification: "to regard (something abstract) as a material or concrete thing" (taken from http://www.merriam-webster.com/dictionary/reifying).

Race to the Top: A $4.35 billion federal competitive grant program designed to encourage and reward States to create conditions for education innovation and reform (USDOE, 2009).

Self-Efficacy: The perception one has about his or her abilities to succeed at something. Self-efficacy is shaped by enactive mastery experiences, vicarious experiences, verbal persuasion, and physical-emotional states (Bandura, 1997, p.79).

Chapter II: Review of Literature

Industry, business, government, and schools are traversing the choppy whitewaters brought on by a global financial collapse and sputtering economy, rising emergent markets, and dizzying technological transformations of how people live and work with one another. Amidst the churn are schools pressed to reform curricula, instruction and assessments while facing reduced revenues and personnel, community resistance to rising school taxes, and a movement to greater federal control of curricula and monies. The challenges are many. District response to these reform pressures will be determined by the quality of relationships between building and district level leadership.

This study explored how superintendents' actions and supports for change initiatives impact building principals' abilities to lead and sustain change. It further examined how such efforts directly and indirectly affect leadership practices and principals' sense of efficacy. Specifically, this research looked at the relationship between superintendent support for curriculum mapping and principals' use of maps to inform leadership practices. The literature and research behind this study's thesis will be explored through four sections: the change process, leadership related to district and school improvement, curriculum maps and instructional leadership, and principal efficacy.

The Change Process

Today, districts are implementing CCSS (2010), next generation assessments (Achieve, 2010), new principal and teacher evaluation systems, and for some, RTTT (USDOE, 2009). Add 21stcentury skills and a global economy, and the rate of change can

be figuratively dizzying to the school community. Change can be messy, unpopular, and difficult for the leader. Change is an emotional process and a manager's ability to lead people through even the best laid plans for reform can be compromised by the social aspects within an organization (Bolman and Deal, 2008, p. 176). People resist change, and institutions can inhibit creative thinking. Culture, or the way we do things, can limit people's creativity and ability to see beyond their "existing arrangements" (DiMaggio, 1997, p. 268).

Implementing change such as the introduction and use of curriculum mapping can be daunting and requires analytic and reflective attention by leaders. Allen and Schwartz (2011) suggest leaders break down tasks and focus on "next actions" so workers find tasks more manageable and experience the motivational power of success (p. 86). The change process can be simplified into Kotter and Cohens' (2002) eight steps: (a) Increase urgency; (b) Build the guiding team; (c) Get the vision right; (d) Communicate for buy-in; (e) Empower action; (f) Create short-term wins; (g) Don't let up; and (h) Make change stick (p. 7). Leaders know change can test one's efficacy, especially in times of crisis. To promote progress and offset pressures on educators, leaders create an autonomous environment where goals are clear, resources and time are available, assistance is provided, and people have time to share ideas and learn from one another's successes and failures (Amabile & Kramer, 2011, p. 76).

People react to change differently. Otto Scharmer (2009) suggests we all have blind spots from which we function (p. 6), and four levels for how we respond to change: reacting, redesigning, reframing, and presencing (p. 50). Most systems remain at levels

one and two, fewer get to level three, and level four is a special area where leaders and followers together reach their highest potential (p. 52). To get to presencing requires an open mind, heart, and will of all participants (p. 42). Presencing exists when individuals go beyond their source of awareness or blind spot to one of possibility; where the future and present merge to act on "one's highest future potential" (Scharmer, 2009, p. 8). Presencing moments occur through purposeful, well-informed leadership. In addition to understanding the change process, one must lead people through the transition periods accompanying change.

Smooth transitions are necessary for people adjusting to change. Bridges (2009) identifies three transition phases of change as (a) Letting go of the old, (b) Passing through the neutral zone, and (c) Making a new beginning (pp. 5-6). Transitions can be psychologically challenging. Leaders can help people let go by identifying who is losing what, understanding there will be strong emotional reactions, communicating clearly what is occurring, giving people roles to play during the planning and implementation, and honoring and sympathizing with people for their losses (Bridges, 2009, pp. 25-30). In terms of mapping, it may mean loss of known or preferred content for some educators, and new curricula for others.

While in the neutral zone between old and new, people may feel overworked, overloaded, and polarized. Small victories and frequent reminders of workplace priorities can help spur people to persevere through periods of reform. In a study of business workplace and employee performance, Amabile and Kramers' (2011) review of 12,000 employee diary entries showed people are motivated by feelings of progress. On a daily basis, individuals' "creative output" was correlated with a sense of happiness and purpose

for meaningful work (p. 73). Allen and Schwartz (2011) state, "The leader's role is to…mobilize and focus and direct and inspire and regularly recharge those he or she leads" (p. 86). In the educational arena, Barnes, Camburn, Sanders and Sebastian (2010) found principals responded positively to incremental, sustained professional development in professional learning communities. Providing time and communications for staff to negotiate through the neutral zone will allow people to prepare for a new beginning.

Change efforts shut down quickly when resources dry up or priorities change. As an example, a Florida middle school's efforts to include all students with disabilities in regular education classes ended abruptly when the district redirected resources and priorities to support test preparation efforts. The end results were a disenfranchised staff and termination of building-wide inclusion (Sindelar, Shearer, Vendol-Hoppey, & Liebert, 2006).

> In highly successful change efforts, when people begin to understand and act on a change vision, you remove barriers in their paths. You take away the tattered sails and give them better ones. You take a wind in their faces and create a wind at their backs. You take away a pessimistic skipper and give the crew an optimistic boss. (Kotter & Cohen, 2002, p. 103)

Engaging multiple stakeholders in strategic action planning provides a compass and roadmap to realize the benefits of mapping. A principal's visible commitment to change at the building level will either promote or compromise a change effort. Researchers Neeley and Leonardi (2011) found frequent reminders by managers and "making their presence felt" helped get tasks done (p. 39). When it comes to second order change such as curriculum mapping, statistically significant characteristics that principals display

include (a) knowledge of curriculum, instruction and assessment, (b) flexibility, and (c) being a change agent (Waters & Cameron, 2007, pp. 27-32). Superintendent vision and support in change efforts are shown to help principals effectively lead curricular reform.

Leadership Related to District and School Improvement

"The leadership that counts in the end is the kind that touches people differently. It taps their emotions, appeals to their values, and responds to their connections with other people. It is a morally based leadership-a form of stewardship" (Sergiovanni, 2007, p.76). Leadership drives reform. Superintendents who collaborate with principals in goal setting, who are involved in curricular, instructional, and assessment decisions, who monitor progress, and who support their building leaders with resources and professional development tied to district goals are most apt to have a measurable impact on student learning (Kercheval & Newbill, 2002; Marzano & Waters, 2009; Wahlstrom et al., 2010; Williams et al., 2009). Similarly, building principal attention to such areas leads to targeted building level efforts and school success.

School leadership matters to student success. Leithwood, Harris, and Hopkins (2008) state, "As far as we are aware, there is not a single documented case of a school successfully turning around its pupil achievement trajectory in the absence of talented leadership" (p. 29). The authors distill strong leadership into seven claims, three of which are:

> School leadership is second only to classroom teaching as an influence on pupil learning….School leaders improve teaching and learning indirectly

> and most powerfully through their influence on staff motivation, commitment and working conditions….School leadership has a greater influence on schools and students when it is widely distributed. (p. 27)

In one study, principals were shown to significantly impact grades 1-8 English Language Arts (ELA) instructional practices and student performance by targeting leadership efforts around instruction, collaboration, trust building and goals and expectations (Supovitz, Sirinides, & May, 2009, pp. 43-44).

Building principals measurably impact instruction and student learning (Blase & Blase, 1999; Cotton, 2003; Kelley & Peterson, 2002; Penlington, Kington, & Day, 2008). However, until the National Commission on Excellence in Education's landmark *A Nation at Risk* (1983), there was scant evidence of superintendents' effects on student learning. An early study by Hart and Ogawa (1987) showed California superintendents affected performance of 6th and 12th grade students on math and reading standardized test scores. The researchers set the tone for subsequent studies as they reasoned, "If we think in terms of cumulative effects, then the finding that superintendents exert a relatively small influence on instructional performance of school districts should not preclude the examination of how that influence is brought to bear" (Hart & Ogawa, 1987, p. 81). With great foresight, the authors went on to state the possibility that estimates of superintendent's influence are overly conservative.

Early reflections that superintendents can have a significant effect on student learning have since been examined in numerous studies as evidenced by the work of Marzano and Waters (2009) of McREL (Mid-continent Research for Education and

Learning). Their 2006 landmark meta-analysis of leadership behaviors summarized key district leadership strategies that have a significant, positive impact (.24 correlation) on student learning. These strategies include (a) collaborative goal setting, (b) nonnegotiable goals and expectations for achievement and instruction, (c) monitoring achievement and instruction, and (d) allocating resources to support goals (pp. 5-6). Far removed as superintendents may seem from the daily activities within the classroom, superintendents impact student learning in significant ways.

Successful superintendents have a district-wide focus on their school systems. Anderson's (2003) literature review of districts that successfully transformed their schools showed superintendents' district-wide attention to goal setting, student success, professional development and curricula were essential to positive change. Efficacious district cultures, accountability at all levels, quality instruction, and curricula in reform efforts were evident in such districts (pp. 8-9). Anderson (2003) emphasized the importance of targeted professional development, especially for those in leadership positions (p. 10). Professional development and support is especially needed for middle and high school principals to best work with teachers as instructional leaders (Louis et al., 2010). Effective superintendents recognize the value of attending to district-wide curriculum, instruction, and assessment, and investing in the professional development of building leaders.

Curriculum knowledge and professional development.

Effective superintendents recognize what gets taught and measured in classrooms defines "how we do things around here," and attention to curriculum will be critically

important for success. Such superintendents participate collaboratively with building principals in curricular decision-making, and are still the most important individuals in forming curriculum policy (Andero, 2000). Curriculum is a powerful lever for leaders, and has greater effects on student outcomes than Charter Schools, state standards, pre-school programs, or 21st century teaching (Whitehurst, 2009). Whitehurst (2009) suggests curriculum be a federal policy lever for change (p.9), something which may be happening through RTTT (USDOE, 2009). Superintendents are more apt to lead effectively during this era of state and federal education reform by maintaining a vested interest in curricular matters and making time to collaboratively inform curricular decisions with building principals.

Professional development is critical for change, and successful building principals attend to curriculum and instruction matters through professional development offerings congruent with clearly communicated building goals. A study of San Diego City schools that successfully reformed were found to have building principals who empowered staff in decision-making, clearly communicated their goals and expectations, and ensured professional development was aligned with district goals and objectives (Graczewski, Knudson, & Holtzman, 2009, p. 91). Professional development also has a direct relationship on teachers' attitudes about mapping (Wilanski, 2006 pp. 98-99). Mapping efforts are more apt to be successful when building principals ensure staff readiness to develop and use maps through sustained professional development aligned to building goals.

Curriculum and professional development are tools district leaders can employ to improve schools. The top two factors tied to district improvement in a study of 50 of Ohio's most improved school districts were curriculum alignment and professional development (Kercheval & Newbill, 2002, pp. iii-iv). Other proof of curriculum's importance in superintendent leadership is the landmark Wallace Foundation Report in which Wahlstrom, Louis, Leithwood, and Anderson (2010) state, "The potential for data-driven improvement plans to make a difference in teaching and learning depends on aligning local curriculum, teaching, and assessment practices with the external accountability measures" (p. 24). Research is rich in the value of curriculum to inform instruction, assessment, and professional development practices in school districts.

Superintendents monitor curriculum, instruction and assessments to ensure curricular congruence with state and national standards. Such leadership allows school principals and teachers to focus on what is valued at the district level rather than on the "change of the day." Schools with coherent and aligned curricula outperform similar schools lacking curricular congruence. A study of 222 Chicago elementary schools showed schools with the highest gains in student achievement had a common framework for curriculum, instruction and assessments (Newmann, Smith, Allensworth & Bryk, 2001). Professional fatigue and frustration due to curriculum incongruence were suffered by less successful schools. Thus, district policies and district-organized professional development should focus on instructional program coherence as part of school improvement plans (Newmann et al., 2001, pp. 312-316). Curriculum and instructional leadership are critical, and investing in the intellectual capital of building principals is essential to a coherent, effective instructional program.

Collaboration.

Leadership and control distributed amongst various hierarchic levels within an organization are more effective than autocratic or oligocratic structures (Tannenbaum, 1961). Democratic leadership results in more effective organizations with commonality of purpose and satisfaction. Superintendents who collaborate with building principals in goal setting and decision making are more effective than those who choose to rule autocratically. Such leadership practices empower others while holding all accountable for outcomes.

> Facilitation, not control, should be the guiding idea in attempts to motivate humans. Even when one is in a position of power or authority, efforts to motivate people will generally be more successful if they are viewed as *collaborations* between people who may or may not share the same feelings, expectations, and agenda of personal goals. (Ford, 1992, p. 202)

Courage and a passionate sense of purpose are required for embarking on curricular initiatives. Superintendents who "walk the talk" in areas of curriculum, instruction, assessment, and collaboration have major effects on school and district cultures (Wahlstrom et al., 2010). Williams, Tabernak, and Krivaks (2009) showed such effects in their study of 28 Ohio superintendents who transformed math and science student achievement in their districts. The superintendents demonstrated collaborative leadership in curricula and instruction by creating a Science and Mathematics Achievement Required for Tomorrow (SMART) Consortium. These leaders formed an advisory council of fellow superintendents who collaborated with principals to direct

activities, design stretch goals to ensure measurable, sustain progress in math and science, promote focused professional development, and nurture teachers to transform individual teaching practices (pp. 438-441). Their conclusion: "*Superintendent leadership matters.* Teachers and principals watch to determine the superintendent's interest in new curriculum and teaching strategies….Superintendent commitment and support empowered teachers to risk change and provided them with effective teaching tools and methods" (Williams et al., 2009, p. 454). Superintendents impact the programs and cultures of institutions they serve by getting deeply involved in curriculum, instruction, and assessment matters collaboratively with building principals.

Literature review of successful high school transformations demonstrate the value of superintendent-building principal collaborations (Bottoms & Fry, 2009). Principals in the most improved schools had collaborative working relationships with district office, which developed their capacity to lead school reform (Bottoms & Fry, 2009, p. ii). Paraphrasing Bottoms and Fry (2009), other critical superintendent actions and behaviors were to give principals a full arsenal of strategies to be successful, and ensure principals have the necessary data and skills to link information about results to student experiences (Bottoms & Fry, 2009, pp. iv-viii). Once again, the message is clear: Superintendent leadership that addresses collaboration, curriculum, instruction, and assessment matters to building level leadership.

Just as superintendents through collaboration impact the practices of building principals, principals' collaborations within buildings influence teachers' practices in and out of the classroom. "We found that the largest and most significant relationship in the

structural model was the effect of principal leadership on peer influence" (Supovitz et al., 2009, p. 44). As there is a direct relationship between superintendent leadership and principal performance, there is a concomitant relationship between principals and teachers' instructional practices. Penuel, Riel, Joshi, Pearlman, Kim, and Frank (2010) showed schools with a common vision and aligned formal and informal processes for collaboration and engagement were more likely to have staff that communicated and sought advice from one another.

The perception of a principal's sense of control is impacted by how district leadership wields power and influence, and there is no loss of influence when one shares leadership with others (Louis et al., 2010). Similarly, building principals play an important role in promoting teacher leadership and displaying flexibility so teachers may perceive their environments as controllable, thereby creating a culture of trust. Literature review of how principals influence instructional quality in U.S. schools showed principals who collaboratively involved teachers in decision-making perceived themselves to have greater impact on instruction and supervision than those who didn't share leadership (Printy, 2010). "Principals who see themselves as working collaboratively towards clear, common goals with district personnel, other principals, and teachers are more confident in their leadership" (Wahlstrom et al., 2010, p. 31). Principals who have a sense of control are more apt to develop teachers' sense of control.

Curriculum Maps and Instructional Leadership

"Researchers tell us that principals of high-achieving schools are knowledgeable about curriculum and instruction, facilitate discussion among staff about these issues, and

engage in this discourse themselves" (Cotton, 2003, p. 30). Curriculum maps provide districts and building leaders a database of information to enact major changes in research-supported ways as CCSS (2010) and next generation assessments (Achieve, 2010) usher in a new chapter in the standards and assessment movement. Curriculum maps and the process of creating them are proven mechanisms for guiding reform processes, and schools have relied on curriculum maps to inform decision-making for decades (English, 1984; Hale & Dunlap, 2010; Harden, 2001; Hayes-Jacobs, 1997). Curriculum-savvy building principals use maps to identify what truly gets taught in classrooms. Such principals use maps to bridge gaps between administration and the classroom, focus instructional leadership, and allocate resources. Curriculum maps allow principals to impact school performance.

Curriculum maps.

Fenwick English (1984) launched curriculum mapping a quarter century ago as a means for determining what got taught in a classroom. He stated,

> Mapping is an auditing technique for looking at the taught curriculum as reported by the teacher….It gives principals and other instructional leaders a handle on the curriculum that they never had before…Figuratively speaking, when you develop a curriculum, you are developing the student's career; the student's career is a means to the student's life. (pp. 50-52)

Heidi Hayes-Jacobs (1997) popularized curriculum mapping by capitalizing on technology to bring the process of mapping a curriculum from a task for an outside

auditor to that of the individual teacher. Hayes-Jacobs (1997) described six phases of curriculum mapping: (a) Collecting the data, (b) The first read through, (c) Mixed group review session, (d) Large group review, (e) Determine those points that can be revised immediately, and (f) Determine those points that will require long-term research and development (pp. 8-16). Curriculum mapping has kept pace with 21st century technologies, and now includes numerous web-based mapping programs. Superintendent vision, building level goals and objectives, resources, professional development, and time are necessary to implement change with curriculum maps.

Educators require leadership within their ranks, a user-friendly mapping process, flexibility, and recognition of the perceived threats some members may have (Harden, 2001, p.136; Sumsion & Goodfellow, 2004, p. 336-337). Curriculum mapping is a tool for informed decision making and bridging the gap between teachers and administrators. Mapping is not for evaluating teachers. As English (1984) states, "Curriculum mapping is not a way to evaluate a teacher; it is a way to examine a program. If you're interested in evaluating a teacher, then you're interested in curriculum 'zapping'" (p. 63). Mapping efforts work when administrators provide time and supports for teachers to develop and use maps in a collaborative fashion, helping to guarantee mapping will be sustained over time and changes in leadership (Hale & Dunlap, 2010, p. 47).

Curriculum maps remove the vagaries of written, taught, and tested curriculum, and provide opportunity for deep, meaningful discussion and planning by principals and teachers. Aligning curriculum maps to state standards purges discrepancies between what is taught and assessed, allowing students to succeed on high stakes tests while also

exploring a deeper, richer curriculum (Glatthorn, 1999; Goodwin, 2010; Lentz, 2007; Shanks, 2002). Aligned curricula help ensure children learn what is deemed rigorous and relevant as defined in state or national standards, and building principals who use maps to ensure alignment are more apt to have successful programs. As examples, underperforming schools in California were found to have 25% of curricula aligned to the California Content Standards (Ybarra & Hollingsworth, 2001, p. 35), and teachers with aligned curricula to state standards outperform those teachers lacking alignment (Supovitz & Christman, 2003, p. 5).

Curriculum maps allow teachers and principals to communicate and share information about student learning with one another. Curriculum mapping can have positive impacts on teachers' attitudes and their instructional practices, with favorable attitudes about mapping for alignment to standards, collaboration, and assessment (Sztoric, 2009; Wilanski, 2006, pp. 95-99). Curriculum mapping has also been shown to increase collaboration and collegiality in a Teacher Licensure program (Uchimaya & Raddin, 2009, p. 278). In Sumsion and Goodfellows' (2004) study of a Bachelor of Education Program's Generic Skills, the authors found the process of mapping helpful in reflecting and goal setting (p. 339). Curriculum maps offer building principals the opportunity to create communities of practice through collaboration, identity, and meaning for participants. In so doing, curriculum maps have transformative potential to impact school culture and student learning.

Curriculum maps and boundary objects.

Research shows there is a gap between building principal and instruction. "How to achieve influence over work settings (classrooms) in which they rarely participate is a key dilemma" (Wahlstrom & Louis, 2008, p. 459). More research is needed for building principals to understand how to narrow the gap between teaching and administration.

> The loose coupling of school leadership and classroom teaching…is paralleled...by the separation of most leadership research and researchers from research on teaching and learning….Second, it seems clear that if we are to learn more about how leadership supports teachers in improving student outcomes, we need to measure how leaders attempt to influence *the teaching practices that matter.* (Robinson, Lloyd, & Rowe, 2008, pp. 668-669)

Principal use of curriculum maps will provide the important bridge from administration to teacher, thereby influencing classroom instruction.

Curriculum maps are boundary objects, which Wenger (1998) defines as "artifacts, documents, terms, concepts, and other forms of reification around which communities of practice can organize their interconnections" (p. 105). The value of boundary objects is conveyed in Star and Griesemers' (1989) definition of boundary objects as "objects of interest." In their case study of communities within a university museum, Star and Griesemer (1989) found the common need for "generalizable findings" among diverse groups of stakeholders could be realized through tangible objects of interest (p. 392).

Maps as boundary objects make intangible entities such as daily instruction, assessment, and student learning, tangible. Maps allow principals to traverse administrative and instructional communities of practice, meaningfully impacting instruction and student learning. Communities of practice are those groups of individuals and practices where there is mutual engagement, shared repertoire, and joint enterprise (Wenger, 1998, p. 73). Curriculum mapping allows development of communities of practice and boundary objects for principals to get directly at the classroom level of instruction. Such communities can be transformative, requiring adept building principal leadership skills.

Effective boundary practices follow a structured routine (i.e. reviewing writing folders on a weekly basis) and are mutually engaging to both administrator and teacher (Coldren & Spillane, 2007, p. 383). A case study of an urban elementary school showed that a principal's use of boundary objects closed the gap between administration and teaching, leading to informed instructional leadership. Writing folders, assessment data, and teacher lesson plans provided an avenue for the principal to impact pedagogical practice (Coldren & Spillane, 2007, p. 370). Crossing boundaries within a building can be transformative for staff and building principals alike as dialogue, meaningful decision-making, and a sense of community promote realization of a building's vision and goals.

Boundary objects are the platform for two-way communications between administration and teachers. In Stein and Coburns' (2008) analysis of two urban districts, schools with a bi-directional architecture through their use of boundary objects were more effective than those schools in which communications were unidirectional. In the

bi-directional schools, principals used boundary objects to coordinate effective practices, interact with staff, and make connections throughout levels of the organization (p. 615). The authors concluded that teachers' opportunities to learn are determined by the structure and nature of cross-community interaction designed by the district (Stein & Coburn, 2008, p. 618). Tannenbaum (1961) described how dysfunctional oligarchies occur when organizations lack effective communication or mutual understandings.

District leaders can also employ curriculum maps as boundary objects to promote reform and bridge the boundaries between central office and schools.

> Because district leaders seldom interact directly with the teacher communities they seek to influence, they identify or create "stuff" that embodies their vision (e.g. Curricular frameworks, directives, or procedures) and launch them on journeys that cross the boundaries of a variety of communities (i.e. they "travel" from central office to principals to coaches to teachers). (Stein & Coburn, 2008, p. 585)

Superintendents mindful of communities of practice and boundary objects can bridge divides and help promote change both in districts and schools.

Superintendents who use curriculum maps as boundary objects and encourage building principals to do the same are more likely to see positive changes than those without such leadership practices. Robinson et al. (2008) analysis of leadership styles on student results further reveal the importance of bridging the gap between administration and classroom instruction and learning. The authors found student performance is

positively impacted when school leaders are intimately involved in instruction and student learning (p. 664). In particular, they found instructional leadership that included teacher evaluation, curriculum work, and classroom visitations was three to four times more effective than transformational leadership due to the relationship building instructional leadership cultivates (Robinson et al., 2008, p. 665). As boundary objects, curriculum maps allow principals to nurture a school's professional community. Superintendents recognize the critically important role of professional development and learning for building leaders, and ensure principals have the necessary skills and understandings in curriculum, instruction, and assessments to succeed.

Principal Efficacy

Confident principals are essential to major reform initiatives. "Where there's a will, there's a way" and "If you think you can, you can" capture the vitality and power of efficacy. Louis et al. (2010) identified eight district conditions significantly correlated to building principal's efficacy: "Emphasis on teamwork (.45), Focus on quality (.39), District culture (.38), Use of data (.35), Job-embedded professional development for teachers (.35), Relationships with schools and stakeholders (.35), Targeted improvement (.31), and Investment in instructional leadership (.23)" (p. 134). The authors also showed professional development of principals has minimal impacts on principals' efficacy unless tied to improvement goals (p. 145).

A building principal's efficacy affects his or her ability to collaborate with staff, set goals and expectations, shape a school culture, and persist through adversity and reform. Effective instructional leadership affects teachers at the emotional, cognitive, and

behavioral level (Blase and Blase, 1999, p. 23), which suggests building principals who lack self-efficacy may struggle in their use of curriculum maps as instructional leaders. School climates that are efficacious, trusting, and focused on academic excellence create what Hoy, Tarter, and Hoy (2006) term "academic optimism" (p. 426). Optimism matters in school success. Confident principals are those most likely to develop the components of academic optimism (academic emphasis, collective efficacy, and faculty trust in parents and teachers), creating school cultures that persevere. Collective efficacy is important as it instills a motivational belief that teachers and the school can make a difference in the lives of all children despite socioeconomic challenges or other impediments to learning (Hoy et al., p. 441).

Lovell (2009) studied principals' self-efficacy using the Principal Sense of Efficacy Scale (PSES) developed by Tschannen-Moran and Gareis (2004) to determine the impacts of principal self-efficacy on school performance. Lovell's (2009) results indicated a weak relationship between school success and principal self-efficacy. However, he did find efficacy increases with years of experience, and efficacy for instructional leadership at the middle and high school levels is greater than efficacy for management or moral leadership. Data also showed that a principal's efficacy for instructional leadership at the middle or high school level was the strongest predictor for school effectiveness.

Efficacy pioneer Albert Bandura (1997) stated,

> People who doubt their capabilities in particular domains of activity shy away from difficult tasks in those domains. They find it hard to motivate

> themselves, and they slacken their efforts or give up quickly in the face of obstacles. They have low aspirations and weak commitment to the goals they choose to pursue. In taxing situations, they dwell on their personal deficiencies, the formidableness of the task, and the adverse consequences of failure. (Bandura, 1997, p.39)

Efficacy is the fire that burns through the obstacles and barriers people face during especially challenging times, and to lose one's efficacy, or to lack efficacy, is a dead end to change.

Principals who lack an efficacious mindset are less likely to implement the reforms necessary for 21st century education. They are less likely to support and take risks, less likely to persevere in the face of resistance, less likely to empower others, and less likely to realize district goals and visions. System stressors can undermine a leader's self-efficacy. In a study of principals of schools labeled as needing Program Improvement (PI), Santamaria (2008) found principals in PI schools had lower self efficacy than those not in such schools; and younger, less experienced principals had significantly lower self-efficacy than older, more experienced principals (p. 62). With the added elements of CCSS, RTTT, and next generation assessments (Achieve, 2010), effective superintendents are mindful of the pre-existing stressors existing for building principals.

There are four antecedents to self-efficacy that superintendents can impact to develop building leaders' efficaciousness. Those are: enactive mastery experiences, vicarious experiences, verbal persuasion, and physical-emotional states (Bandura, 1997,

p.79). Enactive mastery, akin to "Success breeds success," is developed by successful experiences, preferably those demanding hard work and perseverance. Vicarious experiences, or comparisons to what others do and accomplish, is built through awareness of models in and outside the school. Verbal persuasion occurs when leaders and others affirm what an individual is attempting along with what he or she is capable of doing. The last source of efficacy is physical-emotional states, or one's state of mind-body-spirit to accomplish the task at hand. Taken together, the four antecedents work to shape one's sense of efficacy. By paying particular attention to a principal's development of mastery, making comparisons that suggest competency with other schools, providing positive and meaningful feedback, and establishing good building-superintendent relations, superintendents can create a cadre of principals assured in their instructional leadership.

Louis et al. (2010) showed high performing districts had district leaders who communicated their belief in staff's ability to improve instruction and student learning; created consensus on the purpose of professional practice, communicated clear expectations for building leaders and ensured appropriate professional development to meet the expectations, emphasized good communications between and among teachers and principals, and structured support for all organizational entities (p. 197). Principals' sense of self efficacy increases when principals perceive support from their superintendents. Lucas (2008) found a significant positive relationship between superintendent support and elementary principal reading education leadership efficacy (p. 92). Reform, progress, reorganization, or any other descriptor for change requires nurturing a leader's internal drive, and effective superintendents knowingly develop their building leaders' sense of efficacy with success in mind. Through collaboration,

inspiration, feedback, clear expectations, and focused professional development, superintendents can develop efficacious building leaders who will help realize the vision of districts as CCSS (2010), next generation assessments (Achieve, 2010), and other reforms sweep across the educational arena.

Professional development, feedback, and efficacy.

Research shows professional development, mentoring, successful problem solving experiences, and positive reinforcement from district leaders can impact principals' sense of efficacy (Leithwood and Jantzi, 2008, pp. 505-506). Superintendents who target antecedents that develop a building principal's sense of efficacy can help ensure principals lead confidently and effectively in schools. Bandura (1997) emphasizes individuals need feedback and a sense of direction to persist in their efforts (p. 67). A superintendent's feedback and clarity of expectations regarding mapping can either enhance or erode a principal's sense of efficacy to use maps. Research proves motivation makes a difference in a school leader's goal orientations (McCollum and Kajs, 2007, p. 31). Feedback, collaboration, and clear expectations are essential for a principal's sense of efficacy to use maps.

Most principals have assumed their positions through confidence and perceived abilities to succeed. However, with rapid reforms now facing schools, superintendent direction and professional development of principals in areas such as curriculum mapping are essential to maintain a principal's sense of efficacy. People gain the greatest amount of self-efficacy through acquisition of mastery experiences, and principals will require opportunities to acquire the skills, knowledge, and understandings to experience success.

Thus, superintendents who provide the necessary professional development to principals are most likely to ensure effective leadership and positive school results (Wahlstrom et al., 2010, p. 16). Those principals who are efficacious will seek mastery and goal orientations significantly higher than less confident principals (McCollum & Kajs, 2007). Superintendents can ensure their principals and teachers have the opportunities to develop the essential knowledge and skills necessary to successfully implement school reform.

District leadership and district organizational conditions strongly influence school leaders' sense of collective efficacy (LCE). Collective efficacy is the leader's perception of the staff's ability to impact student learning (Leithwood & Jantzi, 2008, p. 498). In terms of curriculum mapping efforts, how superintendents structure the mapping process and communicate goals and objectives will directly and indirectly affect principals' collective efficacy beliefs. Setting directions, developing people, redesigning the organization, and managing the instructional program are essential leadership practices that affect LCE (Leithwood & Jantzi, 2008, p 521). Effective superintendent leadership practices are those that principals see as supportive and enhancing. For a successful curriculum mapping effort, superintendents will need to target the building principal's sense of collective efficacy by considering the whole organization and setting directions, providing professional development, and monitoring the instructional program.

Resources, collaboration, and efficacy.

Lack of resources in a curriculum mapping effort will compromise a reform process and lower a principal's sense of efficacy. Bandura (1997) states, "Self-efficacious

artisans and athletes cannot perform well with faulty equipment, and self-efficacious executives cannot put their talents to best use if they lack adequate financial and material resources to do so" (p. 68). Adequate resources are imperative for successful, sustained change initiatives, and effective superintendents ensure principals and teachers have the necessary resources for all significant changes, specifically a curriculum mapping project.

Efficacy is also promoted through collaboration, which gives people a sense of direction and control. Collaboration is empowering and ensures communication across many levels and groups within schools. In a study of high school principals, those with the most improved schools perceived a more collaborative relationship with their districts. Principals from the least improved schools felt decision-making was top-down with little collaboration with district office (Bottoms & Fry, 2009, p. ii). Having a sense of control over one's environment is vital to self-assured leadership. Practices of collaboration by leaders have potential consequences that go far beyond the initial decisions made. Unfortunately, collaborative decision-making is not always evident. In a study of how three school district superintendents collaborated in strategic action planning, the lack of collaboration beyond the action planning committee was concerning. The researchers wrote, "What is lost in the retreat from collaborative decision making is a clear understanding of the rationales behind the decisions and a sense of commitment to those decisions" (Brazer, Rich, & Ross, 2010, p. 215). The rigors and stakes of education today are too great to be borne by a lone leader, and collaboration is important for principals to have a sense of control and a concomitant efficacious nature to use curriculum maps as tools for change.

Superintendents can inspire or inhibit principals' motivations and goals for a mapping project by the nature of their collaborations and feedback with principals, and how they communicate expectations to principals. Ford (1992) writes, "Motivational interventions that do not respect the goals, emotions, and personal agency beliefs that a person brings to a situation may produce short-term effects, but in the long run they are likely to fail or backfire" (p. 202).

The power of self-efficacy is not limited to adults in the educational setting. Studies have shown the power of efficacy on student performance with students performing better academically when they have experienced success. Students who had a positive mindset about academics were more confident and likely to achieve than those without such a mindset (Marsh & Craven, 2006, p. 133). In a similar vein, principals who have a positive mindset about their roles as building leaders are more apt to lead confidently and successfully than those without such feelings.

Efficacious principals are essential ingredients to any major reform initiative, particularly changes involving the use of curriculum maps. However, building principals are faced with a daily barrage of events and situations that can wear down even the most skilled and adroit leaders. Effective superintendents recognize the importance of a principal's sense of efficacy, and provide the necessary support, inspiration, structure, and targeted professional development to their building level administrators to ensure success of district goals and objectives. In turn, building principals create a can-do school culture that is open to collaborative decision-making and focused on student learning, regardless of the obstacles and barriers that may arise. Efficacy is an intangible element

that can either sustain or squelch a change effort, and any curriculum mapping initiative is more likely to succeed under an efficacious building leader.

Superintendents require building principals who persevere through periods of educational reform, who adopt a proactive mindset and set achievable goals others might consider lofty, who bounce back from setbacks, who recognize that greater efforts on their part lead to successes, and who have the confidence and courage to manage stress and the daily rigors with enthusiasm. A principal's sense of efficacy is vitally important to student success. District leaders must ensure they support and collaborate with building principals and develop their sense of efficacy to effectively use curriculum maps to implement and sustain change initiatives.

Summary

Research has shown lasting change initiatives occur when superintendents collaboratively focus on areas of curriculum, instruction and assessments with their building principals. Building principals who use curriculum maps as boundary objects have the tools to cross communities of practice, bridging the gap between teacher and administration. Boundary practices allow principals to get at the classroom level of instruction, having greater influence on informing change initiatives within their buildings. Ultimately, building principals need to be confident in their efforts, and knowledgeable superintendents develop their principal's sense of efficacy through professional development, clear goals and expectations, affirmations for good work, motivation, and open, two-way lines of communication.

School reform is likely in this era of change when the proper external and internal pieces are in place. Leadership characteristics of superintendents and building principals that include attention to goal setting, accountability, professional development, collaboration, curriculum, instruction, and assessment manifest themselves in district and school improvement. Curriculum maps are effective boundary objects for instructional leadership which are currently underutilized by superintendents and building principals; a building principal's sense of self-efficacy, an important part of leadership, can be shaped by effective superintendent leadership. Such leadership leads to successful implementation of school reforms and practices.

Chapter III: Methodology

This quantitative study explored the impact of superintendents' actions and support for curriculum reform initiatives on middle school building principals' abilities to lead and sustain change, and focused on how such efforts directly and indirectly affect principals' leadership practices and sense of efficacy. More specifically, this research looked at the strength of the relationship between superintendent support for curriculum mapping and middle school building principals' efficacious use of curriculum maps as a tool for successful change.

Research Questions

There were three research questions in this study:

1. What is the strength of the relationship between superintendent support for curriculum mapping and use of curriculum maps by middle school building principals?

2. What is the strength of the relationship between superintendent support for curriculum mapping and the extent middle school principals use curriculum maps as boundary objects?

3. What is the strength of the relationship between superintendent support for curriculum mapping and middle school building principals' sense of efficacy to use maps?

Research Design

A quantitative approach for this study was selected based on research study descriptions given in the literature. Gall, Gall, and Berg (2003) state, "Positivist research is grounded in the assumption that features of the social environment constitute an independent reality and are relatively constant across time and settings. Positivist

researchers develop knowledge by collecting numerical data on observable behaviors of samples and then subjecting these data to numerical analysis" (p. 23). Creswell (2009) writes, "Quantitative research is a means for testing objective theories by examining the relationships among variables" (p. 4). Hallinger and Heck (1996) stressed researchers with limited resources should focus on relationships between principal leadership and intervening variables at the building level rather than on school achievement. They wrote, "In particular, researchers should focus greater attention on uncovering the relationship between principal leadership and those mediating variables that we now believe influence student achievement" (p. 35-36). In this study, relationships between superintendent and building principal as they pertain to curriculum maps was the focus.

The unit of analysis was New York State public school building principals with responsibility for students in grade seven. Superintendent support for curriculum mapping was the independent variable. Dependent variables included the extent of curriculum map use by principals, use of maps by principals as boundary objects, and principals' sense of efficacy to use maps as instructional leaders. Moderating variables that could potentially impact study results included principals' years of experience, principals' gender, school size, and percent of students eligible for free or reduced lunch. This cross-sectional study compared the relationship of the independent variable with each dependent variable. Therefore, a quantitative study was chosen, driven primarily by cross-sectional data collected from a self-administered, multi-measure tool. The Internet-accessed survey instrument included a series of demographic questions about the principal and his/her school, an operational checklist to determine indicators of superintendent support for curriculum mapping, and a two-part principal perception

section. Part A measured principal's sense of efficacy to use curriculum maps, and Part B measured principal's perceptions pertaining to superintendent support, and value/use of maps in building leadership practices, including those pertaining to boundary objects.

Target Population

All New York State public middle school principals and principals in schools containing grade seven were the initial target population for this study. Although data contain responses from principals with diverse grade levels, the focus on seventh grade is a determinant factor because of the call for secondary school research on leadership and teaching (Anfara, 2009; Louis et al., 2010). A middle school population was chosen since it represents school leaders responsible for a diverse, transitional student population where subject area curricula are more focused than in elementary settings in which learning to read and reading to learn are priorities at the primary and upper elementary levels, respectively. Another reason for choosing the middle level population is that departmentalization is more likely to occur at the middle level than in elementary schools, and yet there still exists opportunity for cross curricular decision making through grade level teams.

In the 2010-2011 school year, there were 4,775 New York State public school principals and 1,332 met the criteria of having 7th grade within their building. Principals and their email addresses were identified using New York State public school principal data accessed from the New York State Education Department via the New York State Middle School Association (NYSMSA). NYSMSA supported this study and provided the list of emails filtered to include only those principals with responsibility for 7th grade. The entire population of New York State Public School Principals at the middle level was

targeted in this study rather than the smaller population collected using a random or alternate sampling method. By conducting such a census, data collected would be more representative of the target population.

The study was originally designed to include survey data from all schools both in and outside of New York City. However, the unique relationship between superintendents and principals within New York City Schools required a revised design. New York City principals work with Children First Networks (CFN) (NYCDOE, n.d.) rather than with superintendents regarding curriculum and other matters of student learning. CFNs work directly with building principals to create personalized services that meet the needs of each school. Consequently, survey data were filtered to remove all schools with enrollments greater or equal to 6,001 students (all 33 New York City School Districts have enrollments greater than 6,001 students). Using the 2009-2010 New York State Report Card Database (NYSTART, n.d.) for student enrollment, 699 schools fell within the criterion of enrollments greater or equal to 6,001 students, of which 503 (88%) were within New York City. Table 1 shows sample population calculations.

Table 1

New York State Principal Target Population Calculations

Principals	Total
New York State Principals	4,775
New York State Public School Principals with Grade 7	1,332
Targeted Principals in Districts of $\geq$ 6,001 Students	699
Targeted Principals in Districts of $\leq$ 6,000 Students	633
Emails Returned from Principals (Invalid)	56
Emails Successfully Sent to Principals	1,276

Note. Data from 09/10 New York State Report Card Database

Data Collection

Survey results from respondents were collected between January 31, 2011 and March 14, 2011 (See Table 2). Emails were sent to 1,332 principals letter describing the survey's purpose and a link to the online survey site. Of the 1,332 emails, 56 were returned as invalid email addresses, leaving the initial target population size as 1,276.

Table 2

Survey Disseminations

Correspondence	Date	Responses to Date	Change
Original Email Request	1/31/11	0	0
1st Email Reminder	2/8/11	138	138
2nd Email Reminder	2/22/11	183	45
NYSMSA Board Request	3/2/11	227	44
Final Email Reminder	3/7/11	234	7
Final Count	3/14/11	298	64

A total of 298 principals initiated responses to the survey tool, representing a response rate of 23%. Of that number, 246 completed the survey; 52 respondents, representing 17.4% of the target population, reported no curriculum maps in their buildings, which by skip-logic circumvented the remaining survey questions leading to 52 not fully completed surveys. Subtracting respondents without curriculum maps from the population of completed surveys left 194 respondents who completed all survey sections. When the 30 schools with district enrollments of 6,001 or greater students were filtered out, 164 respondents (schools from districts $\leq$ 6,000 students) representing 26% of the total population of such schools completed questions from all survey sections.

Given that 52 respondents had no curriculum maps and did not complete all survey questions due to skip logic, and considering the low response rate of school principals in districts greater than or equal to 6,001 student enrollment, survey completion response rates for principals from districts of 6,000 or fewer students is likely to be higher than 26%.

Introductory emails describing the study were sent to all principals compiled from New York State Report Card Database (NYSTART, n.d.) and NYMSA lists. Each email included a link to the online survey site (SurveyMonkey.com) where principals could complete the survey. To increase response rates, after one week, a second email was sent to all principals thanking those who had completed the survey and reminding those who had not yet completed the survey. Two more reminders were sent to principals over a three-week period thanking those who had taken time to complete the survey and encouraging those who had not done the survey to please do so. The New York State Middle School Association's Board of Directors also assisted by reminding their regional members to complete the surveys.

Anonymity could not be guaranteed, but participants were assured in the survey letter that all data were confidential and they could opt out of the survey at any time without penalty or loss of benefit to themselves. Participants were also assured there were no known risks associated with this study with no names or schools identified in the results. The relevance of the research was tied to CCSS (2010), RTTT (USDOE, 2009), and support from NYSMSA. Participants were also informed that study results would be presented as a feature session at the 2011 Annual New York State Middle School Association Conference in Saratoga Springs, New York.

Instrumentation

The survey instrument was a seven-section, multi-measure survey tool created by the researcher to address the study's three research questions. Alreck and Settle (2004) were used extensively to create the instrument survey questions and scales. Included in the survey were six questions on efficacy drawn from the work of Drs. Megan Tschannen-Moran and Chris Gareis (2004). Section One: Survey Introduction was a brief introduction to the survey with general definitions of curriculum maps and curriculum mapping, and included a description of benefits to the education leadership field. Section Two: Principal Demographic Information contained five questions on demographic data regarding school level, years of experience as a building principal, years of experience in present school, and general information on curriculum maps in the district. If there were no curriculum maps in district (52 schools responded curriculum maps did not exist in their districts), the respondents were taken to the exit page and thanked for their time. Section Three: Superintendent Support for Curriculum Maps operationalized the independent variable of superintendent support for curriculum mapping and had 15 questions with Yes, No, or Unsure response options. Independent variables were identified from section three items in the areas of Professional Development (Q 11, 12, 13), Superintendent Goals and Expectations (Q 1, 3, 4, 6, 8, 14, 15), and Collaborative Decision Making (Q 1, 3, 9, 11) to delve deeper into superintendent support. Some item examples include:

Curriculum maps are addressed in Strategic Action Plan and/or District Goals;

Curriculum maps are mentioned in newsletters from superintendent; and

Curriculum maps are addressed by the superintendent as part of principal evaluation process.

Section Four: Principal Perception Survey Part A had six questions taken from Tschannen-Moran and Gareis' (2004) study of tools for measuring principal self-efficacy, described in this study as Principal Efficacy 1. Their instrument contained three sections with six items each in Management, Instruction, and Moral leadership (p. 580). Drawing from the work of Bandura (1997), Drs. Megan Tschannen-Moran and Chris Gareis (2004) used a nine-point Likert scale and the language "can" versus "will" in the stem statement (i.e. In your current role as building principal, to what extent can you….). According to Bandura (1997) "Can is a judgment of capability; will is a statement of intention" (p. 43). Approval to use the instructional component of the Tschannen-Moran and Gareis tool was granted with the understanding that the nine-point scale would be used, reflecting the recommendations of Bandura (1997), and that the stem statement would be modified to include **to what extent can you *use curriculum maps to…***

Section Five: Principal Perception Part B had 21 questions and a four-point Likert Scale ranging from Strongly Disagree to Strongly Agree that addressed principals' perceptions regarding superintendent support and the value/use of maps in building leadership practices. A four-point scale was chosen since it prevented neutrality and forced respondents to either agree or disagree with an item. Item examples include:

I use curriculum maps to collaborate with teachers in my building;

Curriculum maps bring me closer to the classroom level;

I receive positive feedback from my superintendent on my use of maps;

My building's curriculum maps are aligned to state standards; and

I have time to use curriculum maps.

Questions in Section Five: Principal Perception Part B were designed by the researcher to address either principal's use of maps (Questions 1, 5, 6, 9, 13-15, 17-19, 21), use of maps as boundary objects (Questions 2, 4, 7, 8, 10, 16), or principal self-efficacy, described in this study as Principal Efficacy 2 (Questions 3, 11, 12, 20). Section Six: Principal Demographic Information Continued contained eight additional questions on demographic information about district size, percent of students eligible for free or reduced lunch, gender, age, and also questions on whether curriculum maps existed for each grade level or subject and if the district used an electronic mapping program. Section Seven and a comments box completed the survey.

Variables

Superintendent support for curriculum mapping was the independent variable for all three research questions. For research question one, the dependent variable was use of curriculum maps by building principals; dependent variables for research questions two and three were building principals' use of curriculum maps as boundary objects, and principals' efficacy 1 and 2, respectively. Moderating variables were those demographic questions pertaining to building principal or school characteristics.

Data Validity and Reliability

To ensure survey tool validity, three current superintendents, two middle school building principals, and one retired administrator were consulted for feedback regarding indicators of superintendent support for curriculum maps, and evidences of building principals' use of maps. In addition, the researcher had been in contact by telephone and email with Dr. Rick Dunlap, who co-authored the book, *An Educational Leader's Guide*

to Curriculum Mapping: Creating and Sustaining Collaborative Cultures (Hale & Dunlap, 2010); and by email with Dr. Megan Tschannen-Moran. Dr. Dunlap made recommendations and suggestions regarding principal perception questions. Dr. Tschannen-Moran allowed use of the instructional component of the principal self efficacy scale co-developed with Dr. Gareis and also responded to numerous queries. In all, eight experts in the field of education provided useful information that helped craft the instrument.

Following survey revisions, an additional test for validity was done through a pilot by 14 current elementary building principals who provided feedback on quality of survey and time for completion. More adjustments were made and the survey was then given to five sitting administrators presently enrolled in an educational leadership doctoral program for their input regarding quality of questions and time needed to complete the tool. All input was used to make revisions in tool format and to reword confusing or poorly worded items.

Survey responses from the pilot study group were entered into an excel data file and downloaded into the Statistical Package for the Social Sciences (IBM-SPSS) to code numerical data and test analysis methodologies. Final revisions to survey included reduction in survey items and reframing questions to ensure greater "focus, brevity, and clarity" (Alreck & Settle, 2004, p. 89).

Cronbach's Alpha analyses of unfiltered data were conducted for all sections to determine internal consistency, including internal consistency for Section Five: Principal Perception Part B subsections for principal's use of maps, use of maps as boundary objects, and principals' sense of efficacy to use maps. Table 3 shows Alpha values for the

main variables ranged from .80 for Section Three to .943 for Section Five Part B, suggesting good internal reliability (Muijs, 2004).

Table 3

Cronbach's Alpha Reliability Values

Variable	Survey Section	Questions	Cronbach's Alpha
Superintendent Support	Section Three	All	0.80
Principal's Use of Maps	Section Five Part B	1, 5, 6, 9, 13-15, 17-19, 21	0.88
Use of Maps as Boundary Objects	Section Five Part B	2, 4, 7, 8, 10, 16	0.86
Principal efficacy 1	Section Four Part A	All	0.88
Principal efficacy 2	Section Five Part B	3, 11, 12, 20	0.94

Data Analysis and Interpretation

Descriptive statistics were conducted after downloading survey results from SurveyMonkey then uploading them as an excel file into SPSS. Means, standard deviations, frequency counts and percentages were calculated for all variables and items within the survey, and Cronbach's Alpha was run for each survey section. Spearman's rho correlations were executed to show strength of the relationships between variables, and a multiple linear regression was conducted to predict the impact of multiple variables on principal efficacy. Spearman's rho was chosen for bivariate correlations due to the scalar nature of survey respondents' data. SPSS descriptive and statistical analyses were informed using *Introduction to SAS* (UCLA, n.d.).

Research question one was tested to determine the strength of the relationship between superintendent support for curriculum mapping and building principal's use of maps through a Spearman's rho correlation. Superintendent support was operationalized by averaging the sum of "yes" responses on the 15 questions in Section Three: Superintendent Support for Curriculum Mapping. Superintendent Support for Curriculum Mapping was correlated with average values for curriculum map use questions (Questions 1, 5, 6, 9, 13-15, 17-19, 21) from Section Five: Principal Perception Survey Part B. Examples of curriculum map use questions include

I have time to use curriculum maps;

I do my best to support staff in their use of curriculum maps; and

Curriculum maps help me improve student results in my school.

Research question two tested strength of the relationship of superintendent support for curriculum maps to principal's use of maps as boundary objects using a Spearman's rho correlation by using the same superintendent support value from research question one and correlating it with the average values for curriculum maps as boundary objects questions (Questions 2, 4, 7, 8, 10, 16) from Section Five: Principal Perception Survey Part B. Examples of curriculum map use as boundary objects questions include

Curriculum maps bring me closer to the classroom level;

Curriculum maps affect my influence over teachers; and

Curriculum maps affect my ability to share leadership with teachers.

Research question three tested strength of the relationship of superintendent support for curriculum maps to principal's sense of efficacy using a Spearman's rho correlation by using the same superintendent support value from research question one

and correlating it with the two values for principal self-efficacy: Principal Efficacy 1 representing all six questions from Section Four: Principal Perception Survey Part A; and Principal Efficacy 2 using questions 3, 11, 12, and 20 from Section Five: Part B. Examples of Principal Efficacy 2 questions include

I use curriculum maps effectively as a building leader;

I am comfortable discussing curriculum maps with teachers; and

I have experienced success using curriculum maps in my leadership practices.

To delve deeper into forms of superintendent support for each research question, items were selected from Section Three: Superintendent Support for Curriculum Mapping to measure strength of the relationship of Professional Development (Q 11, 12, 13), Superintendent Goals and Expectations (1, 3, 4, 6, 8, 14, 15), and Collaborative Decision Making (Q 1, 3, 9, 11) on each dependent variable. Additional Spearman's rho correlations were run to study relationships among the three dependent variables and superintendent support, and to explore relationships with principal and school demographics. A final Spearman's rho correlation was conducted to measure the relationship between Principal Efficacy 1 in Section Five Part A with Principal Efficacy 2 from questions 3, 11, 12, and 20 in Section Five Part B.

Delimitations.

This study only targeted principals whose buildings included grade seven. Building principals without seventh grade were not considered. An additional delimitation was not measuring the role of deputy superintendents or other central office personnel in supporting curriculum maps. The research was limited to curriculum maps and did not include other curriculum documents such as pacing guides or scope and

sequence documents. One other delimitation was excluding the impacts of superintendent support on assistant principals and department heads.

Chapter IV: Results

CCSS (2010), next generation assessments (Achieve, 2010), RTTT (USDOE, 2009), and other reform pressures were the impetus for this study's exploration of relationships between superintendent support for curriculum mapping and building principals' sense of efficacy to use maps as instructional leaders. A target population of 633 New York State public school principals with responsibility for grade seven in districts of ≤ 6,000 students was surveyed to determine principals' perceptions regarding leadership and curriculum mapping. Data collected were used to address the following research questions:

1. What is the strength of the relationship between superintendent support for curriculum mapping and use of curriculum maps by middle school building principals?

2. What is the strength of the relationship between superintendent support for curriculum mapping and the extent middle school principals use curriculum maps as boundary objects?

3. What is the strength of the relationship between superintendent support for curriculum mapping and middle school building principals' sense of efficacy to use maps?

Chapter four provides a detailed explanation of sample respondents, and how and why districts with enrollments greater than 6,001 students were filtered out of the data. The chapter also includes (a) a profile of the sample respondent population, (b) a multiple linear regression test for determining impact of predictor variables on principal efficacy, (c) statistical results for each research question, (d) correlations of demographic variables with average curriculum map use, use of maps as boundary objects, and principal

efficacy, (e) correlations pertaining to superintendent support for professional development, goals and expectations, and collaboration, and (f) a summary of findings.

Sample Respondents Adjustment

An unexpected development occurred during the data acquisition stage that led to adjustments in the target population. Midway during the survey data acquisition period, one respondent added a remark in the comments section stating he worked in New York City and his data would be not very useful since New York City principals do not interact with district superintendents. Instead, principals work with Children First Network (NYCDOE, n.d.) for their professional development and curricular needs. This study sought understanding on the relationship between superintendent and building principals in the areas of curriculum leadership and change. Given the information New York City building principals do not interact with superintendents but with Children First Networks, New York City principals' responses would add an element of uncertainty and compromise any generalizations or statistical measures. Thus, districts with enrollments of 6,001 students or greater were filtered from the data (all 33 New York City School Districts have enrollments greater than 6,001 students). Due to the structure of the survey instrument, data to the response, *Curriculum maps have been created in my district,* were unfiltered.

Using the 2010 New York State Report Card Database (NYSTART, n.d.) for student enrollment, 699 schools fell within the criterion of enrollments greater or equal to 6,001 students, of which 503 (88%) were within New York City. These responses were removed from the results. For the remaining responses, 52% were from districts with

enrollments of ≤ 1,000 students. Table 4 shows general New York State principal population information and sample population data by district size.

Table 4:

New York State Principals Filtered Target Population Calculations

Principals	Total
New York State Principals	4,775
New York State Public School Principals with Grade 7	1,332
Principals in Districts of ≥ 6,001 Students	699
Targeted Principals in Districts of ≤ 6,000 Students	633
Emails Returned from Principals (Invalid)	56
Emails Successfully Sent to Principals	1,276
Respondents Who Completed Survey	164

Note. Data from 09/10 New York State Report Card Database

Study Respondents

The target population included 633 New York State public school principals with responsibility for grade seven in districts of ≤ 6,000 students; of which 164 respondents finished the survey for a total completion rate of 26%. Given that 52 respondents had no curriculum maps (19.4% of all respondents) and did not complete all survey questions due to skip logic, their responses were not included in the 26% of respondents who completed the surveys. Thus, initiated response rates for principals from districts of 6,000 or fewer students is likely to be higher than 26%. Demographic characteristics of the target population are listed in Tables 5-7.

Table 5

Frequency Counts and Percentages of Principal Demographics

Characteristic		Frequency	Percent	Valid Percent	Cumulative Percent
Years as a building principal	1 year	16	9.8	9.8	9.8
	2-7 years	86	52.4	52.4	62.2
	8-14 years	45	27.4	27.4	89.6
	15-21 years	13	7.9	7.9	97.6
	22-29 years	4	2.4	2.4	100.0
	Total	164	100.0	100.0	-
Years as building principal in present school	1-3 years	56	34.1	34.4	34.4
	4-6 years	49	29.9	30.1	64.4
	7-9 years	30	18.3	18.4	82.8
	10-14 years	19	11.6	11.7	94.5
	$\geq$ 15 years	9	5.5	5.5	100.0
	Total	163	99.4	100.0	-
	Missing	1	.6	-	-
Years worked in education field	8-14 Years	40	24.4	24.7	24.7
	15-21 Years	59	36.0	36.4	61.1
	22-29 Years	37	22.6	22.8	84.0
	$\geq$ 30 years	26	15.9	16.0	100.0
	Total	162	98.8	100.0	-
	Missing	2	1.2	-	-
Gender	Female	60	36.6	36.6	36.6
	Male	104	63.4	63.4	100.0
	Total	164	100.0	100.0	-
Age	25-34	11	6.7	6.7	6.7
	35-44	67	40.9	40.9	47.6
	45-54	57	34.8	34.8	82.3
	55 or Older	29	17.7	17.7	100.0
	Total	164	100.0	100.0	-

Table 5 shows principal demographic information. The majority of respondents (62%) had seven or fewer years experience as principals, and nearly 80% had 2-14 years experience. For principals in their present schools, 64% had 1-6 years in their present schools, and 6% had 15 or more years in their present schools. Females comprised 37% of respondents, and 76% of respondents were between 35 and 54 years of age.

Table 6

Frequency Counts and Percentages of School Demographics

Characteristic		Frequency	Percent	Valid Percent	Cumulative Percent
School level	Middle School Grades 6-8	86	52.4	52.4	52.4
	Jr/Sr High School 7-12	27	16.5	16.5	68.9
	Intermediate 5-8	11	6.7	6.7	75.6
	K-8 School	6	3.7	3.7	79.3
	K-12 School	22	13.4	13.4	92.7
	Other School W/Grades 6-8	12	7.3	7.3	100.0
	Total	164	100.0	100.0	-
Total enrollment of district	<500 Students	42	25.6	25.6	25.6
	501-1,000 Students	44	26.8	26.8	52.4
	1,001-1,500 Students	23	14.0	14.0	66.5
	1,501-3,000 Students	29	17.7	17.7	84.1
	3,001-6,000 Students	26	15.9	15.9	100.0
	Total	164	100.0	100.0	-
Percentage of students eligible for free or reduced lunch in school	<10%	19	11.6	11.7	11.7
	10%-19%	33	20.1	20.4	32.1
	20%-29%	22	13.4	13.6	45.7
	30%-39%	20	12.2	12.3	58.0
	40%-49%	32	19.5	19.8	77.8
	50% or Greater	36	22.0	22.2	100.0
	Total	162	98.8	100.0	-
	Missing	2	1.2	-	-

School information is presented in Table 6. Middle schools with grades 6-8 were the largest subgroup (52%) followed by Jr./Sr. high schools and K-12 schools (16% and 13%, respectively). A little over half had total district enrollments under 1,000 students, reflecting the impact of filtering out districts with $\geq$ 6,001 students. Free and reduced lunch (FRL) rates ranged from 12% for FRL $\leq$ 10% to 22% for FRL $\geq$ 50%.

Table 7

Frequency Counts and Percentages of Curriculum Map Use

Characteristic		Frequency	Percent	Valid Percent	Cumulative Percent
Years curriculum maps have been used in district	1-3 years	70	42.7	42.7	42.7
	4-6 years	48	29.3	29.3	72.0
	7-9 years	28	17.1	17.1	89.0
	10 years or longer	18	11.0	11.0	100.0
	Total	164	100.0	100.0	-
Curriculum maps used in every grade of building	Yes	127	77.4	79.4	79.4
	No	33	20.1	20.6	100.0
	Total	160	97.6	100.0	-
	Missing	4	2.4	-	-
Curriculum maps used for every subject in building	Yes	98	59.8	60.1	60.1
	No	65	39.6	39.9	100.0
	Total	163	99.4	100.0	-
	Missing	1	.6	-	-
District electronic mapping program used to store and use maps	Yes	90	54.9	55.6	55.6
	No	72	43.9	44.4	100.0
	Total	162	98.8	100.0	-
	Missing	2	1.2	-	-

Table 7 shows curriculum map data for respondent schools. Note that 17.4% of unfiltered responses were from respondents whose schools did not have curriculum maps. For filtered data, 43% of respondents used maps for 1-3 years, and 11% for 10 years or longer. Seventy seven percent report using maps in every grade of building, and 60% use maps in every subject in building. Fifty five percent used an electronic mapping program to store and use maps.

Survey Results: Frequencies and Descriptive Statistics

Table 8

Percentage of Responses for Superintendent Support Items

Item	Yes	No	Unsure
1. Curriculum maps are addressed in Strategic Action Plan and/or District Goals.	58%	34%	8%
2. Curriculum maps are mentioned in newsletters from superintendent.	28%	59%	13%
3. Superintendent meets with principals to review mapping progress or use of maps at the building level.	38%	60%	2%
4. Curriculum maps are addressed by the superintendent as part of principal evaluation process.	18%	75%	6%
5. Maps are publicized on district webpage.	25%	70%	5%
6. Superintendent expects principals to discuss mapping at faculty meetings.	51%	37%	12%
7. Superintendent informs the board of education about curriculum maps.	49%	26%	25%
8. Superintendent expects curriculum maps to be part of teacher observations.	26%	62%	12%
9. Curriculum maps are used in curriculum renewal meetings.	67%	21%	12%
10. Resources are allocated to curriculum mapping efforts.	82%	15%	3%
11. Professional Development Plan includes curriculum mapping activities.	80%	16%	4%
12. Superintendent ensures professional development opportunities are available for curriculum mapping.	77%	16%	6%
13. Superintendent has participated in curriculum mapping professional development.	40%	38%	21%
14. The superintendent expects EVERY TEACHER TO HAVE curriculum maps.	61%	24%	15%
15. The superintendent expects EVERY TEACHER TO USE curriculum maps.	63%	22%	15%

Note: $n = 164$

Table 8 shows frequency of principal responses for superintendent support from Section Three of the survey instrument. In terms of resources and professional development, 82% of respondents stated resources are allocated for curriculum mapping efforts, and 80% stated curriculum mapping activities are included in the professional development plan. Fifty eight percent of respondents stated curriculum maps are addressed in a strategic action plan and/or district goals, and 25% stated maps are publicized on a district webpage. Regarding accountability, 38% of the principals affirmed that the superintendent meets with principals to review mapping progress or use of maps at the building level, 18% stated curriculum maps are addressed by superintendent as part of principal evaluation process, and 26% felt the superintendent expects curriculum maps to be part of teacher observations. Sixty one percent and 63% of respondents stated the superintendent expects every teacher to have and use curriculum maps, respectively.

Table 9

Descriptive Statistics for Principal Perceptions Section Four (Part A)

Item	Mean	Standard Deviation
1. Improve student learning	6.88	1.68
2. Motivate teachers	5.88	1.81
3. Align curricula to state standards	7.87	1.29
4. Analyze student assessment data	6.66	1.94
5. Promote collaboration among staff	6.94	1.62
6. Manage change in my school	6.46	1.84

Note. Items began with the Stem: "In your current role as building principal, to what extent can you use curriculum maps to….". Responses are based on a nine point Likert Scale ranging from 1 (Not at All) to 9 (A Great Deal).
[a] n=164

Table 9 includes descriptive statistics for principal perceptions Section Four Part A regarding instructional leadership and efficacy. The two highest positive respondent response rates were for item 3; using maps to "Align curricula to state standards," and item 5; "Promote collaboration among staff." The lowest two responses were for item 2; using curriculum maps to "Motivate teachers," and item 6; "Manage change in my school."

Table 10

Percentages for Principal Perceptions Section Four (Part B)

Item	Strongly Agree	Agree	Disagree	Strongly Disagree
1. Curriculum maps help me improve student results in my school.	19%	74%	7%	1%
2. Curriculum maps bring me closer to the classroom level.	18%	64%	17%	1%
3. I use curriculum maps effectively as a building leader.	10%	55%	33%	2%
4. Curriculum maps allow me to have meaningful interactions with teachers.	12%	71%	16%	1%
5. The costs to create/update curriculum maps are a good use of district resources.	26%	65%	7%	2%
6. I have time to use curriculum maps.	9%	47%	38%	7%
7. Curriculum maps affect my influence over teachers.	10%	50%	37%	4%
8. I use curriculum maps to collaborate with teachers in my building.	10%	67%	21%	2%
9. My building's curriculum maps are aligned to state standards.	32%	62%	5%	0%
10. Teachers value the discussions I have with them when I refer to their curriculum maps.	9%	68%	20%	3%
11. I am comfortable discussing curriculum maps with teachers.	20%	64%	15%	1%
12. I know how to use curriculum maps effectively with teachers.	16%	66%	17%	1%
13. My superintendent supports my professional growth in using curriculum maps.	16%	66%	13%	4%
14. Curriculum maps are an important tool for me to move my building forward.	23%	63%	13%	1%
15. My staff has the skills to use curriculum maps effectively.	13%	52%	32%	2%
16. Curriculum maps affect my ability to share leadership with teachers.	12%	68%	19%	1%
17. Curriculum maps will help my school get ready for the new Common Core State Standards.	35%	60%	4%	1%
18. There is sufficient amount of professional development available for staff on curriculum mapping.	15%	39%	40%	5%
19. I do my best to support staff in their use of curriculum maps.	29%	65%	6%	1%
20. I have experienced success using curriculum maps in my leadership practices.	13%	62%	24%	1%
21. I receive positive feedback from my superintendent on my use of maps.	9%	41%	43%	8%

Note. n=164

Table 10 presents frequency of responses for principal perceptions, Section Four Part B. Responses with over 90% of respondents who agreed or strongly agreed with the statements were for item 17; "Curriculum maps will help my school get ready for the new CCSS," item 19; "I do my best to support staff in their use of curriculum maps," item 9; "My building's curriculum maps are aligned to state standards," item 5; "The costs to create/update curriculum maps are a good use of district resources," and item 1; "Curriculum maps help me improve student results in my school."

Responses with 65% or fewer respondents in agreement were item 21; "I receive positive feedback from my superintendent on my use of maps," item 18; "There is sufficient amount of professional development available for staff on curriculum mapping," item 6; "I have time to use curriculum maps," item 7; "Curriculum maps affect my influence over teachers," and item 15; "My staff have the skills to use curriculum maps effectively."

Criterion and Predictor Variables

To determine the impact of superintendent support, curriculum map use, and boundary objects on principal efficacy, a multiple linear regression was conducted.

Table 11

Linear Regression Table for Variables Contributing to Principal Efficacy 1

	B	*SE B*	β
Superintendent Support	.05	.02	.15*
Average Use of Maps	.93	.29	.30**
Boundary Objects	1.04	.26	.36***

Note. Adjusted $R^2 = .47$ ($p<.05$)
*p<.05. **p<.01. ***p<.001

Table 11 shows 47% of the variation in Principal Efficacy 1 can be attributed to the three previous factors, providing theoretical support and value for the elements explored in this research study.

Table 12

Correlations for Superintendent Support, Efficacy, Curriculum Map Use, and Boundary Objects Use

	Item/Scale				
Item/Scale	AVG EFF1	AVG EFF2	SS	CMUse	Boundary Obj
AVGEFF1	1.00				
AVGEFF2	.65**	1.00			
Superintendent Support (SS)	.35**	.37**	1.00		
CMUse	.60**	.78**	.45**	1.00	
BoundaryObj	.60**	.71**	.29**	.69**	1.00

Note. AVGEFF1=Principal efficacy 1; AVGEFF2=Principal efficacy 2; SS=Superintendent Support; CMUse=Use of curriculum maps; BoundaryObj=Use of maps as boundary objects
**p<.01

Table 12 summarizes Spearman's rho correlations of superintendent support, curriculum map use, principal efficacy, and principal's use of maps as boundary objects. Principal efficacy was described in this study as Principal Efficacy 1 from Tschannen-Moran and Gareis' (2004) scale in Section 4 Part A, and Principal Efficacy 2 from selected questions in Section 5 Part B. More detailed individualized item correlations for superintendent support follow each research question. Correlation strength was determined from Cohen's (1988) work on statistical power analysis as weak (r = .1), moderate (r = .3), and strong (r = .5).

Before reviewing each research question, it is interesting to note the strong relationships ($p < .01$) existing for Principal Efficacy 1 and 2 with curriculum map use ($r = .60$ and .78, respectively), and boundary objects use ($r = .60$ and .71, respectively). One other notable relationship is between curriculum map use and boundary objects use ($r = .69$, $p < .01$).

Research Question 1: What is the strength of the relationship between superintendent support for curriculum mapping and use of curriculum maps by middle school building principals?

Research question one was addressed through a series of Spearman's rho correlations. The dependent variable was Average Use of Curriculum Maps, and Average Superintendent Support was the independent variable. Table 12 shows Spearman's rho values for this relationship. Data reveal a significant relationship of moderate strength ($r = .45$, $p < .01$) between superintendent support for curriculum mapping and principal's use of maps. There were no significant relationships between curriculum map use and principals' years of experience or gender.

To delve deeper into this relationship, individual independent variables were selected from Section Three: Superintendent Support for Curriculum Mapping to ascertain impact of Professional Development, Superintendent Goals and Expectations, and Collaborative Decision Making on Average Curriculum Map Use (dependent variable). Tables 13, 14 and 15 show these relationships.

Table 13

Correlations for Superintendent Support Regarding Professional Development and Curriculum Map Use

	Item/Scale			
Item/Scale	11	12	13	CMUse
11. Professional Development Plan includes curriculum mapping activities.	1.00			
12. Superintendent ensures professional development opportunities are available for curriculum mapping.	.38**	1.00		
13. Superintendent has participated in curriculum mapping professional development.	.14	.36**	1.00	
CMUse	.34**	.21**	.07	1.00

Note. CMUse=Use of curriculum maps
**p<.01

Table 13 shows moderate to weak relationships of average curriculum map use with item 11, "Professional development plan includes curriculum mapping activities" ($r = .34$, $p < .01$) and item 12, "Superintendent ensures professional development opportunities are available for curriculum mapping" ($r = .21$, $p < .01$). No significant relationship existed for item 13, "Superintendent has participated in curriculum mapping professional development".

Table 14

Correlations for Superintendent Support Regarding Goals and Expectations and Curriculum Map Use

	Item/Scale							
Item/Scale	CMUse	1	3	4	6	8	14	15
CMUse	1.00							
1. Curriculum maps are addressed in Strategic Action Plan and/or District Goals.	.25**	1.00						
3. Superintendent meets with principals to review mapping progress or use of maps at the building level.	.33**	.29**	1.00					
4. Curriculum maps are addressed by the superintendent as part of principal evaluation process.	.29**	.19*	.35**	1.00				
6. Superintendent expects principals to discuss mapping at faculty meetings.	.40**	.38**	.46**	.28**	1.00			
8. Superintendent expects curriculum maps to be part of teacher observations.	.27**	.25**	.31**	.23**	.39**	1.00		
14. The superintendent expects EVERY TEACHER TO HAVE curriculum maps.	.32**	.25**	.37**	.22**	.42**	.25**	1.00	
15. The superintendent expects EVERY TEACHER TO USE curriculum maps.	.31**	.22**	.36**	.23**	.43**	.26**	.91**	1.00

Note. CMUse=Curriculum Map Use
*p<.05, **p<.01

Table 14 shows that all relationships between superintendent support regarding goals and expectations and average curriculum map use by building principals were significant. Strongest relationships of moderate strength were for item 6, “Superintendent expects principals to discuss mapping at faculty meetings” ($r = .40$, $p < .01$); item 3,

"Superintendent meets with building principal to review mapping progress at the building level" (r = .33 p < .01); item 14, "Superintendent expects every teacher to have curriculum maps" (r = .32, p < .01); and item 15, "Superintendent expects every teacher to use curriculum maps" (r = .31, p < .01).

Table 15

Correlations for Superintendent Support Regarding Collaboration and Curriculum Map Use

	Item/Scale				
Item/Scale	CMUse	1	3	9	11
CMUse	1.00				
1. Curriculum maps are addressed in Strategic Action Plan and/or District Goals.	.25**	1.00			
3. Superintendent meets with principals to review mapping progress or use of maps at the building level.	.33**	.29**	1.00		
9. Curriculum maps are used in curriculum renewal meetings.	.16*	.29**	.18*	1.00	
11. Professional Development Plan includes curriculum mapping activities.	.34**	.19*	.20**	.26**	1.00

Note. CMUse=Curriculum Map Use
*p<.05, **p<.01

Table 15 demonstrates the relationships between superintendent support through collaboration and average curriculum map use by building principals were significant for all areas. Strongest relationships of moderate to weak strength were for item 11, "Professional development plan includes curriculum mapping activities" (r = .34, p < .01); item 3, "Superintendent meets with principals to review mapping progress or use of

maps at building level" ($r = .33$, $p < .01$); and item 1, "Curriculum maps are addressed in strategic action plan and/or district goals" ($r = .25$ $p < .01$).

Average curriculum map use by building principals and superintendent support for curriculum mapping had a moderate, significant relationship with one another. Superintendent support in the form of professional development was significantly related to curriculum map use by building principals except for item 13, "Superintendent participates in curriculum mapping professional development". In the area of goals and expectations, all items were significantly related to average curriculum map use with the strongest value for item 6, "Superintendent expects principal to discuss mapping at faculty meetings". Superintendent support in the form of collaboration was significantly related to average curriculum map use for all items. There were no significant relationships between curriculum map use and principals' years of experience or gender.

Research Question 2: What is the strength of the relationship between superintendent support for curriculum mapping and the extent middle school principals use curriculum maps as boundary objects?

Research question two was addressed through a series of Spearman's rho correlations. The dependent variable was Average Curriculum Map Use as Boundary Objects, and Average Superintendent Support was the independent variable. Table 12 shows Spearman's rho values for this relationship. Data reveal a significant relationship of weak to moderate strength between superintendent support for curriculum mapping and principal's use of maps as boundary objects ($r = .29$, $p < .01$). There were no significant relationships between curriculum map use as boundary objects and principals' years of experience or gender.

To delve deeper into this relationship, individual independent variables were selected from Section Three: Superintendent Support for Curriculum Mapping to ascertain impact of Professional Development, Superintendent Goals and Expectations, and Support on Collaborative Decision Making on Average Curriculum Map Use as Boundary Objects (dependent variable). Tables 16, 17, and 18 show these relationships.

Table 16

Correlations for Superintendent Support Regarding Professional Development and Boundary Objects Use

	Item/Scale			
Item/Scale	BoundaryObj	11	12	13
BoundaryObj	1.00			
11. Professional Development Plan includes curriculum mapping activities.	.28**	1.00		
12. Superintendent ensures professional development opportunities are available for curriculum mapping.	.01	.38**	1.00	
13. Superintendent has participated in curriculum mapping professional development.	-.01	.14	.36**	1.00

Note. BoundaryObj=Use of maps as boundary objects
**p<.01

Table 16 shows a significant, weak to moderate relationship for principal's use of maps as boundary objects and item 11, "Curriculum mapping activities in the professional development plan" ($r = .28$, $p < .01$). There were no significant relationships to item 12, "Superintendent ensures availability of professional development activities",

or item 13, “Superintendent has participated in curriculum mapping professional development”.

Table 17

Correlations for Superintendent Support Regarding Goals and Expectations and Boundary Objects Use

	Item/Scale							
Item/Scale	Boundary Obj	1	3	4	6	8	14	15
BoundaryObj	1.00							
1. Curriculum maps are addressed in Strategic Action Plan and/or District Goals.	.19*	1.00						
3. Superintendent meets with principals to review mapping progress or use of maps at the building level.	.11	.29**	1.00					
4. Curriculum maps are addressed by the superintendent as part of principal evaluation process.	.13	.19*	.35**	1.00				
6. Superintendent expects principals to discuss mapping at faculty meetings.	.25**	.38**	.46**	.28**	1.00			
8. Superintendent expects curriculum maps to be part of teacher observations.	.26**	.25**	.31**	.23**	.39**	1.00		
14. The superintendent expects EVERY TEACHER TO HAVE curriculum maps.	.19*	.25**	.37**	.22**	.42**	.25**	1.00	
15. The superintendent expects EVERY TEACHER TO USE curriculum maps.	.20**	.22**	.36**	.23**	.43**	.25**	.91**	1.00

Note. BoundaryObj=Use of maps as boundary objects
*p<.05, **p<.01

Table 17 shows items of superintendent support regarding goals and expectations and use of maps as boundary objects by building principals were weakly related for item 6, “Superintendent expects principals to discuss mapping at faculty meetings” (r = .25, p

< .01); item 8, “Superintendent expects maps to be part of teacher observations” (r = .26, p < .01); and items 14 and 15, “The superintendent expects every teacher to have and to use maps”, respectively (r = .20, p < .01, r = .19, p < .01).

Table 18

Correlations for Superintendent Support Regarding Collaboration and Boundary Objects Use

	Item/Scale				
Item/Scale	1	3	9	11	BoundaryObj
1. Curriculum maps are addressed in Strategic Action Plan and/or District Goals.	1.00				
3. Superintendent meets with principals to review mapping progress or use of maps at the building level.	.29**	1.00			
9. Curriculum maps are used in curriculum renewal meetings.	.29**	.18*	1.00		
11. Professional Development Plan includes curriculum mapping activities.	.19*	.20**	.26**	1.00	
BoundaryObj	.19*	.11	.15	.28**	1.00

Note. BoundaryObj=Use of maps as boundary objects
*p<.05, **p<.01

Table 18 shows a weak to moderate relationship exists between superintendent collaboration and boundary object use for item 11, “Professional development plan includes curriculum mapping activities” (r = .28, p < .01). Item 3, “Superintendents meet with principals to review mapping progress or use of maps at the building level,” and item 9, “Curriculum maps are used in curriculum renewal meetings” were not significantly related to principal’s average use of maps as boundary objects.

Use of curriculum maps as boundary objects by building principals and superintendent support for curriculum mapping had a weak, significant relationship. Superintendent support in the form of professional development had a weak significant

relationship to use of curriculum maps as boundary objects for item 11, "Professional development plan includes curriculum mapping activities".

Relationships between superintendent support for curriculum maps in the form of goals and expectations and use of maps as boundary objects were mixed. Moderate relationships existed for item 6, "Superintendent expects principals to discuss curriculum maps at faculty meetings"; and item 8, "Maps are expected to be part of teacher observations". Weak relationships existed for item 1, "Maps are addressed in strategic action plan and/or district goals"; item 14, "Every teacher is expected to have curriculum maps"; and item 15, "Every teacher is expected to use curriculum maps". No relationships existed for item 3, "Reviewing mapping progress or use of maps at the building level"; or item 4, "Maps are addressed by the superintendent as part of the principal evaluation process".

Superintendent support in the form of collaboration was mostly unrelated to principals' use of maps as boundary objects except for item 11, "Professional development plan includes curriculum mapping activities".

There were no significant relationships between curriculum map use as boundary objects and principals' years of experience or gender.

Research Question 3: What is the strength of the relationship between superintendent support for curriculum mapping and middle school building principals' sense of efficacy to use maps?

Research question three was addressed through a series of Spearman's rho correlations. The dependent variables were Principal Efficacy 1 and Principal Efficacy 2, and Average Superintendent Support was the independent variable. Table 12 shows

Spearman's rho values for this relationship. Data show a significant relationship of moderate strength between superintendent support for curriculum mapping and Principal Efficacy 1 and 2 ($r = .35$, $p < .01$, and $r = .37$, $p < .01$, respectively). There were no significant relationships between Principal Efficacy 1 and 2 and principals' years of experience or gender.

To delve deeper into this relationship, individual independent variables were selected from Section Three: Superintendent Support for Curriculum Mapping to ascertain impact of Professional Development, Support on Collaborative Decision Making, and Superintendent Goals and Expectations on Principal Efficacy I and Principal Efficacy II (dependent variables). Tables 19, 20 and 21 show these relationships.

Table 19

Correlations for Superintendent Support Regarding Professional Development and Principal Efficacy

	Item/Scale				
Item/Scale	11	12	13	AVG EFF1	AVG EFF2
11. Professional Development Plan includes curriculum mapping activities.	1.00				
12. Superintendent ensures professional development opportunities are available for curriculum mapping.	.38**	1.00			
13. Superintendent has participated in curriculum mapping professional development.	.14	.36**	1.00		
AVGEFF1	.23**	.03	-.04	1.00	
AVEEFF2	.32**	.14	.03	.65**	1.00

Note: AVGEFF1=Principal efficacy 1; AVGEFF2=Principal efficacy 2
**p<.01

Table 19 shows superintendent support in the form of professional development and Principal Efficacy 1 and 2 were significant and weak-moderately related for item 11, "Professional development plan includes curriculum mapping activities" ($r = .32$, $p < .01$, vs. $r = .23$, $p < .01$). Item 12, "Superintendent ensures professional development opportunities are available for curriculum mapping", had no significant relationship to either form of efficacy.

Table 20

Correlations for Superintendent Support Regarding Goals and Expectations and Principal Efficacy

	Item/Scale								
Item/Scale	AVG EFF1	AVG EFF2	1	3	4	6	8	14	15
AVGEFF1	1.00								
AVGEFF2	.65**	1.00							
1. Curriculum maps are addressed in Strategic Action Plan and/or District Goals.	.33**	.23**	1.00						
3. Superintendent meets with principals to review mapping progress or use of maps at the building level.	.20*	.19*	.29**	1.00					
4. Curriculum maps are addressed by the superintendent as part of principal evaluation process.	.22**	.24**	.19*	.35**	1.00				
6. Superintendent expects principals to discuss mapping at faculty meetings.	.36**	.31**	.38**	.46**	.27**	1.00			
8. Superintendent expects curriculum maps to be part of teacher observations.	.12	.22**	.25**	.31**	.23**	.39**	1.00		
14. The superintendent expects EVERY TEACHER TO HAVE curriculum maps.	.22**	.20**	.25**	.37**	.22**	.42**	.25**	1.00	
15. The superintendent expects EVERY TEACHER TO USE curriculum maps.	.24**	.21**	.22**	.36**	.23**	.43**	.25**	.91**	1.00

Note. AVGEFF1=Principal efficacy 1; AVGEFF2=Principal efficacy 2
*p<.05, **p<.01

Table 20 shows superintendent support in the form of goals and expectations was moderately related to principal efficacy I and II for item 6, "Superintendent expects

principals to discuss mapping at faculty meetings" (r = .36, p < .01, vs. r = .31, p < .01, respectively); and item 1, "Curriculum maps are addressed in strategic action plan or goals" (r = .33, p < .01, vs. r = .23, p < .01, respectively). Weakest relationship existed for item 8, "Superintendent expects maps to be part of teacher observations" (r = .12, vs. r = .22, p < .01, respectively).

Table 21

Correlations for Superintendent Support Regarding Collaboration and Principal Efficacy

	Item/Scale					
Item/Scale	1	3	9	11	AVG EFF1	AVG EFF2
1. Curriculum maps are addressed in Strategic Action Plan and/or District Goals.	1.00					
3. Superintendent meets with principals to review mapping progress or use of maps at the building level.	.29**	1.00				
9. Curriculum maps are used in curriculum renewal meetings.	.29**	.18*	1.00			
11. Professional Development Plan includes curriculum mapping activities.	.19*	.20**	.26**	1.00		
AVG EFF1	.33**	.20*	.20*	.23**	1.00	
AVG EFF2	.23**	.19**	.22**	.32**	.65**	1.00

Note. AVGEFF1=Principal efficacy 1; AVGEFF2=Principal efficacy 2
*p<.05, **p<.01

Table 21 reveals superintendent support in the form of collaboration was significantly related to Principal Efficacy 1 and 2 for all items. Moderately strong relationships were for item 1, "Curriculum maps are addressed in strategic action plans and/or district goals" (r = .33, p < .01, vs. r = .23, p < .01, respectively). Weak

relationship existed for item 11, “Professional Development Plan includes curriculum mapping activities” ($r = .23$, $p < .01$, vs. $r = .32$, $p < .01$, respectively).

Both calculations of principals’ efficacy to use maps had moderate, significant relationships with superintendent support for curriculum mapping. Superintendent support in the form of professional development was significantly related to efficacy to use maps for item 11, “Professional development plan includes curriculum mapping activities”. All other items pertaining to superintendent support through professional development had no significant correlation with efficacy. For goals and expectations, all areas were significantly related to both calculations of efficacy except for item 12, “Superintendent expects curriculum maps to be part of teacher observations”, which was only significantly related to principal efficacy 2. Superintendent support in the form of collaboration was significantly related to both calculations of efficacy for all items. There were no significant relationships between Principal Efficacy 1 and 2 and principals’ years of experience or gender.

Experience, District Enrollment, and Socioeconomic Relationships with Curriculum Map Use, Boundary Objects, and Efficacy

Table 22

Correlations for Principal Experience, School and District Demographics, Curriculum Map Use, Boundary objects, and Principal Efficacy

	Item/Scale							
Item/Scale	2.2	2.3	6.1	6.4	AVG EFF1	AVE EFF2	CM USE	Bnd Obj
2.2. How many years have you been a building principal?	1.00							
2.3. How many years have you been a building principal in your present school?	.71**	1.00						
6.1. What is the total enrollment of your district?	.08	-.01	1.00					
6.4. What is the percent of students eligible for free or reduced lunch in your school?	-.17*	-.14	-.37**	1.00				
AVGEFF1	.05	.02	-.08	.14	1.00			
AVEEFF2	.05	.03	-.08	.19*	.65**	1.00		
BndObj	.01	-.03	-.13	.17*	.60**	.78**	1.00	
CMUse	.02	.02	-.14	.18*	.60**	.71**	.69**	1.00

Note. AVGEFF1=Principal efficacy 1; AVGEFF2=Principal efficacy 2; CMUse=Use of curriculum maps; BndObj=Use of maps as boundary objects
*p<.05, **p<.01

Average curriculum map use was not related to a principal's year of experience, years experience in present school, or district student enrollment (Table 22). A weak

significant relationship did exist for average curriculum map use and item 6.4, "Percent of students eligible for free or reduced lunch" ($r = .18$, $p < .05$). Use of maps as boundary objects was unrelated to a principal's year of experience, years experience in present school, or district student enrollment. A weak significant relationship did exist for use of maps as boundary objects and item 6.4, "Percent of students eligible for free or reduced lunch" ($r = .17$, $p < .05$). Principal Efficacy 1 and 2 were unrelated to a principal's year of experience, years experience in present school, or district student enrollment. A weak significant relationship did exist for Principal Efficacy 2 and item 6.4, "Percent of students eligible for free or reduced lunch" ($r = .19$, $p < .05$). One interesting relationship was the significant, inverse correlation between district enrollment and percent of students eligible for free or reduced lunch ($r = -.37$, $p < .01$).

Relationships Between Professional Development, Goals and Expectations, and Collaboration

Relevant Spearman's rho correlations were run to further understand relationships between superintendent support for professional development, goals and expectations, and collaboration.

Table 23

Correlations Table for Superintendent Expectations and Goals

	Item				
Item	3	6	8	14	15
3. Superintendent meets with principals to review mapping progress or use of maps at the building level.	1				
6. Superintendent expects principals to discuss mapping at faculty meetings.	.46**	1			
8. Superintendent expects curriculum maps to be part of teacher observations.	.31**	.39**	1		
14. The superintendent expects EVERY TEACHER TO HAVE curriculum maps.	.37**	.42**	.25**	1	
15. The superintendent expects EVERY TEACHER TO USE curriculum maps.	.36**	.43**	.25**	.91**	1

**p<.01

Table 23 reveals relationships between superintendent expectations and goals from Section Three. The strongest, significant correlation was for items 14 and 15, "The superintendent expect teachers to have and to use curriculum maps" ($r = .91$, $p < .01$). Moderate correlations existed for item 6, "Superintendent expects principals to discuss mapping at faculty meetings" and item 3, "Superintendent meets with principal to review mapping progress or use of maps at the building level" ($r = .46$, $p < .01$). Item 6 was also moderately and significantly related to items 14 and 15, "Superintendent expects teachers to have and to use maps" ($r = .42$, $p < .01$, and $r = .43$, $p < .01$, respectively).

Table 24:

Correlations for Quality and Sustained Professional Development

	Item				
Item	1	10	11	12	13
1. Curriculum maps are addressed in Strategic Action Plan and/or District Goals.	1				
10. Resources are allocated to curriculum mapping efforts.	0.09	1			
11. Professional Development Plan includes curriculum mapping activities.	.19*	.33**	1		
12. Superintendent ensures professional development opportunities are available for curriculum mapping.	0.1	.32**	.38**	1	
13. Superintendent has participated in curriculum mapping professional development.	0.06	.21**	0.14	.36**	1

*p<.05, **p<.01

Table 24 shows correlations within Superintendent Support items pertaining to quality and sustained professional development. Correlations were generally weak for sustained quality professional development. Strongest correlations were with item 12, "Superintendent ensures professional development opportunities are available for curriculum mapping", and item 11, "Professional development plan includes curriculum mapping activities" ($r = .38$, $p < .01$). Item 12 was also moderately and significantly related to item 13, "Superintendent has participated in curriculum mapping professional development" ($r = .36$, $p < .01$). Other significant moderate correlations are for item 10,

"Resources are allocated to curriculum mapping" with item 11, "Professional development plan includes curriculum mapping activities", and item 12, "Superintendent ensures professional development opportunities are available for mapping" ($r = .33$, $p < .01$, and $r = .32$, $p < .01$, respectively).

There were significant, positive relationships of superintendent support for all three dependent variables.

Summary of Findings

Table 25:

Correlations Summary for Superintendent Support with Dependent Variables

Independent Variable	Survey Section Three Superintendent Items	RQ1 CMU	RQ2 BO	RQ3 PE1	RQ3 PE2
Super Support	All items	**.45****	.29**	**.35****	**.37****
Prof Development	11: PDP includes curriculum mapping activities	**.34****	.28**	.23**	**.32****
Prof Development	12: Super ensures PD opp available for CM	.21**	.01	.03	.14
Prof Development	13: Super has participated in CM PD	.07	-.01	-.04	.03
Goals & Expectations	1: CM are addressed in SAP and/or district goals	.25**	.19*	**.33****	.23**
Goals & Expectations	3: Super meets w/P to review mapping progress or use of maps at building level	**.33****	.11	.20*	.19*
Goals & Expectations	4: CM addressed by super as part of P evaluation	.29**	.13	.22**	.24**
Goals & Expectations	6: Super expects P to discuss mapping at faculty meetings	**.40****	.25**	**.36****	**.31****
Goals & Expectations	8: Super expects CM to be part of teacher observations	.27**	.26**	.12	.22**
Goals & Expectations	14: Super expects every teacher to have CM	**.32****	.19*	.22**	.20**
Goals & Expectations	15: Super expects every teacher to use CM	**.31****	.20**	.24**	.21**
Collab Dec-Making	1: CM are addressed in SAP and/or district goals	.25**	.19*	**.33****	.23**
Collab Dec-Making	3: Super meets w/P to review mapping progress or use of maps at building level	**.33****	.11	.20*	.19*
Collab Dec-Making	9: CM are used in curriculum renewal meetings	.16*	.15	.20*	.22**
Collab Dec-Making	11: PDP includes curriculum mapping activities	**.34****	.28**	.23**	**.32****

Note. Moderate or strong correlations are in boldface. CMU=Use of map by building principal; BO=Use of maps as boundary objects; PE1=Principal efficacy 1; PE2=Principal efficacy 2; CM=curriculum maps; P=Principal
*p<.05, **p<.01

Table 25 shows superintendent support is most strongly related to use of curriculum maps by building principals ($r = .45$, $p < .01$). Superintendent support for curriculum mapping is less strongly related to building principals' sense of efficacy 1 and 2 to use maps ($r = .35$, $p < .01$, and $r = .37$, $p < .01$). The weakest relationship was with principals' use of maps as boundary objects ($r = .29$, $p < .01$).

Use of curriculum maps by building principals had the most significant positive relationship with superintendent support for curriculum mapping. For the three forms of superintendent support, goals and expectations had the strongest relationships with curriculum map use. The most robust relationship was for superintendents' expectation that principals would discuss curriculum mapping at faculty meetings. Principals' use of maps as boundary objects had the weakest correlations to superintendent support. For correlations of the three forms of superintendent support, only goals and expectations had two items of moderate strength with boundary object use. Principals' efficacy to use maps had a small number of items moderately related to superintendent support with the strongest for goals and expectations in which superintendent expects principals to discuss mapping. All three forms of superintendent support had at least one item moderately related to principal efficacy to use maps.

Referring back to Table 12, there were significant, strong positive relationships among the variables; particularly between average curriculum map use and Principal Efficacy 2 ($r = .78$, $p < .01$); average boundary objects and Principal Efficacy 2 ($r = .71$, $p < .01$); average boundary objects and average curriculum map use ($r = .69$, $p < .01$); and Principal Efficacy 1 and II ($r = .65$, $p < .01$). Principal Efficacy 1 had moderately strong

and significant relationships to average curriculum map use ($r = .60$, $p < .01$) and average boundary objects ($r = .60$, $p < .01$), though not as strong as Principal Efficacy 2.

For demographic items, all three dependent variables were unrelated to principal's year of experience, years experience in present school, or district student enrollment. Weak, significant relationships did exist for the three variables and percent of students eligible for free or reduced lunch.

In Section Four Part A, principals' perceptions regarding their efficacy to use curriculum maps in their instructional leadership, the two highest positive respondent response rates were for item 3, using maps to align curricula to state standards (Mean = 7.87), and item 5, using maps to promote collaboration among staff (Mean = 6.94). The lowest two responses were for item 2, using maps to motivate teachers (Mean = 5.88) and item 6, using maps to manage change in my school (Mean = 6.46).

Table 26

Summary of Other Notable Findings

Survey Section	Item Statement	Percent Agree
3	Item 10: resources are allocated for curriculum mapping efforts	82%
3	Item 11: Professional development plan includes curriculum mapping activities	80%
3	Item 15: The superintendent expects EVERY TEACHER to use curriculum maps	63%
3	Item 14: The superintendent expects EVERY TEACHER to have curriculum maps	61%
3	Item 1: Curriculum maps are addressed in strategic action plan and/or district goals	58%
3	Item 3: Superintendent meets with principals to review mapping progress or use of maps at the building level	38%
3	Item 8: Superintendent expects curriculum maps to be part of teacher observations	26%
3	Item 4: Curriculum maps are addressed by the superintendent as part of principal evaluation process	18%
5B	Item 17: Curriculum maps will help my school get ready for the new Common Core State Standards	95%
5B	Item 19: I do my best to support staff in their use of curriculum maps	94%
5B	Item 9: My building's curriculum maps are aligned to state standards	94%
5B	Item 1: Curriculum maps help me improve student results in my school	93%
5B	Item 5: The costs to create/update curriculum maps are a good use of district resources	91%
5B	Item 15: My staff have the skills to use curriculum maps effectively	65%
5B	Item 7: Curriculum maps affect my influence over teachers	60%
5B	Item 6: I have time to use curriculum maps	56%
5B	Item 18: There is sufficient amount of professional development available for staff on curriculum mapping	54%
5B	Item 21: I receive positive feedback from my superintendent on my use of maps	50%

It is important to note that 17% of respondents reported their districts have not created curriculum maps.

Table 26 highlights other relevant findings. In terms of superintendent support for professional development, 82% of respondents stated resources are allocated for curriculum mapping efforts, and 80% stated curriculum mapping activities are included in the professional development plan. However, only 58% of respondents stated curriculum maps are addressed in strategic action plan and/or district goals.

Regarding superintendent goals and expectations, 38% of principals affirmed that superintendents meet with them to review mapping progress or use of maps at the building level, 18% stated curriculum maps are addressed by the superintendent as part of principal evaluation process, and 26% felt superintendent expects curriculum maps to be part of teacher observations. Sixty one percent and 63% of respondents stated superintendent expects every teacher to have and use curriculum maps, respectively.

Principal perceptions from Section Four Part B with the highest percent of respondents who agreed or strongly agreed with the statements clustered around the value of curriculum maps. Positive perceptions for the value of curriculum maps were found in item 17 (95%-Curriculum maps will help my school get ready for the new Common Core State Standards), 19 (94%-I do my best to support staff in their use of curriculum maps), 9 (94%-My building's curriculum maps are aligned to state standards), 5 (91%-The costs to create/update curriculum maps are a good use of district resources), and 1 (93%-Curriculum maps help me improve student results in my school).

Items with the lowest level of agreement varied, but tended to center on goals and expectations, time, and professional development. These items included 21 (50%-I receive positive feedback from my superintendent on my use of maps), 18 (54%-There is sufficient amount of professional development available for staff on curriculum

mapping), 6 (56%-I have time to use curriculum maps), 7 (60%-Curriculum maps affect my influence over teachers), and 15 (65%-My staff have the skills to use curriculum maps effectively).

This study was done in the context of other research in the field, and this chapter presented results springing from the three research questions. In chapter five, the relationships of these findings with current and previous research will be explored. Implications of this study will be elaborated, conclusions drawn, and recommendations made to help inform educational policy, practice and research.

Chapter V: Summary of Findings, Conclusions, and Recommendations

Pressures on leaders to reform and restructure schools are pervasive within the United States and include Common Core State Standards (CCSS, 2010), Race to the Top (RTTT) (USDOE, 2009), growing global economic competition, next generation assessments (Achieve, 2010), and changing demographics. Curriculum leadership and effective school superintendent and building principal relationships in the use of curriculum maps will partly determine how successfully schools change. Prior research shows superintendents who (a) provide principals clear expectations and goals, (b) ensure quality and sustained professional development, and (c) attend to matters of curriculum alignment and collaborative decision-making develop building leaders with the skills, knowledge, and efficacy to carry out challenging reforms (Anderson, 2003; Bottoms & Fry, 2009; Wahlstrom et al., 2010). However, studies measuring the strength of the relationships between superintendents' support for curriculum mapping and building principals' efficacious use of maps as instructional leader are lacking.

Curriculum maps are portals into the classroom that principals can use to inform their instructional leadership practices and improve student learning. When maps are implemented properly and confidently as boundary objects, efficacious building principals have the capacity and leadership tools to create communities of practice that bring administrators to the classroom level and help push reform efforts forward. This study will inform theories on the organizational aspects of school effectiveness and human causal relationships between superintendents and building principals in the area of curriculum maps.

Three research questions were addressed in this quantitative study:

1. What is the strength of the relationship between superintendent support for curriculum mapping and use of curriculum maps by middle school building principals?

2. What is the strength of the relationship between superintendent support for curriculum mapping and the extent middle school principals use curriculum maps as boundary objects?

3. What is the strength of the relationship between superintendent support for curriculum mapping and middle school building principals' sense of efficacy to use maps?

Additionally, relationships between curriculum map use, use of maps as boundary objects, and principal efficacy were explored through selected items of superintendent support that include goals and expectations, collaboration, and professional development. Correlations of socioeconomic conditions, district size, and building principal experience were also conducted.

Data were gathered with an Internet-accessed survey tool which included demographic questions, an operational checklist to measure superintendent support for curriculum mapping, and a two-part principal perception survey to measure (A) principals' sense of efficacy to use curriculum maps; and (B) principals' use of maps, use of maps as boundary objects, and principals' sense of efficacy to use maps. Principal Perception Survey Part A was derived, with permission, from Tschannen-Moran and Gareis' (2004) tool for measuring principals' sense of self-efficacy for instructional components of leadership.

All 633 New York State public middle school principals and principals in schools containing grade seven with district enrollments ≤ 6,000 students were the target population for this research. Principals in districts with ≥ 6,001 students were filtered from the results due to unique superintendent-principal relationships that exist within New York City public schools as detailed in Chapters 1 and 3 of this study. 164 principals completed the survey for a response rate of 26%. Spearman's rho correlations and a linear multiple regression were run to measure strength of the relationships between superintendent and building principal.

This chapter is divided into three sections: Summary of findings, conclusions, and recommendations.

Summary of Findings

Descriptive statistics.

Nearly 20% of respondents reported their districts have not created curriculum maps. Given what we know about successful school districts and school reform, these data suggest many schools are not realizing their full potential to positively affect student learning. Curriculum maps are essential to student achievement. Anderson's (2003) literature review pointed out that successful districts display a number of characteristics, including an aligned curriculum. Goodwin's (2010) research led to his conclusion,

> the school-level variable with the strongest apparent link to student success is "opportunity to learn"; that is, the extent to which a school (1) clearly articulates its curriculum, (2) monitors the extent to which teachers cover the curriculum, and (3) aligns its curriculum with assessments used to measure student achievement. (p.18)

For principals of schools with curriculum maps, 82% stated resources are allocated for curriculum mapping efforts, and 80% reported curriculum mapping activities are included in the professional development plan. These data strongly suggest district support for curriculum mapping professional development.

In terms of goals and expectations, 38% of principals reported their superintendent meets with them to review their mapping progress or use of maps at the building level. Less than one in five superintendents address curriculum maps in the principal evaluation process, and approximately 25% expect curriculum maps to be part of teacher observations. Superintendent expectations for curriculum map use by classroom teachers is much higher, with 61% and 63% of principals stating their superintendent expects every teacher to have and use curriculum maps, respectively. What gets tested gets taught, and what gets measured gets done. Principals use curriculum maps when they are held accountable for implementing maps in their buildings. Accountability for curriculum mapping is critical, yet it appears there are greater expectations for classroom teachers to use maps than for building principals. These findings are similar to other research showing limited emphasis of curriculum and instruction criteria on principal evaluation tools (Goldring, Cravens, Murphy, Porter, Elliott, & Carson, 2009).

Data from Section Four Part A showed principals have a high sense of efficacy to use curriculum maps for aligning curricula to state standards and for collaborating with staff. However, they are less self-assured for using curriculum maps to motivate teachers or to manage change in their schools. These data suggest principals may have used maps for alignment and collaboration purposes, but motivating staff and implementing change

with curriculum maps are more complex constructs they may not have experienced. Superintendents can empower and encourage principals to motivate others and enact reforms by applying Bandura's (1997) four antecedents of efficacy (mastery experiences, vicarious experiences, verbal persuasion, and physical-emotional states) and Fords' (1992) theories of motivation systems to their interactions and planning sessions with principals. It therefore appears reasonable to assume that principals will be more apt to use curriculum maps efficaciously in their buildings after receiving quality, sustained professional development in curriculum mapping and positive feedback from their superintendents.

Section Four Part B data showed that principals believe curriculum maps will help them get their schools ready for CCSS (2010). They also think their maps are aligned with state standards, and that curriculum maps are a good use of district resources. Most significantly, principals believe curriculum maps help them improve student results. Principals clearly value curriculum maps as leadership tools, which bodes well for student achievement as principals implement reforms to meet the new CCSS (2010), RTTT (USDOE, 2009), next generation assessments (Achieve, 2010), and changing United States demographics.

Only 50% of principals report they receive positive feedback from superintendents about their use of curriculum maps, and little over half believe there is adequate professional development in curriculum mapping for staff. Only 56% have time to use curriculum maps, and 60% believe curriculum maps affect their influence over teachers. Time for instructional leadership is limited when running a building. Gilson (2008) found 93% of secondary principals attended to curriculum and instructional

matters less than 30% of the time (p. 89), and Horng, Klasik and Loeb (2010) calculated 13% of secondary principals' time was spent on curriculum and instruction (p. 502). These data suggest concerns regarding system capacity to best utilize curriculum maps. Though a high percentage of principals stated professional development resources for curriculum mapping are allocated and defined in professional development plans, these data suggest resources may not be targeting the skills teachers and principals need to use curriculum maps properly. Systemic issues appear to be insufficient time for principals to be instructional leaders, and a lack of quality sustained professional development in the area of curriculum mapping.

In terms of collective efficacy, only two thirds of principals feel their staff have the skills to use curriculum maps effectively; which may be reflective of principals' own lack of time or abilities to use maps. Feedback from leaders, adequate professional development, and perceived staff capacity all combine to affect a principal's belief in the collective efficacy of his or her staff. Collective efficacy, in turn, is important to a school's sense of "academic optimism;" a term used by Hoy et al. (2006) to describe factors that can help schools overcome socioeconomic pressures (p. 443). With only half of respondents receiving positive feedback on their use of maps from superintendents, it is possible a lack of affirmation from the district level is a contributing factor negatively impacting principals' perceptions of their staff's ability to use maps.

Research question 1.

There was a moderate, significant relationship between superintendent support and curriculum map use by building principals. As anticipated, when superintendents support curriculum mapping, building principals are more likely to use curriculum maps in their

leadership practices. Superintendent support matters to building leadership, and these results align with prior studies of effective leadership practices (Cotton, 2003; Leithwood et al., 2008; Marzano & Waters, 2009; Wahlstrom et al., 2010; Williams et al., 2009). There were no significant relationships between curriculum map use and principals' years of experience or gender.

Support in the form of goals and expectations had weak to moderate significant relationships with curriculum map use. The strongest relationship existed for superintendents who expect principals to discuss mapping at faculty meetings. Superintendents who require principals to discuss curriculum maps at faculty meetings get the message out to all staff that mapping is a district priority. This validates other studies showing the necessity of districts to monitor curricula (Goodwin, 2010; Waters & Cameron, 2007). Meeting principals to review mapping progress or map use at the building level and addressing curriculum maps as part of a principal's evaluation were also significantly related to map use. As previously cited, findings indicate that while there is a significant relationship, few superintendents actually addressed curriculum maps in principals' evaluation processes. These results add further credence to Goldring et al. study (2009) showing a problematic lack of curricular focus and instructional rigor criteria on principal evaluation tools. This study's results demonstrate what gets measured gets done, and strongly suggests that superintendents who monitor principals' implementation of maps will see greater and more informed use of curriculum maps in their districts.

Superintendent collaboration with principals matters. Weak to moderate significant relationships existed for collaboration between superintendent support and

building principal use of maps. Significant relationships occurred when superintendents met with principals to review mapping progress or use of maps. Other factors that caused principals to use curriculum maps were having a professional development plan that included curriculum mapping activities, and a strategic action plan or goals that addressed curriculum maps. These data demonstrate the importance of collaborative decision-making as described by Tannenbaum (1961) and Ford (2002) for organizational effectiveness and human motivation. Superintendents who collaborate with principals and engage principals in action planning and goal setting are more likely to see their goals and expectations realized in principal actions and behaviors.

Superintendents who support professional development opportunities and curriculum mapping activities are more apt to see maps being used by building principals. Although there was no demonstrated relationship between curriculum map use by building principals and superintendent participation in curriculum mapping professional development, engaging in professional development activities is less likely important for superintendents than supporting a district's professional development plan. Professional development matters, as Bandura (1997) illustrated in his four antecedents for efficacy. Less successful schools lack the strategic support and professional development of more successful schools (Newmann et al., 2001; Wahlstrom et al., 2010), which would logically impact principals' actions and behaviors. In this study, principals who used maps were those whose superintendents supported professional development activities in the area of curriculum mapping. The importance of professional development supports Gilson's (2008) suggestion that professional growth be a top priority of school principals. Wahlstrom et al. (2010) recommended professional development be based on each

individual principal's needs, and Grissom and Harrington (2010) found professional development in the form of mentoring and coaching was more effective than university classes.

Research question 2.

Results show superintendents who support curriculum mapping are more likely to have building principals use curriculum maps as boundary objects in their leadership repertoire. However, relationships of principals' use of curriculum maps as boundary objects with superintendent support were not as robust as relationships to average curriculum map use in research question one. There were no significant relationships between use of curriculum maps as boundary objects and principals' years of experience or gender.

Boundary objects have the potential to unlock doors separating principals from classroom teachers by cultivating communities of practice that promote an exchange of information between teachers and principal. An example is Coldren and Spillanes' (2007) finding of a successful elementary school principal's use of writing folders as boundary objects that "served as a window into teachers' classrooms" (p. 379). Much like writing folders, curriculum maps are tangible entities principals can use with teachers to get at the classroom level of instruction.

Relationships for superintendent support in the form of goals and expectations and curriculum maps as boundary objects were either weak or non-existent. The strongest relationships occurred when superintendents expected principals to discuss mapping at faculty meetings, and when superintendents expected curriculum maps to be part of teacher observations. Weaker relationships to boundary object use existed when the

superintendent expected every teacher to have and use curriculum maps. Interestingly, there were no significant relationships to use of boundary objects when superintendents met with principals to review mapping progress or use of maps at the building level, or when curriculum maps were addressed by the superintendent as part of principal evaluation process. These data may indicate that mapping discussions and principal evaluations between superintendents and principals may be focused on simple, direct uses of maps such as map completion and alignment with state standards rather than more complex uses such as facilitating discussions with educators to inform teacher pedagogy and student achievement.

Weak relationships for use of maps as boundary objects with collaboration existed when curriculum maps were addressed in a strategic action plan and/or district goals, or when the professional development plan included curriculum mapping activities. The only significant relationship for professional development was when the professional development plan included curriculum mapping activities.

Research on the leadership value of the use of boundary practices to improve student learning must not be understated. Collaborative sessions where teachers and their building principal look at student work, evaluate lessons, and discuss learning are routines that can alter instruction (Spillane, 2009). Curriculum maps in the hands of competent, skilled building principals hold the potential to transform school cultures and expand communications about curriculum and student learning. These data demonstrate the untapped potential of curriculum maps as boundary objects to help building principals inform their instructional leadership practices.

Research question 3.

Once again, superintendent support for curriculum mapping was significantly related to building principals' leadership. In this case, superintendent support was positively and moderately correlated to building principals' efficacy to use curriculum maps in their leadership practices. As delineated by Wahlstrom et al. (2010) in the landmark Wallace Foundation Study, "District efforts had the greatest impact when they focused on developing the professional capacity of principals and teachers, and on creating supportive organizational conditions" (p. 16). These results suggest that district leaders who support building principals with professional development, clearly defined goals and expectations, and collaborative decision-making promote efficacious leadership within their schools. There were no significant relationships between Principal Efficacy 1 and 2 and principals' years of experience or gender.

Goals and expectations matter to building leadership, and all items were significantly related to building principal efficacy. As in research question one, the strongest relationship to principal efficacy occurred when the superintendent expected principals to discuss mapping at faculty meetings. These results support other research showing superintendents who clearly communicate goals and objectives and hold principals accountable for student achievement are proven to positively impact student learning (Marzano & Waters, 2009). The weakest relationship to efficacy existed when the superintendent expected curriculum maps to be part of teacher observations, which supports Fenwick English's (1984) position that using maps to evaluate teachers is akin to "curriculum zapping" (p. 63).

With regard to professional development, having a professional development plan that includes curriculum mapping activities was significantly correlated to principal efficacy. Since professional development plans in New York State are designed with teacher input, these data support the research of Stein and Coburn (2008) who found differences in the success of a new math program depended on the level of input teachers had to shape professional development. Where the professional development program was directed from central office, acceptance by staff was minimal. The opposite was true when directed from within the building. The lack of a significant relationship for principal efficacy when the superintendent ensured professional development opportunities were available for curriculum mapping was unexpected. However, these results could very well imply that there were ineffective professional development offerings or a lack of time which impacted principals' efficacy. They may also suggest limited input of teachers into a district professional development plan. Given the collaboration required for creation of professional development plans, principals with staff who value curriculum mapping professional development may be more self-assured.

Principal efficacy for using curriculum maps was found to be positively and significantly related to all measures of collaboration. This is in line with Harris' (2010) finding of reform in Ontario in which she argued that large-scale reform requires collective capacity and focused collaboration targeting instruction and student learning (p. 200). The strongest correlation for collaboration and efficacy existed when curriculum maps were addressed in strategic action plan and/or district goals.

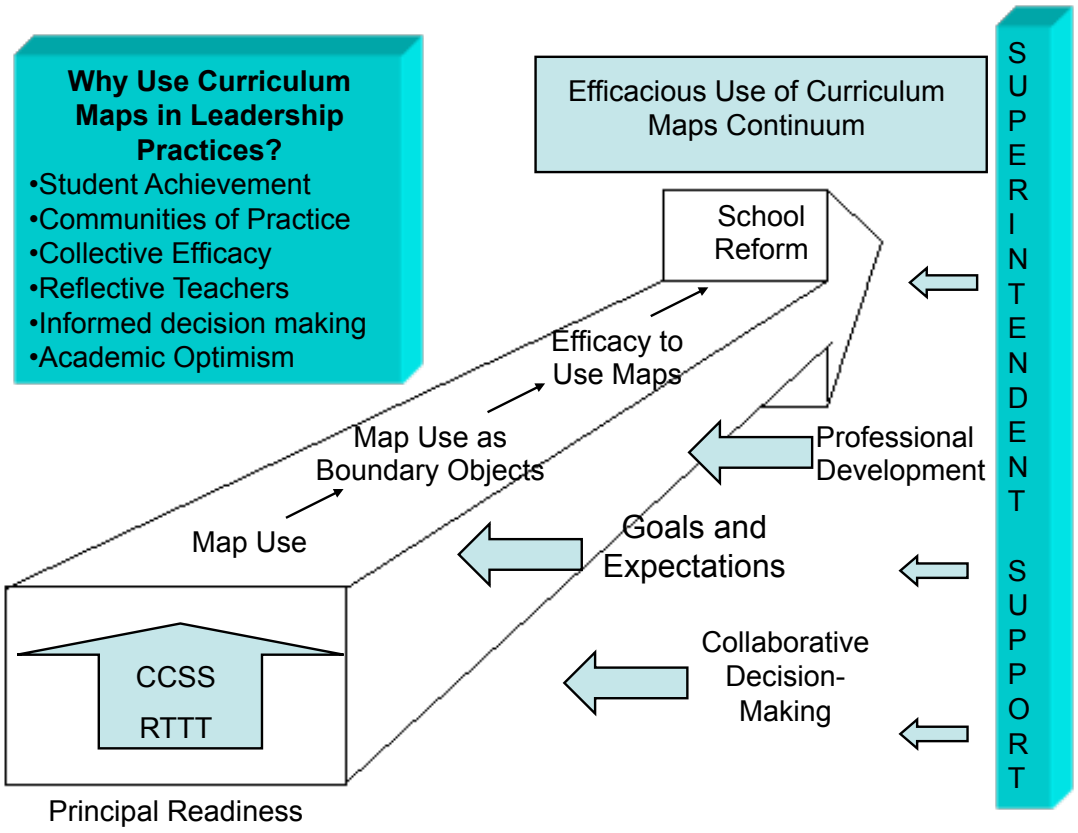
Other findings.

Nearly half the variation in principal efficacy was shown by multiple linear regression to be attributed to boundary objects, curriculum map use, and superintendent support. These results provide theoretical support and value for the elements explored in this research study. Average use of curriculum maps, use of maps as boundary objects, and principals' efficacy to use maps were all strongly and significantly related to one another. Most importantly, there were very strong, significant relationships between average curriculum map use and use as boundary objects. Robust relationships also existed for efficacy with average curriculum map use and use of maps as boundary objects. These data suggest the more principals use curriculum maps, the more likely they will use them efficaciously and as boundary objects.

The data for demographic variables was less convincing. There were no relationships for use of curriculum maps, use of maps as boundary objects, or principal efficacy with (a) principal's years of experience, (b) years experience in present building, or (c) district student enrollment. However, weak, significant relationships did exist for all three dependent variables with percent of students eligible for free or reduced lunch.

Correlations within professional development, goals and expectations, and collaboration had some moderately strong relationships. The strongest relationship existed when the superintendent expected every teacher to have and to use maps. Other robust relationships were present when the superintendent expected principals to discuss maps at faculty meetings, and when the superintendent met with principals to review mapping progress or use of maps at the building level.

Figure 1: Curriculum Map Leadership Practice Continuum



Conclusions

Superintendent support for curriculum mapping impacts building leaders' instructional leadership practices. When superintendents ensure (a) clear goals and expectations, (b) collaborative decision-making, (c) targeted professional development, and (d) adequacy of resources and time, building principals are more likely to use curriculum maps effectively to promote curriculum reform and student achievement. Such principals will be more efficacious in their leadership practices, empowering others within their buildings to reach their highest potential.

Figure one captures the systems thinking described in this study. As the illustration shows, principals move along a continuum of skill from using curriculum maps, to using curriculum maps as boundary objects that cross communities of practice between teachers and administrators, to being efficacious in their use maps as instructional leaders. Principal readiness to implement Race to the Top (RTTT) (USDOE, 2009) and Common Core State Standards (CCSS) (2010) is propelled forward by superintendent supports for curriculum mapping in the form of goals and expectations, professional development, and collaborative decision-making.

The most basic use of curriculum maps is for aligning curricula to state standards. However, superintendents who hold principals accountable for their use of maps, monitor their progress, and encourage and provide the professional development needed to use maps effectively with teachers will help principals utilize maps as objects of common interest that cross boundaries between classroom and administration. As boundary objects, maps can promote more meaningful levels of communication, analyses, and reflections among teachers and building leaders. Aligning maps to the CCSS (2010) is important for school reform, but using maps as objects to cross boundaries between classroom instruction and principal leadership requires knowledgeable, skillful, and efficacious principals.

This study has shown superintendents who support principals in curriculum mapping are more likely to have principals use curriculum maps in their schools. Rather than allow curriculum maps to sit idly in digital files or paper folders, supportive superintendents enable building principals to fully utilize the valuable data contained in curriculum maps with their staff. Results further show principals who use curriculum

maps will more likely use maps as boundary objects, and do so more self-assuredly. Much like learning to read, the more principals use curriculum maps, the more apt they are to develop the confidence to use them meaningfully.

Principals' use of curriculum maps as boundary objects proved to be the weakest relationship of the three research questions. This less robust relationship suggests underutilization of maps at a more rigorous and meaningful level of leadership. Using maps as boundary objects requires principals to meet with educators on a frequent basis to discuss curriculum and instruction at a deeper level of understanding. For some principals, face-to-face meetings to examine curriculum maps with educators would be a change in protocols. Principals may lack the skill sets necessary to conduct an assessment audit with teachers, evaluate the level of rigor and relevance within the curriculum, or share best practices. However, superintendents can provide the supports for curriculum mapping to ensure building principals have the efficacy, abilities, and resources to cross boundaries using curriculum maps and facilitate meaningful discussions and decision-making with teachers. CCSS (2010), RTTT (USDOE, 2009), and next generation assessments have created a sense of urgency, which is considered a first step to large-scale change (Kotter & Cohen, 2002). Now is the opportune time for superintendents to expect and support principals to use curriculum maps as boundary objects to transform building procedures, cultures, and the "How we do things around here" mindset.

Principal efficacy and facilitation skills are required to create conditions for teachers to immerse themselves with principals in pedagogical and informational discussions pertaining to curriculum maps and student learning. Whether the goal is to better understand the level of instructional rigor or interdisciplinary opportunities

available within a grade level, principals require the confidence and understandings regarding how to set up and conduct such boundary practice sessions. Principals with the confidence and skills to use maps as boundary objects matter to school success. As Hallinger and Heck (1996) stated, "the effects of principal leadership will occur indirectly through the principal's efforts to influence those who come into more frequent direct contact with students" (p. 298). This study's results suggest inadequate professional development opportunities for curriculum mapping, a lack of superintendent monitoring of principals' use of maps, and lack of time by principals for instructional leadership may be hampering principals' use of maps in instructional leadership practices.

Curriculum maps when used as boundary objects have the potential to distribute leadership among teachers, which has been proven to increase teacher efficacy and job satisfaction at the middle school level (Angelle, 2010). Building principals will best serve their communities by encouraging and empowering teachers to assume leadership roles. Curriculum maps as boundary objects are tools principals can use to promote discussions and decision-making within and across communities of practice. Louis et al. (2010) state, "Teachers do need to work together to improve instruction and student learning, but administrators also need to be part of the process" (p. 52). These results suggest the more principals use curriculum maps in their buildings, the more likely they will cultivate cultures of learning and what Hoy et al., (2006) term, "academic optimism."

In this study, professional development, goals and expectations, and collaboration all impacted principals' use of maps, use of maps as boundary objects, and principals' efficacy to use maps. In particular, superintendents who expected principals to discuss

curriculum maps at faculty meetings had the most positive impact on (a) curriculum map use by building principals, (b) use of maps as boundary objects, and (c) principals' efficacy to use maps as instructional leaders. Faculty meetings are opportune settings for superintendents to get their messages out and communicate district goals and expectations through their building principals. Expecting principals to share information about curriculum mapping at such forums communicates to teachers and others the value maps hold for the district in improving student learning. As discussed earlier, accountability matters to the realization of district goals and expectations.

Results from this study suggest that the perceived value of curriculum mapping by district leaders is mixed. First and foremost, 17.4% of districts surveyed did not have curriculum maps, which conveys that district priorities may not include curriculum maps. Secondly, though the majority of respondents stated that superintendents expected every teacher to have and use curriculum maps, only 50% of principals felt they received positive feedback from superintendents regarding their use of maps. With only 38% of respondents stating that the superintendent met with them to review mapping progress at the building level, and 18% reporting that curriculum maps were addressed by the superintendent as part of the principal evaluation process, there clearly appear to be discrepancies between what the superintendent expects to happen at the classroom level regarding curriculum mapping and the level of monitoring and accountability done by the superintendent to ensure expectations are being met.

Research shows a general lack of attention to curriculum and instructional measures in principal evaluations (Goldring et al., 2009; Porter, Polikoff, Goldring, Murphy, Elliott, & May, 2010). Furthermore, positive feedback is essential to an

individual's performance (Ford, 1992). Leaders must be mindful that what gets measured gets done, and setting and monitoring nonnegotiable goals for achievement is a proven district leadership practice (Marzano & Waters, 2009, p. 6). By not tracking use of curriculum maps by building administrators or offering positive feedback, superintendents may inadvertently be communicating to principals and staff that curriculum maps are primarily useful for aligning local curricula to state standards. Once maps have been aligned to state standards, their value to improve student learning may be perceived by staff and administration as minimal. By not empowering principals through targeted professional development to use maps as boundary objects, superintendents may be limiting principals' ability to realize the potential of curriculum maps to guide school reform and improve student achievement.

Although this researcher expected that experience might impact principals' efficacious use of maps as instructional leaders, this study suggested no relationship to years of principals' experience. These data are contrary to other studies that suggested principal experience impacted a principal's efficacy for instructional leadership (Lovell, 2009; Santamaria, 2008). What did slightly impact all three dependent variables were socioeconomic factors, with weak but significant relationships to curriculum map use, use of maps as boundary objects, and principals' efficacy. These results appear incongruent with other research on socioeconomic impacts including Bandura's (1993) explanation of how socioeconomic challenges within a school can erode a staff's sense of instructional efficacy (p. 142), and Louis et al. (2010) study showing an inverse relationship between increasing socioeconomic needs and teachers' attitudes about the

context in which they work (p. 94). However, the results of this researcher's study describe principal efficacy, and not teacher efficacy.

District leadership was pivotal in transitioning to the No Child Left Behind Act a decade ago, and district leadership will again be a key factor in how well schools reform to CCSS (2010), RTTT (USDOE, 2009), and next generation assessments (Achieve, 2010). Reform initiatives can be levers for change (Fuhrman & Elmore, 1990), and the present wave of reforms offer superintendents the opportunity to develop building principals' capacity to confidently and skillfully impact student achievement through the use of curriculum maps. A principal's professional development matters to successful school performance, yet few districts have a well-structured professional development system for administrators in place (Louis et al., 2010). Superintendents can utilize Bandura's (1997) antecedents for efficacy to create a cadre of principals confident in their use of curriculum maps as instructional leadership tools by (a) paying particular attention to principals' development of mastery in the use of maps; (b) making comparisons and offering models that suggest competency with other schools; (c) providing positive and meaningful feedback; and (d) establishing good building-superintendent relations. Curriculum maps are necessary for successful reform, and this study lends credence to superintendents supporting curriculum maps in their districts through clear goals and expectations, professional development, and collaborative decision-making.

Implications

Theory.

Exploring the strength of the relationships between superintendent support for curriculum mapping with building principals' efficacious use of curriculum maps is timely given the curriculum and assessment reforms of CCSS (2010), RTTT (USDOE, 2009), and next generation assessments (Achieve, 2010). Data collected were representative of the target population, and relationships calculated for all research questions were statistically significant. As expected, superintendents who support curriculum mapping affect the extent, manner, and confidence of how principals use maps in their leadership practices. These data were rich, and numerous extensions were possible to explore support more deeply through the lenses of professional development, goals and expectations, and collaboration.

Heck and Hallinger (2005) commented: "researchers continue to be largely oblivious of the important problems that concern practitioners….The result is that researchers, policy-makers, and practitioners often talk past each other" (p. 239). Luyten et al. (2005) suggest research on school effectiveness could benefit from studies on organization functions and the causal relationships between leaders, school culture, and school effectiveness (p. 272).

Conclusions made in this study represent a conservative approach to data analysis. Given the categorical nature of how superintendent support was calculated, Spearman's rho correlations were run instead of less conservative Pearson correlations. The consistent use of superintendent support allowed reliable conclusions for relationships with average curriculum map use, curriculum map use as boundary objects, and efficacy to use

curriculum maps. The survey instrument was fully piloted and tested in the field, and permission was granted from Megan Tschannen-Moran and Chris Gareis (2004) to use the instructional efficacy portion of the principal efficacy tool.

One major development in this study that potentially compromised the data was the necessity to filter out all districts with enrollments ≥6001 students. Schools from large districts were filtered from the study due to the unexpected relationship of superintendents and building principals in New York City schools. New York City principals work with Children First Networks (CFN) (NYCDOE, n.d.) rather than with superintendents regarding curriculum and other matters of student learning. Consequently, survey data were filtered to remove all schools with enrollments greater or equal to 6,001 students (all 33 New York City School Districts have enrollments greater than 6,001 students). Considering 52% of respondents were from districts with enrollments of ≤ 1,000 students, the data may be more representative of smaller school systems. Since smaller districts typically have more intimate superintendent-principal relationships than larger districts, these research data may be biased towards the smaller school district.

Practice.

A national curriculum is being implemented across the United States that adds greater rigor and relevance to existing state standards and promises to transform student learning. CCSS (2010) have been adopted in nearly all states in the nation, and RTTT (USDOE, 2009) has been awarded to a number of states and the District of Columbia. The scope of these reforms can be overwhelming, and district leaders will depend greatly on the intellectual capacity, skill, and efficacy of building principals to bring these

reforms to fruition. With a sense of urgency becoming palpable in many classrooms and school buildings, this study's data offer exciting insight for practitioners to better understand how superintendent support for curriculum mapping can help building principals use curriculum maps to reform their school systems. These results show that superintendents who support curriculum mapping through professional development, clear goals and expectations, and collaboration with building principals are most likely to see building principals efficaciously use maps to lead their staff through the reforms.

This study suggests accountability matters to school reform. When superintendents expect principals to discuss curriculum mapping at faculty meetings, principals are more likely to use curriculum maps confidently in their buildings. When superintendents expect teachers to have and use curriculum maps, building principals are more efficacious in their use of curriculum maps as instructional leaders. However, these data also reveal the vast majority of superintendents do not address curriculum maps during principal evaluations. Nor does the vast majority meet with principals to review how they are using maps in their buildings. With pending reforms in curricula, how are principals to manage the changes without the support and monitoring by their leaders? How can superintendents ensure appropriate resources for professional development if they don't regularly collaborate with their principals to find out what they need? Will teachers have the personal agency to implement the changes within their disciplines without strong instructional leadership? Principal evaluation tools and procedures that include language about curriculum mapping are needed to address this deficiency of practice by district leaders.

Time for instructional leadership has been an ongoing concern of school principals, and this study illustrates that the problem remains. Nearly half of the principals responded they don't have time to use curriculum maps. Although they value curriculum maps and the opportunities maps provide to improve student learning, principals lack the time to use maps as instructional leaders. This is concerning especially since only two-thirds believe their staff has the skills to use maps effectively. Who will ensure reforms are successfully being implemented for every child in every classroom, and that the taught curriculum reflects the new curriculum? Who will monitor what is and is not working, or bring people together regularly to discuss, analyze, and reflect on best practices? How will communities of practice be maintained without confident, knowledgeable leadership?

These data suggest superintendents are not fully realizing the potential of curriculum maps to assist building leaders in their leadership practices and school reform efforts. Principal evaluation tools and procedures that include language about curriculum mapping that go beyond aligning maps to state standards are recommended to address this deficiency. Superintendents are urged to prepare themselves and their boards of education to fully understand the value and use of curriculum maps in leadership practices. Other recommendations are to (a) collaborate regularly with building principals on curriculum and instructional issues, (b) set clear goals and expectations regarding curriculum mapping, and (c) provide principals with the necessary understandings and skills to use curriculum maps as boundary objects to cross communities of practice and work with teachers to improve student achievement. Given the growing importance of the Interstate School Leaders Licensure Consortium Standards for School Leaders to state

and district policy makers (Tupa & McFadden, 2009), this in an opportune time for district leaders to review principal evaluation tools and begin much needed reforms.

Future research.

Results from this study necessarily raise additional questions. Understanding how district leaders implement CCSS using curriculum maps and the impacts on student achievement of next generation assessments would be useful as district leaders and policy makers look for best practices to accomplish meaningful school reform. Is a principal's efficacy negatively impacted by the new and more rigorous CCSS curricula, or is the principal confidently using maps to facilitate the important discussions with staff necessary to implement the standards? Are professional development plans being shaped by principal and teacher input; if so, what are the outcomes of such collaborations? What are the effects of professional development programs on principal efficacy and use of curriculum maps, and do electronic mapping systems impact building principals' use of maps? These are all important questions requiring further exploration.

Based on the analysis of data from the survey instrument and conclusions drawn in this study, the researcher recommends the following for future research:

Further study of the use of curriculum maps as boundary objects by building principals.

Data relative to Research Question 1 revealed moderate, significant relationships between superintendent support and principals' use of curriculum maps. However, data relative to Research Question 2 revealed less robust relationships when there was an expectation for using maps as boundary objects. It is interesting that there appears to be a dichotomy between the results of these two research questions. In addition, while the

majority of principals stated that they used maps, it was unclear how, precisely, the principals used maps and if, indeed, they had a "practical comfort level" in dealing more deeply with the intricacies of the maps.

Could principals simply construe the use of maps as routinely monitoring teachers and ensuring that curricula are aligned to state standards, thus meeting only a perfunctory approach to the utilization of these tools, or is use of maps evident through defined protocols that incorporate teacher teams and looking at student work, thus promoting map use as a deeper approach to school reform? Does the format of a particular curriculum map impact the efficacy of use? Could the presence of essential questions, common core state standards, or hyperlinks to thematic units of instruction in a curriculum map affect how confidently principals use curriculum maps? If boundary objects are truly intended to be used to organize the interconnectedness of communities of practice (Wenger, 1998), a qualitative study of how principals use maps in their leadership positions appears to be an area deserving attention.

Further study of the impacts of superintendent support for curriculum mapping in the form of goals and expectations on building principals' use of curriculum maps.

Descriptive statistics revealed that over 60% of principals agreed their superintendents expected every teacher to have and use curriculum maps. However, only 18% of principals reported their superintendents addressed curriculum maps in the principal evaluation process, and one quarter stated their superintendents met with them to monitor curriculum map progress. There is a significant dissociation between superintendent expectations for teacher use of maps and principal accountability to use maps. Are superintendents expecting their deputies and assistants to monitor the

implementation and progress of curriculum maps throughout the district, thus inserting an additional layer of district leadership which could possibly serve to lessen the impact of the superintendent's direct supervision; or is it assumed principals will fulfill the superintendents' expectations that teachers will use and have curriculum maps without the need for direct district office supervision?

Considering the significant correlations found in this study's three research questions, an area of research would be to study if there are particular principal evaluation tools or certain criteria within those tools that relate to curriculum maps, and if so, how such instruments impact principals' use of maps. Are districts applying the Interstate School Leaders Licensure Consortium Standards for School Leaders to principal evaluation systems in the area of curriculum mapping? Research shows the importance of principal accountability systems to school success (Anderson, 2003; Bottoms & Fry, 2009; Marzano & Waters, 2009; Wahlstrom et al., 2010). Given Neely and Leonardis' (2011) finding that managers holding power assume people will do as they are told to do the first time, how central office leaders impact principals' use of curriculum maps in the form of goals and expectations is an area worth studying.

An examination of the impacts of building principal efficacy to use maps on teacher effectiveness and academic optimism.

Research question three showed that a moderate, significant relationship exists between superintendent support and principals' efficacious use of curriculum maps. Although not the intent of this research, the impacts of efficacious principals to use curriculum maps on teacher effectiveness and the academic optimism (Hoy et al., 2006) within a school for curriculum maps would be relevant in this era of school reform. Do

principals who receive praise and affirmation on their use of curriculum maps do the same with their staff? Is there a reciprocal relationship for efficacy between teachers and principals, and if so, how does confident, informed use of curriculum maps by principals affect teachers' efficacy, academic focus, and trust and faith in parents and colleagues?

Coupling principal interviews with staff interviews to determine more precisely how principals cultivate teacher confidence in themselves and their school would help to explain relationships between instructional leadership practices involving curriculum maps and teacher pedagogy and attitudes. Collective efficacy and academic optimism are essential to student achievement (Hoy et al., 2006; Leithwood & Jantzi, 2008), and evaluating the potential reciprocity between principal and teacher efficacy to use curriculum maps is an area that warrants attention.

An examination of superintendent support for curriculum mapping and impact on student achievement.

This study explored relationships between superintendent support and building principals in use of maps, and all three research questions showed moderate to weak, significant relationships between superintendent support and principals' efficacious use of maps. Although the intent of this study was not to measure impacts on student achievement, the literature review for this study revealed that pervasive pressures of CCSS (2010), next generation assessments (Achieve, 2010), and financial constraints raise the stakes for all school districts to improve student achievement on standardized testing. Since research shows successful schools and districts with aligned curricula (Anderson, 2003; Bottoms & Fry, 2009; Goodwin, 2010; Wahlstrom et al., 2010) outperform those without such coherence, and, as referenced in the second

recommendation for future research, how student achievement is impacted by superintendent support for curriculum mapping would contribute to the growing body of research in this field.

An examination of how districts without curriculum maps make informed decisions in the areas of curriculum, instruction, and assessment.

Curriculum maps are proven to positively impact student achievement (Anderson, 2003; Bottoms & Fry, 2009; Goodwin, 2010; Wahlstrom et al., 2010), yet this study's data found nearly 20% of schools do not have curriculum maps. It would be reasonable to explore how these schools are making informed decisions in the areas of curriculum, instruction, and assessment, and if the reasons for not having maps reflect superintendent or principal turnover, insufficient resources, or lack of a coherent action plan. In addition, it would be intriguing to investigate the roles that boards of education play in such districts and whether or not the lack of curriculum maps are more typical in smaller or larger districts? The value of curriculum maps is evident throughout the research (Anderson, 2003; Bottoms & Fry, 2009; English, 1984; Goodwin, 2010; Kercheval & Newbill, 2002; Plaza, Draugalis, Slack, Skrepnek, & Sauer, 2007; Supovitz & Christman, 2003; Wahlstrom et al., 2010), and understanding the reasons why some districts lack curriculum maps, how they make critical decisions for instructional direction, and how subsequent student achievement is being affected by this absence are areas that require further exploration.

Closing Statement

> The loose coupling of school leadership and classroom teaching…is paralleled...by the separation of most leadership research and researchers from

> research on teaching and learning….Second, it seems clear that if we are to learn more about how leadership supports teachers in improving student outcomes, we need to measure how leaders attempt to influence *the teaching practices that matter.* (Robinson, Lloyd, & Rowe, 2008, pp. 668-669)

RTTT (USDOE, 2009), CCSS (2010), principal and teacher evaluation systems, and next generation assessments (Achieve, 2010) have now entered the lexicon of instructional leaders. Given the tremendous focus of RTTT on curricular reform, how successfully schools manage change will depend on curriculum leadership and effective school superintendent and middle school principal relationships in the use of curriculum maps.

Prior studies show superintendents who (a) provide principals clear expectations and goals, (b) ensure quality and sustained professional development, and (c) attend to matters of curriculum alignment and collaborative decision-making develop building leaders with the skills, knowledge, and efficacy to carry out challenging reforms (Anderson, 2003; Bottoms & Fry, 2009; Wahlstrom et al., 2010). This study has proven these same findings apply equally well to the use of curriculum maps by building leaders.

Creating curriculum maps and using them takes time and can feel burdensome, but the opportunities once developed are numerous. Curriculum maps are proven tools for successful reform, allowing the creation of professional learning communities and confident leadership practices. This research has shown significant, positive relationships exist between superintendent support for curriculum mapping and (a) principals' use of maps, (b) principals use of maps as boundary objects, and (c) principals' efficacy to use maps as instructional leaders. These data also reveal maps have not been created in

17.4% of school districts, maps are underutilized in those that do have curriculum maps, and accountability and monitoring of principals' use of curriculum maps by superintendents is lacking. Effective sustained professional development for principals in curriculum mapping and using maps to facilitate meaningful decision-making with teachers may also be deficient in many schools.

As district leadership was pivotal in transitioning to NCLB a decade earlier, district leadership will again be a key factor in how well schools reform to CCSS (2010), RTTT (USDOE, 2009), and next generation assessments (Achieve, 2010). In the words of Otto Scharmer (2009), "To lead profound change is to shift the inner place from which a system operates. This can be done only collaboratively" (p. 377). Superintendents have the capacity to create "profound change" and positively impact student achievement within their districts by supporting building principals in the area of curriculum mapping and (a) providing clear goals and expectations, (b) monitoring principal use of maps, (c) ensuring quality and sustained professional development, and (d) collaborating with building leaders.

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Appendix A: Principal Survey Instrument

Principal Questionnaire

Section One: Survey Introduction

Dear Colleague,

Thank you for taking time to complete this survey which should take no more than 8-10 minutes to finish.

This study has the support of the New York State Middle School Association, and will add to the literature in the areas of superintendent leadership, middle school building principal leadership practices, and curriculum mapping.

With Common Core Standards and Race to the Top funds now directly impacting New York State Public Schools, the data from this study may help districts and staff make informed decisions that benefit all children. Additionally, this information will help your district leaders understand how their support for curriculum mapping directly impacts you and your leadership practices and capacities. If you have any questions concerning the research study, or wish to receive a copy of the aggregated results, please e-mail me at dannas@sage.edu.

Results of the research in a summary format will be sent to all school leaders invited to participate in the survey, and aggregated study results will be presented at the Sage College Doctoral Colloquium in the fall of 2011. Also, study findings will be offered as a presentation at the 2012 New York Middle School Association's Annual Conference.

Your name and that of your school will not be collected and all information is confidential. By clicking the ***Next*** link, you are giving consent to participate in this survey and study.

Once again, thank you for your help in this study and for making a difference in the lives of children.

Steve Danna
Doctoral Student

Section Two: Principal Demographic Information

Please complete the following questions to the best of your ability.
Definitions: Curriculum maps are databases that describe the content, skills, and assessments covered each month in a given class. Curriculum mapping is the process of creating curriculum maps.

1. What is your school level?

- Middle School (grades 6-8)
- Junior/Senior School (grades 7-12)
- Intermediate School (grades 5-8)
- K-6 School
- K-8 School
- K-12 School
- Other school that includes grades 6-8

2. **How many years have you been a building principal?**

- 1 year
- 2-7 years
- 8-14 years
- 15-21 years
- 22-29 years
- 30 or more years

3. **How many years (including this school year) have you been in a building principal in your present school?**

- 1-3 years
- 4-6 years
- 7-9 years
- 10-14 years
- 15 or more years

4. Curriculum maps have been created in my district.

- Yes
- No (This will be a skip logic question)

5. How long have curriculum maps been used in your district?

- 1-3 years
- 4-6 years
- 7-9 years
- 10 years or longer

Section Three: Superintendent Support for Curriculum Maps

To the statements below, please respond to the best of your ability by checking Yes (Yes), No (No) or Unsure (Unsure).

1. Curriculum maps are addressed in Strategic Action Plan and/or District Goals.	**(Yes) (No) (Unsure)**
2. Curriculum maps are mentioned in newsletters from superintendent.	**(Yes) (No) (Unsure)**
3. Superintendent meets with principals to review mapping progress or use of maps at the building level.	**(Yes) (No) (Unsure)**
4. Curriculum maps are addressed by the superintendent as	**(Yes) (No) (Unsure)**

part of principal evaluation process.	
5. Maps are publicized on district webpage.	**(Yes) (No) (Unsure)**
6. Superintendent expects principals to discuss mapping at faculty meetings.	**(Yes) (No) (Unsure)**
7. Superintendent informs the board of education about curriculum maps.	**(Yes) (No) (Unsure)**
8. Superintendent expects curriculum maps to be part of teacher observations.	**(Yes) (No) (Unsure)**
9. Curriculum maps are used in curriculum renewal meetings.	**(Yes) (No) (Unsure)**
10. Resources are allocated to curriculum mapping efforts.	**(Yes) (No) (Unsure)**
11. Professional Development Plan includes curriculum mapping activities.	**(Yes) (No) (Unsure)**
12. Superintendent ensures professional development opportunities are available for curriculum mapping.	**(Yes) (No) (Unsure)**
13. Superintendent has participated in curriculum mapping professional development.	**(Yes) (No) (Unsure)**
14. The superintendent expects EVERY TEACHER TO HAVE curriculum maps.	**(Yes) (No) (Unsure)**
15. The superintendent expects EVERY TEACHER TO USE curriculum maps.	**(Yes) (No) (Unsure)**

Section Four: Principal Perception Survey Part A

Directions: Please respond to each of the questions by considering the combination of your current ability, resources, and opportunity to do each of the following in your present position. Responses are based on a nine point scale ranging from "Not at All" (1) to "A Great Deal" (9). Please select one response for each of the six items. Thank you.

In your current role as building principal, to what extent can you use curriculum maps to….	**Not at All**		**Very Little**		**Some Degree**		**Quite a Bit**		**A Great Deal**
1. Improve student learning	1	2	3	4	5	6	7	8	9
2. Motivate teachers	1	2	3	4	5	6	7	8	9
3. Align curricula to state standards	1	2	3	4	5	6	7	8	9
4. Analyze student assessment data	1	2	3	4	5	6	7	8	9
5. Promote collaboration among staff	1	2	3	4	5	6	7	8	9
6. Manage change in my school	1	2	3	4	5	6	7	8	9

Section Five: Principal Perception Survey Part B

You're nearly done. Thanks so much for doing this. Completing this survey will really help with the research.

<u>Directions:</u> For each question, please indicate your opinion by selecting one of four options ranging from Strongly Disagree (1) to Strongly Agree (4).

(1) Strongly Disagree
(2) Disagree
(3) Agree
(4) Strongly Agree

1. Curriculum maps help me improve student results in my school.	1, 2, 3, 4
2. Curriculum maps bring me closer to the classroom level.	1, 2, 3, 4
3. I use curriculum maps effectively as a building leader.	1, 2, 3, 4
4. Curriculum maps allow me to have meaningful interactions with teachers.	1, 2, 3, 4
5. The costs to create/update curriculum maps are a good use of district resources.	1, 2, 3, 4
6. I have time to use curriculum maps.	1, 2, 3, 4
7. Curriculum maps affect my influence over teachers.	1, 2, 3, 4
8. I use curriculum maps to collaborate with teachers in my building.	1, 2, 3, 4
9. My building's curriculum maps are aligned to state standards.	1, 2, 3, 4
10. Teachers value the discussions I have with them when I refer to their curriculum maps.	1, 2, 3, 4
11. I am comfortable discussing curriculum maps with teachers.	1, 2, 3, 4
12. I know how to use curriculum maps effectively with teachers.	1, 2, 3, 4
13. My superintendent supports my professional growth in using curriculum maps.	1, 2, 3, 4
14. Curriculum maps are an important tool for me to move my building forward.	1, 2, 3, 4
15. My staff has the skills to use curriculum maps effectively.	1, 2, 3, 4
16. Curriculum maps affect my ability to share leadership with teachers.	1, 2, 3, 4
17. Curriculum maps will help my school get ready for the new Common Core State Standards.	1, 2, 3, 4
18. There is sufficient amount of professional development available for staff on curriculum mapping.	1, 2, 3, 4
19. I do my best to support staff in their use of curriculum maps.	1, 2, 3, 4
20. I have experienced success using curriculum maps in my leadership practices.	1, 2, 3, 4
21. I receive positive feedback from my superintendent on my use of maps.	1, 2, 3, 4

<u>Section Six: Principal Demographic Information Continued</u>

Less than ten questions to go. Thank you.

1. What is the total enrollment of your district?

- o Less than 500 students
- o 501-1,000 students
- o 1,001-1,500 students

- 1,501-3,000 students
- 3,001-6,000 students
- 6,001 or more students

2. What is your gender?
- Female
- Male

3. What is your age?
- 25-34
- 35-44
- 45-54
- 55 or older

4. What is the approximate percent of students eligible for free or reduced lunch (FRL) in your school?
- <10%
- 10%-19%
- 20%-29%
- 30%-39%
- 40%-49%
- 50% or greater

5. How many years have you worked in the field of education?
- 4-7 years
- 8-14 years
- 15-21 years
- 22-29 years
- 30 or more years

6. Curriculum maps are used in every grade of my building.
- Yes
- No

7. Curriculum maps exist for every subject in my building.
- **Yes**
- **No**

8. My district uses an electronic mapping program to store and use maps.
- **Yes**
- **No**

9. Are there any comments you would like to share regarding curriculum maps and building leadership?

<u>Section Seven: End of Survey</u>
Thank you so much for taking time to complete this survey.

Appendix B: Survey Invitation Email to Principals

Dear Colleague,

Thank you for taking time to complete this survey which should take no more than 8-10 minutes to finish.

This study has the support of the New York State Middle School Association, and will add to the literature in the areas of superintendent leadership, middle school building principal leadership practices, and curriculum mapping.

With Common Core Standards and Race to the Top funds now directly impacting New York State Public Schools, the data from this study may help districts and staff make informed decisions that benefit all children. Additionally, this information will help your district leaders understand how their support for curriculum mapping directly impacts you and your leadership practices and capacities. If you have any questions concerning the research study, or wish to receive a copy of the aggregated results, please e-mail me at dannas@sage.edu.

Results of the research in a summary format will be sent to all school leaders invited to participate in the survey, and aggregated study results will be presented at the Sage College Doctoral Colloquium in the fall of 2011. Also, study findings will be offered as a presentation at the 2012 New York Middle School Association's Annual Conference.

Your name and that of your school will not be collected and all information is confidential. By clicking the ***Next*** link, you are giving consent to participate in this survey and study.

Once again, thank you for your help in this study and for making a difference in the lives of children.

Steve Danna
Doctoral Student

Appendix C: Survey Reminder Email to Principals

Dear Colleague,

If you already responded to this New York State Middle School Association-supported survey, thank you. For those who haven't, please take 6-8 minutes to complete the questionnaire. http://www.surveymonkey.com/s/8YHQPWJ
Info on the survey follows below. Thank you so much.

Steve Danna

Dear Colleague,

My name is Steve Danna, and I am a public school administrator and doctoral student at Sage Graduate School in Albany, NY.

I am conducting research for my dissertation that I hope may help administrators and schools successfully implement Race to the Top and Common Core State Standards through effective leadership and use of curriculum maps.

This study has the support of the New York State Middle School Association, and will add to the literature in the areas of superintendent leadership, building principal leadership practices, and curriculum mapping. To help inform our profession, I will present my findings at the 2011 New York Middle School Association's Annual Conference.

Please take 8-10 minutes to complete the survey which can be accessed via the following link: http://www.surveymonkey.com/s/8YHQPWJ.

Thank you so much for your help in this study and for making a difference in the lives of children.

Sincerely,
Steve Danna
Sage Graduate School doctoral student
NYS Public School Administrator

Appendix D: Letter of Support from New York State Middle School Association

Steve Danna
25 Library Ave.
Warrensburg, NY 12885

Dear Steve,

I am writing to inform you that the New York State Middle School Association (NYSMSA) would be happy to play a role in the dissemination of your principal's survey instrument to our membership. As per our discussion I will forward the survey throughout New York State in the attempt of targeting as many middle level principals as possible. Further, I understand that this survey is to be completed in January of 2011 and will wait for your guidance on disseminating it at that time.

In turn for sharing your survey through our electronic network, I appreciate your willingness to do a session on a gratis basis at our annual conference in Saratoga Springs in October, 2011. On behalf of NYSMSA, I would like to say that we look forward to a long and mutually beneficial collaboration with you. Best of luck with your research.

Sincerely,

Christopher Reed

Region III Director, NYSMSA
Principal
Glens Falls Middle School
20 Quade St.
Glens Falls, NY 12801

518-793-3418
creed@gfsd.org

Appendix E: Permission to Use Principal Self-Efficacy Scale

Original E-mail From: Megan Tschannen-Moran <mxtsch@wm.edu> Date: 11/01/2010 02:20 PM To: 'Stephen Danna' <dannas@sage.edu> Subject: RE: [No Subject]

Steve,

You are welcome to adapt the directions for the Instructional Strategies subscale of the Principal Self-Efficacy scale, although you will want to be sure the test the validity and reliability for this adapted purpose. I did not see those items on the IRB application you sent. I want to be especially firm that you do not use a Likert-type “Strongly Disagree” to “Strongly Agree” response scale as Bandura has explicitly cautioned against such a practice.

Also, your measure seems to presume that all of the principals completing your scale are currently using curriculum maps in their schools. You may want to assess that, because if they are not it will affect the interpretations of the remaining responses. Your first item regarding whether curriculum maps are tied to standards would seem to be tied to particular contexts, so you may want to reword it to specify the curriculum maps in use at their school.

I hope that your study goes well.

All the best,

Megan Tschannen-Moran