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UNIVERSITY OF NORTHERN COLORADO

Greeley, Colorado

The Graduate School

SCHOOL PRINCIPALS: ILLUMINATING THE BEHAVIORS
AND PRACTICES OF EFFECTIVE SCHOOL PRINCIPALS
IN CHALLENGING PUBLIC SCHOOL CONTEXTS

A Dissertation Submitted in Partial Fulfillment
of the Requirements for the Degree of
Doctor of Education

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College of Education and Behavioral Studies
School of Educational Research
Program of Educational Leadership and Policy Studies

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This Dissertation by: Sophia Marsh Masewicz

Entitled: *School Principals: Illuminating the Behaviors and Practices of Effective School Principals in Challenging Public School Context*

has been approved as meeting the requirements for the Degree of Doctor of Education in the College of Education and Behavioral Sciences in School of Educational Research, Leadership, Program of Educational Leadership

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ABSTRACT

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Effective school principals are urgently needed to lead reform efforts to close the achievement gap between high performing and low performing students, particularly in high poverty and low performing public schools. This study employed an embedded mixed methods design of qualitative and quantitative data, and an analytic process called paradigm (Strauss & Corbin, 1998) to reveal the behaviors and practices of effective school principals in challenging public school contexts. The results of the study illuminated the behaviors and practices of effective school principals in challenging public school contexts. In addition, a grounded theory was developed of the phenomenon of *sense-making* of effective school principals that linked to systemic changes in the school. A substantive theory gave explanatory power to the success of principals to generate significant academic student achievement in high poverty, high needs schools.

The four schools and their principals were selected from an elite pool of schools in the state of Colorado that demonstrated high growth on the state's academic Growth Model. The selected schools met the criteria of at least 50% of the students from poverty and minority populations, and school principals with three or more years of tenure in their schools.

The study revealed an alternative educational leadership model--Stewardship as a Sense-making Model of Leadership. The principal as a servant leader, the fundamental influence in the schools, created conditions for shared leadership and paradigmatic shifts in the instructional climate that positively impacted student academic achievement.

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CHAPTER I

INTRODUCTION

The search for a leader is a common phenomenon in the human experience. Throughout history, leaders have emerged to rally societies to define their greatness. Leadership is one of the most studied topics in literature (Northouse, 2007). Over the past 35 years, a developing body of research examined leadership theories as applied to the field of education. Distinguishing effective school leadership is a significant educational trend anchored in the reform of educational systems at the state, national, and international levels (Bass, 1981; Marzano, Waters, & McNulty, 2005; Northouse).

The investigations into this macro trend cover leadership with a variety of foci such as characteristics, gender, and styles. This study focused on successful behaviors, practices, and sense-making of effective school principals. The unfolding of effective school leadership practices and behaviors is complicated; operationalizing of leaders' behaviors makes it difficult to frame a new meaning of leadership for educational reform (Hallinger & Heck, 1998).

Framework of Leadership Theories

Leadership theories that developed in the 20th century provide the foundation for framing the behaviors and practices of educational leaders today. Northouse (2007) summarized these theories of researchers. It was the initial concept of leadership, the “great man” theory (p. 15), that dominated much of the literature in the early 20th century.

These trait theories postulated that leaders were born with certain traits; individuals must possess these traits to lead organizations effectively. The characteristics of trait theories were later expanded by Stogdill (1974), Lord, DeVader, and Alliger (1986), and Kirkpatrick and Locke (1991). These traits and characteristics included intelligence, insight, responsibility, initiative, persistence, self-confidence, sociability, influence, drive, motivation, integrity, task knowledge, and others. The researchers' important findings suggested that leadership traits can be innate or learned behaviors. The difference between the innate or the "great man" traits from the learned traits was a major shift in leadership theories.

Fiedler's work (1967) extended trait theories into a contingency theory that studied leaders' traits in conjunction with the situation in which the leader worked. Its theoretical assumption of effective leadership was to match his or her traits and style to the situation. The contingency theory proposed that certain leadership behaviors are effective in certain situations.

The situational theory of leadership is one of the more recognized approaches to leadership (Northouse, 2007); it implies that different situations require different leadership approaches. The leader assesses a particular situation and matches his or her style to the abilities and commitment of the employees to accomplish the organizational goals. The four distinct situational leadership styles are called supporting, coaching, delegating, and directing (Northouse). The behaviors in each leadership style represent levels of directive and supportive behaviors. The directing leadership style involves primarily one-way communication with employees. The leadership style is categorized by high directive and low supportive behaviors. The leader directs the work of others and

focuses primarily on the achievement of organizational goals. Little time is spent providing social and emotional support to employees. The leader instructs the employees as to the work to be done and then closely monitors the completion of goals (Blanchard, Zigarmi, & Zigarmi, 1985).

Supportive leadership style involves two-way communication with employees in which the leader asks for input, problem-solves with employees, motivates, and shares information. The supporting leadership style is distinguished by a set of behaviors that are high in providing support and low in directing the daily work of others. The leader provides emotional support and encouragement to bring out the skills of others.

Listening, providing opportunities for input, and praise are the dominant behaviors of the leader.

Coaching is a situational leadership style that is high directive and high supportive. The leader engages the employee in problem-solving to meet the goals of the organization and addresses the social and emotional needs of the employees. The leader directs the daily work and the final decisions remain with the leader.

Delegating is another situational leadership style distinguished by behaviors that are low supportive and low directive. This style facilitates employees' confidence in their ability to do a task. The leader lessens her direct involvement and relinquishes much of the planning and implementation of goals to the employees. The situational approach is illustrated in Figure 1.

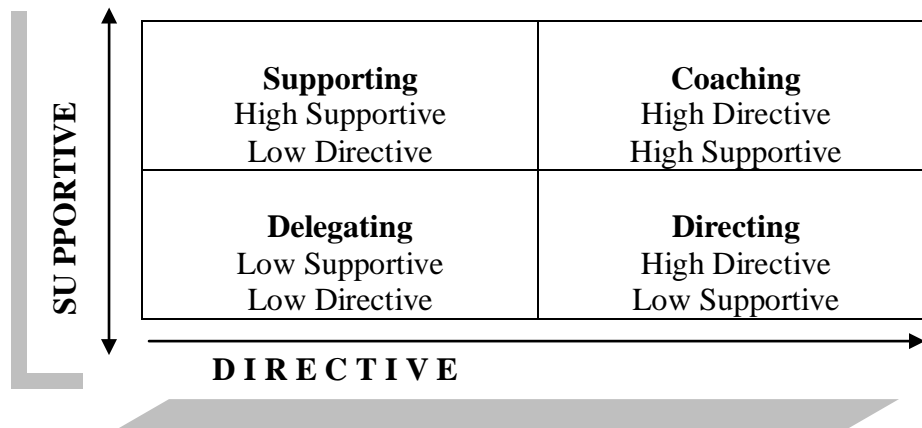


Figure 1. Situational leadership approach.

Burns (1978) developed a leadership construct of transformational leadership. Transformational leadership approaches describe leadership behaviors that connect the goals of the organization to the employees' needs. The transformational leadership approach includes many of the characteristics of trait leadership theories such as charisma and vision. The leadership approach is focused on building a follower's capacity to reach his or her full potential.

Bass (1985) expanded the conceptual framework of leadership to include transformational leadership, transactional leadership, and laissez-faire leadership. Transformational leadership is characterized by an inspired shared vision and collaboration to reach the goals of an organization. Transactional leadership can be described as exchanges, agreements, or promises that occur between the leader and followers that exclusively benefit both. The transactional leader may use coercion, negative feedback, and more negative reinforcement to reach objectives. The laissez-faire

leadership approach represents the absence of leadership--a hands-off approach--in which the leader abandons responsibilities for organizational goals and the capacity building of followers. These constructs launched an exploration of leadership in schools.

The construct of instructional leadership grew out of the Effective School Movement of the 1970s as a response to the well-known Coleman study (1966) entitled *Equality of Educational Opportunity*. This startling report caused educational researchers to study the school-level factors of student achievement, specifically the educational conditions experienced by the poor (Brookover & Lezotte, 1979; Edmonds, 1979a; Edmonds & Frederiksen, 1978; Lezotte, 2001; Purkey & Smith, 1983; Raptis & Fleming, 2003; Rutter, Maugham, Mortimore, Ouston, & Smith, 1979). As a result of these studies, effective leadership was described within a theoretical construct of an instructional leader. For the past 25 years, instructional leadership became the most promoted image in K-12 schools (Beck & Murphy, 1993; Greenfield, 1987). Some research findings suggested that the principal as the instructional leader could influence the outcomes of student achievement directly by impacting curriculum and instructional practices within the classroom.

In a study to investigate the effects of school principals' behaviors on student achievement, Leithwood (1994) examined the research of transformational leadership practices in the context of K-12 school restructuring. Leithwood noted that the reform model of the Effective School Movement era addressed reform in the elementary schools. Principals exercised greater control, monitoring, and influence over instruction. He asserted that this instructional leadership approach embedded in transactional theory of control is limited in producing significant reform in school-wide instructional practices

and in-school processes. The instructional leadership approach, however, is difficult to exercise given the size and complexity of secondary schools (Leithwood).

Leithwood (1994) suggested that school restructuring is a transformational model of leadership and is directed primarily at secondary schools. The role of the instructional leader in the 1970s and 1980s that focused on curricula and instruction with direct involvement by the principal is insufficient for schools and requires a different change paradigm to meet the demands for 21st century schools (Leithwood). According to Leithwood, all principals need to be transformational leaders. The knowledge and skills needed by principals require both first order and second order change. Leithwood described first order change as changes in curricula and instruction. Second order change is the sustainability of change, transformation of the organizational structure, and culture. According to Leithwood, effective leaders must create and sustain organizational effectiveness through their influence over others by connecting followers to a shared commitment.

The transformational leader is characterized by emerging practices and in-school processes of school restructuring. Transformational leaders emphasize the empowerment of teachers as leaders, building teachers' commitment to change, and understanding the psychological disposition, goals, and motivation of the staff (Leithwood, 1994). Transformational leadership is described as value-added in producing the factors for second order change necessary to sustain school improvement.

The Urgency for Effective School Principals

School principals are propelled to the forefront of educational reform to meet the various accountability measures of local, state, and federal mandates. Reeves (2005)

enumerated the failure of public education reform efforts, the fads, and ill-conceived innovations that have littered the educational landscape the latter half of the 20th century (Reeves; Marzano, 2003). The national demand for public school reform is imprinted in an era of accountability. Schools educate more students today with more learning needs than in the past 100 years (Reeves). A large number of students are leaving school without the necessary reading, writing, and math skills to do well in employment or life (Reeves). Developing effective school principals to address the needs of all students has become a moral imperative to ensure opportunities for all students to participate in a democratic society (Fullan, 2003). The era of school accountability, social change, and 21st century demands is a challenge faced by the nation's educational systems.

The urgency for effective school principals who can ensure that all students learn at high levels can be seen in the statistics of student achievement. The achievement gap in the 1990s of low income children and children of color has remained stagnant or has continued to grow (National Center for Education Statistics, 2008a). Differences in reading skills in the early grades are predictive of the continual achievement gap. Only 30% of fourth grade students overall were proficient on the 2003 National Assessment of Educational Progress (NAEP) and just 11% of African American students and 12% of Latino students demonstrated proficiency (Education Trust, 2004).

According to 2007 NAEP 4th grade reading scores, 16% of African American students, 20% of Latino students, and 54% of White students were at reading proficiency or above (National Center for Education Statistics, 2008b). In this same year, the achievement gap in reading between African American students and White students was smaller than in the previous year. However, the achievement gap between Latino students

and White students showed no measureable change since 1990. The achievement gap in math between 8th grade African American and White students was 32 points and 26 points between Latino and White students as reported on a scale of 0 to 500 for the year 2007 (National Center for Education Statistics, 2008d). The dropout rates by race and ethnicity showed significant differences: Whites showed the lowest dropout rates in 2006 of 6%, Black students were at 11%, and Hispanic dropout rates remained the highest at 22% (National Center for Education Statistics, 2008c).

Public schools play a major role in creating educational and life opportunities for all students (Fullan, 2003; Schmoker, 2006). School principals have a vital role to play in shaping the organizational capacity to improve and sustain high levels of student achievement. In a groundbreaking report, the importance of school principals in leading school reform was amplified (Leithwood, Louis, Andersen, & Wahlstrom, 2004). The report concluded that the role of the principal is highly significant but underestimated in a theoretical construct for improved teaching and learning. The critical role of the principal resonated in the research of Leithwood et al. “Leadership is second only to classroom instruction among all school-related factors that contribute to what students learn at school.... There are no leader-proof reforms--and no effective reforms without good leadership” (The Wallace Foundation, 2007, p. 5).

Statement of the Problem

Although 35 years have provided frameworks of what effective school leaders do, there is little evidence that clearly articulates the necessary behaviors, practices, and sense-making of leaders (Hallinger & Heck, 1996, 1998; Hallinger & McCary, 1990; Murphy, 1988; Witziers, Bosker, & Krüger, 2003). Hallinger and McCary stated:

Instructional leadership is, therefore, more than the exercise of discrete functions such as setting goals and monitoring student progress. Recent studies support a view of instructional leadership as a complex role that is dependent on personal, contextual, and organizational factors. These findings highlight the importance of the thinking and problem-solving processes that underlie the instructional leadership behavior of principals. (p. 91)

Few studies exist to map the effective behaviors, practices, and sense-making of principals, particularly in challenging school contexts such as high poverty and high minority school populations. While educational leaders have been successful in reversing the downward spiral of low-performing schools, the actual numbers of turnaround, high performing, and high needs schools have been few (O'Donnell & White, 2005; Witziers et al., 2003). More studies are needed on the triangular relationship of low socioeconomic status (SES) students, principal instructional leadership behaviors, and student achievement. The intent of this study was to illuminate the behaviors, practices, and sense-making of effective school principals in challenging schools.

Purpose of the Study

The purpose of this study was to examine the behaviors, practices, and sense-making of effective principals who have significantly shown a positive impact on teaching and learning in challenging school contexts as measured by student achievement on state standards assessments. The study sought to develop a grounded theory to build a conceptual framework by operationalizing the behaviors and practices of school principals in challenging schools with high student achievement. Mixed results exist in studies of principal effects on student achievement (Bosker & Witzier, 1996; Hallinger & Heck, 1996). Heck, Larsen, and Marcoulides (1990) also explained that the ambiguity of principal effects on student achievement is due in part to the lack of a clear definition of instructional leadership, the types of variables used in analysis (e.g., gender, training,

leadership styles), and the failure to apply methodologies that allow for examination of causal relationships between principal behaviors and student achievement. Earlier studies were limited by their methodological designs, lack of sophisticated statistical models, and blended approaches to data collection and interpretation (Witziers et al., 2003). This study addressed the instructional leadership of the principals and used a mixed methods approach to data collection to build a grounded theory of effective principals in challenging school contexts.

It was anticipated that this study would yield new insights and understandings as to the behaviors, practices, and sense making of effective school principals in challenging school contexts. Through a grounded theory approach of discovery, a theoretical framework for effective principals might add to a growing body of knowledge to inform educational leaders and practitioners as to how principal effectiveness is created and sustained for higher student achievement. The study might also inform educational leaders as to how we can better educate, train, and develop school principals. Finally, the information might advance conversations between educational leaders and policy makers on how to develop a cohesive system of reform using the knowledge as to how principals influence teaching and learning.

This study addressed three fundamental research questions:

- Q1 What are the behaviors and practices of principals in challenging public school contexts of schools that demonstrate high student growth?
- Q2 What are the teachers' perceptions of principal leadership and the instructional climate in challenging school contexts of schools that demonstrate high growth?
- Q3 What is the phenomenon of "sense-making" of effective school principals in challenging school contexts that links to systemic changes in the school?

Design of the Study

In an era of school reform and restructuring, further investigation is needed of the behaviors, practices, and sense-making of effective school principals in challenging school contexts. A mixed methods approach that included quantitative survey data and qualitative interview data was applied to expand our understanding of effective school principals in challenging school contexts. Surveys developed by the Consortium on Chicago School Research (CCSR; 2003) were utilized to gather teachers' perceptions of instructional leadership and the instructional climate and were used in the triangulation of data: Instructional Leadership (INST), Peer Collaboration (COLG), Innovation (INNV), and Reflective Dialogue (REFD).

Two middle school principals and two elementary principals participated in this study along with their teachers. Four schools identified by the Colorado Department of Education as high growth schools as calculated by the Colorado Growth Model constituted a purposeful sampling. The four schools were selected from a pool of eligible schools in the state of Colorado meeting specified requirements. Teachers from the selected schools were invited to participate in the CCSR surveys. The content areas included in the study were reading, writing, math, and science. A 60% or above response rate was expected. The electronic data were stored in a data file secured by the researcher's password. Only the researcher had access to the data file.

The intricacies of principals' behaviors, practices, and sense-making were explored through a semi-structured interview and the qualitative research methodology of grounded theory. Grounded theory is a methodology developed by Glaser and Strauss (1967) for the purpose of using data to build theory. It is a process of induction to extract

meaning from data, gain insights, and develop empirical knowledge (Corbin & Strauss, 2008). The emergent themes would unveil the perceived behaviors, practices, and sense-making of principals that move schools to greater efficacy and higher student achievement.

Research on leadership effectiveness has been populated by positivist philosophy through leadership inventories and statistical methods of measurement (Gilstrap, 2007). Practitioners are able to examine the correlates of effectiveness; however, the findings may not provide greater insights to understand the “being” of effectiveness. The design of this exploratory, mixed methods study allowed for the interpretation of statistical and reflective insights to uncover the behaviors, practices, and sense-making of effective school principals in challenging school contexts.

Definition of Terms

The following terms are defined relative to the context of this study:

Accountability system. Measureable indicators associated with student achievement, i.e., teaching, curriculum, leadership, parent involvement (Reeves, 2005).

Challenging school contexts. Elementary or secondary schools with demographics of 50% or greater minority student population and 50% or greater poverty ratio as defined by federal guidelines of the free or reduced lunch program to schools.

Colorado Student Assessment Program (CSAP). Colorado’s summative assessments in grades 3 through 10 of student performance in the content areas of reading, writing, math, and science. These assessments measure students’ proficiency in the Colorado Model Content Standards. The scores range from 150 to 999. Proficiency

levels of Unsatisfactory, Partially Proficiency, Proficient, and Advanced are defined using CSAP scores above certain cut points (Colorado Department of Education, 2009).

Colorado's Academic Growth Model. A statistical tool that provides longitudinal data from one CSAP administration to the next on how much growth each student made on each test of writing, reading, and math in comparison to similar students' performance in the past year in the same grade and test. The statistical tool calculates a student growth percentile. Growth percentiles are from 1 to 99. For example, a student with a score in the 60th percentile means that since the student's previous year CSAP, the score was higher than 60% of similar students taking the same test. Colorado's Academic Growth Model is designed to predict the amount of growth a student must demonstrate to reach proficiency within three years or by 10th grade in reading, math, and writing. Schools receive an overall median growth percentile that is calculated by combining the reading, writing, and math growth percentiles of all eligible students. Schools are then rated low, typical, or high growth on the State Accountability Report (Colorado Department of Education, 2008a).

Effective school principal. A principal with the ability to influence others to achieve the academic achievement goals as measured by Colorado's Academic Growth Model.

Sense-making. The meaning given to a situation or event derived from problem-solving and reflective thinking. It is a problem-solving process in which individuals use information and previously held mental models of experiential learning to create understanding and to act in a proper manner (Kim, 1993). Sense-making is the *gappiness* between the principal's constructions of events and the *real*. Dervin (1999) described

gappiness as the distance between the ontology or the essence and the epistemology--how we know. Sense-making is the meaning derived from the gappiness.

Significance of the Study

This study has implications for school leaders as they reform, restructure, and create new models of schooling to meet the needs of students. The study may provide a road map for school leaders of self assessment and training needs for professional growth and development.

Research studies were limited that examined the relationship between school principals and student achievement. Studies focused on the characteristics of leaders' behaviors related to general constructs such as Change Agent or Visionary; however, these left practitioners with little direction to distinguish the actions and sense-making of principals that created the conditions to effect student achievement.

This study might provide further insights into the complex skills and strategies essential for today's school principals to bring about organizational effectiveness and higher student achievement in challenging school contexts. The study might also illuminate the nature of effective school principals by revealing the principals' *sense-making* in creating the changes needed to improve schools. A derived grounded theory would help educational leaders understand how principals influence and sustain higher levels of student achievement. The study also had implications for the selection, staff development, and training of school leaders. The findings further added to the body of research in school leadership.

Delimitations of the Study

The boundaries of this study were situated in both positivist and constructionist ways of knowing. Statistical data and exploratory inquiry needed careful analysis to bridge their direct connections. Examining effective school principals through a grounded theory methodology and survey research offered the opportunity to explore the intrinsic and interconnected processes of sense-making--behaviors and practices of effective school principals in challenging school contexts. The researcher was careful to consider the potential threats to a mixed methods data analysis design. Creswell and Plano Clark (2007) noted the potential threats to validity when selecting unequal sample sizes for the qualitative and quantitative data set; lack of exploration of contradictory findings, failure to bracket biases, and assumptions may influence the interpretation of data or inadequate approaches to data conversion or discussion. However, given these threats to the validity of the findings, several safeguards were suggested to minimize these threats (Creswell & Plano Clark). The researchers suggested a check for accuracy of the transcripts and going back to the source to confirm the interpretation of the data. The researcher must constantly be aware of personal biases and assumptions in the interpretation of data. A panel of three principals was used in the review and interpretation of data to safeguard potential threats to the study, a triangulation of data, and member-checking (reviewing ideas with participants for confirmation; Charmaz, 2006)

The unit of study was four school principals from four separate schools located in a metropolitan school district in Colorado. The intuitive and thinking processes of principals that are often unexamined were explored through interviews. St. Germain and Quinn (2005) investigated the impact of tacit knowledge in educational leaders' problem-

solving abilities. Tacit knowledge of individuals is developed from experiences. Polanyi (1967) developed a theory of tacit knowledge that incorporated intuition, insight, and hunches. He emphasized tacit knowledge as the pre-logical stage of knowing. Through interview data, an inquiry into the tacit knowledge of principals was conducted to aid in the understanding their effectiveness. As constructed and experiential knowledge was integrated by the principals, the qualitative data were based on the principals' perceptions of reality. The teacher survey was used to validate principals' behaviors and practices and the instructional climate that exists in challenging school contexts.

The study was limited to selected schools in an urban school district in Colorado rated as making significant progress in student growth at or above 65th percentile. A school's overall student growth was determined by the Colorado Academic Growth Model. Selected schools had demographical data of 50% or greater minority student population and a 50% or greater free and reduced lunch student population. Colorado's School Accountability Reports were used to determine this criterion (Colorado Department of Education, 2008b).

A web-based survey was distributed to teachers in the selected schools. Surveys are self-reporting instruments for data not gathered through direct observations. Teacher responses to the self-reporting survey, a perception instrument used to evaluate how well a particular practice is embedded, varied among the participants. Participants' responses to the web-based survey were limited by the computer literacy skills of the respondents.

Some factors of school leadership were excluded from this study that might have an impact on student achievement. The study examined specific behaviors and practices promoted and monitored by the principal and confirmed by teacher perceptions that had

an impact on teaching and learning. The sense-making of effective principals in challenging school contexts was explored through interviews by the researcher. The researcher and the teacher survey were the primary instruments in data collection; the researcher needed to *bracket* biases to ensure accurate interpretations and insights revealed in the data.

Personal Research Stance

The field of educational leadership has encompassed much of my life's work. I have been a school principal for over 20 years. Much of my work has been in schools of medium to high poverty and a high population of minority students. With more than 30 years in education, my experiential knowledge has contributed to any notable success as a principal. Continuous pursuit of knowledge in teaching and learning has broadened my understanding of the phenomenon of sense-making of effective school principals, but much remains unknown. The complexity of leadership in the socio-cultural context of schools necessitated a multifaceted approach to unveil the behaviors, practices, and the sense-making of effective school principals. Newly developed statistical methods have identified the outcomes of effective leadership; however, the internal schema of the lived experiences that guides the leader is scarcely understood. By suspending my preconceptions about leadership theories, tacit understandings, and knowledge, it was possible to connect student achievement with the phenomenon of effective school principals and to develop a grounded theory that would further guide the work of school leaders.

Summary

The educational policies and growing internal social and economic disparities found in our nation and in our public schools have baffled educational leaders. Urgency exists for effective school leadership. The No Child Left Behind (NCLB) Act (2002) asserted stringent accountability rules on schools serving low income students as a response to the overall decline in student achievement. A review of the literature expounds the critical role of the principal in organizing a school for continuous improvement. Effective leadership behaviors and practices summon further investigation given the skills and knowledge school principals must possess to be successful in challenging school contexts. Leadership theories and conceptual frameworks abound; however, translating theory into practice and illuminating the behaviors, practices, and sense-making of effective school principals for deeper understandings necessitate further exploration.

CHAPTER II

REVIEW OF THE LITERATURE

In the last 60 years, major events shaped the country's expectations of public schools and led to legislative actions that demanded better outcomes from schools. In the 1950s with the Soviet Union's launching of Sputnik, intensity increased to teach science and math in universities and public schools as a means of preserving the country's status in the world (DuFour & Eaker, 1998; Marzano, 2003). The emergence of Japan as an economic power also intensified the country's fear of competing powers in the world (DuFour & Eaker). The public education system was blamed for the decline in supremacy (DuFour & Eaker). The *Nation at Risk* report (National Commission on Excellence in Education, 1983) declared that the United States' national security was at risk due to the failings of the public education system. This prompted a wave of reform (DuFour & Eaker; Schlechty, 2001).

In 2002, the No Child Left Behind (NCLB) Act was signed into law. It asserted stringent accountability rules on schools serving low income students. The NCLB demanded an accountability system from states that addressed the goal of 100% of students meeting state standards by the 2013–2014 school year (No Child Left Behind Act).

American public schools are compelled to demonstrate the ability to educate virtually all children. It is a daunting and challenging assignment; however, federal, state,

and local communities demand better results from the public schools. The ultimate challenge for practitioners is the translation of leadership theories, evolving tacit knowledge, and dimensions of problem-solving into a cohesive web of behaviors and practices that impact significantly on school efficacy and student achievement.

To explicate the context in which school principals' work, the review of literature synthesized effective school research, qualitative and quantitative studies that examined the effects of principals' leadership, explored the phenomenon of sense-making, and, in the new era of reform, examined schools of high performance and high needs.

Effective Schools Research

In the context of changing racial dynamics in the United States, the well-known Coleman (1966) Report cemented an assertion that the achievement gap between White and Black children was largely due to family background and the social and economic conditions of the group. Schools made little difference in impacting student achievement.

Edmonds (1979a) studied characteristics of successful urban schools serving largely high poverty and high minority students, thereby refuting the Coleman Report. Edmonds' results from a nationwide study of urban elementary schools with high minority and high poverty student populations found schools did make a difference (Edmonds & Frederiksen, 1978). The comparative research linked schools of similar demographics: school with low student performance with schools in which students were making high academic gains. Edmonds found that the effects of poverty could be amended and schools had a significant effect on student learning. Lezotte (1991) was the first to publish the characteristics or correlates of effective schools, which were later refined by researchers and widely used in school reform models (Creemers, 2002; Levine

& Lezotte, 1990; Marzano, 2003; Rutter et al., 1979; Scheerens, 1993; Teddlie & Stringfield, 1993). In the effective school research, the characteristics of successful schools were synthesized into seven correlates of effective schools (Lezotte, 2009): clear and focused mission, climate of high expectations for success, instructional leadership, frequent monitoring of student progress, opportunity to learn and student time on task, safe and orderly environment, and positive home-school relationship.

The research of Edmonds (1979a) and Brookover and Lezotte (1979) launched the Effective Schools Movement. For the past three decades, effective school researchers have studied school-level factors of successful high poverty and high minority schools. The results have shown that schools can educate all students “regardless of their socioeconomic status or family background” (Lezotte, 2009, p. 3). Effective school studies (Brophy & Good, 1970; Edmonds, 1979a, 1979b; Edmonds & Frederiksen, 1978; Klitgaard & Hall, 1975; Lezotte, Edmonds, & Ratner, 1974) had a momentous effect on the future direction of educational research and the development of comprehensive school improvement models.

Comprehensive school models encompass processes of the entire system, not just a single school, to improve student achievement. The following seven effective schools processes characteristically frame district and school improvement models: (a) Effective schools profiles--the collection of school data to determine goals and priorities; (b) District leadership team--district instructional support to teachers and principals at the school level; (c) Standards-based instructional redesign--alignment of curriculum, instruction, and assessment to national and state standards; (d) Grade level/departamental consultation--consultants facilitate the implementation of curriculum standards and

instructional practices; (e) School leadership team training and support--ongoing professional develop for the school-level and district leadership teams; (f) Principal training and support--training for principals in effective instruction, assessment, and monitoring of student progress, and school change and the implementation process; and (g) Data-guided decision-making through management of data--training of school and district instructional staff in data management systems to inform decisions (National Center for Effective Schools Research and Development, 2004). These processes expanded the underpinnings of effective schools research to embrace a systemic approach to school improvement.

Effective schools research has undergone some criticism. The tendency of the research to focus primarily on reading and math has removed other mediating factors from consideration. The effective schools research paradigm excluded some mediating factors from studies (i.e., other academic content areas, teacher quality, community factors, student motivation and resiliency) that may provide a deeper framework of understanding (Becker & Luthar, 2002; Marzano, 2003; Purkey & Smith, 1983). The lack of theory-based research and little experimental data caused skepticism about the generalizability of results from case study and poor methodological designs (Purkey & Smith).

It cannot be assumed that adapting and implementing the correlates of effective schools will transform schools. Various factors (i.e., school-district resources, staff and community's commitment to change, resistance, efficacy of the leadership, teacher quality) influence student achievement (Argyris & Schön, 1978; Bridges, 1991; Haycock & Crawford, 2008; Morgan, 1997; Senge, 1990).

Researchers continue to study the effects of the correlates (Edmonds, 1979a), the ingredients, and school-level factors that influence student achievement (Englert & Barley, 2008; Heck et al., 1990; Leithwood, Jantzi, & Steinbach, 1999; Marzano, 2003). The school-level factors are referenced throughout the literature since they have a strong correlation with student achievement. The comparison of school-level factors across researchers over the past 30 years has been reduced to five school-level factors: (a) guaranteed and viable curriculum, (b) challenging goals and effective feedback, (c) parental and community involvement, (d) safe and orderly environment, and (e) collegiality and professionalism (Marzano). Leadership was intentionally absent from Marzano's list. Leadership is a prevailing variable with indirect and direct effects across school-factors (Hallinger, Bickman, & Davis, 1996; Leithwood & Jantzi, 2006; Levacic, 2005; Marzano). Researchers differ somewhat in wording but there is agreement on the basic school-level factors that influence student achievement (Edmonds; Levine & Lezotte, 1990; Marzano, 2000; Sammons, 1999; Scheerens & Bosker, 1997).

An effective schools research literature review identified factors that contribute to student achievement; principal leadership was a prevailing variable to school efficacy and student achievement. Let us now examine the current research of principal effects on student achievement.

Principal Leadership and Student Achievement

In effective schools research, the principal as an instructional leader was shown to be correlated to student outcomes. Effective school research has focused largely on ethnographic or correlational data (Bossert, Dwyer, Rowan, & Lee 1982; Hallinger & Murphy, 1985). The lack of a clear conceptual model of an instructional leader, given the

broad nature of the principal's role, has made it difficult to discern the behaviors that affect student outcomes (Hallinger & Heck, 1996). Early in the research of principal effects on student achievement, Bridges (1982) illuminated the difficulty of investigating this area due to the lack of a well-substantiated theory of instructional leadership, methodology, and conceptual issues.

Heck et al. (1990) developed a causal model for instructional leadership effects on student achievement. The model integrated a coherent conceptualization of instructional leadership based on the work of Bossert et al. (1982), Hallinger and Murphy (1987), and Pitner and Hocoever (1987). The model's predictive factors could be generalized across all levels of schooling (Heck et al.). The study focused on the principal's instructional leadership and its effect on school processes and student achievement. Hallinger and Murphy identified three domains: defining the school mission, creating a positive learning climate, and managing the instructional program. Pitner and Hocoever identified 14 domains. Heck et al. used the following 9 of 14 domains to construct a predictive model of instructional leadership: shared leadership, an emphasis on performance, recognition, motivation of teachers, and clarity of responsibilities, communication, goal setting, planning, and facilitation. The domains of Hallinger and Murphy and Pitner and Hocoever were categorized (Heck et al.) as principal governance, school climate, and instructional organization. Heck et al. postulated:

How the principal governs the school's internal and external political environments (GO) will directly affect the principal's implementation of key instructional leadership behaviors within the domains of the work structure, including school climate (SC) and school instructional organization (IO). These variables, in turn, will directly affect student achievement (SA). (p. 100)

More recent studies have echoed similar findings--shared vision, a professional learning community, collaboration, high expectations for student learning, and strong school leadership (Harris & Chapman, 2002; Newmann & Wehlage, 1995; Waters, Marzano, & McNulty, 2003).

Hallinger and Heck (1996, 1998) asserted that principal effects on student achievement were difficult to measure in determining a cause and effect relationship. Witziers et al. (2003) acknowledged the difficulties of finding quantitative studies of rigorous designs and procedures for trustworthy results. In addition, empirical designs to examine the relationship of principal effects on student achievement have yielded conflicting results (Hallinger & Leithwood, 1994). With recent improvements in statistical tools, studies to examine the direct and indirect influence of principal effects have deepened our understandings of the dimensions of leadership (Hallinger & Heck, 1998; Leithwood, 1994; Leithwood, Begley, & Cousins, 1990; Leithwood & Jantzi, 2006; Leitner, 1994; Marzano et al., 2005; O'Donnell & White, 2005; Witziers et al., 2003).

Hallinger and Heck (1998) reviewed 40 studies conducted from 1980 through 1995 on direct and indirect effect models of the casual relationships between school leaders and student achievement. The researchers' analyses depicted the challenge to unravel complex external and internal organizational factors in attempts to establish a cause and effect relationship of principal effects on student achievement. The 40 studies selected were designed explicitly to examine principal effects on student achievement and indirect principal effects on teachers and school-level factors. The important contribution of this review scrutinized 15 years of findings from studies that articulated

clear empirical designs and theoretical multilevel models. Hallinger and Heck used the theoretical and multilevel models of Pitner (1988) to probe for principal effects: antecedent-effects, direct-effects, and mediated (indirect) effects. Principals' impact on mediated effects included the manipulation of features of the school organization. Antecedent effects such as the school's socioeconomic status (SES) were controlled to reconcile the impact of external school factors on student achievement. They concluded that the indirect mediated and antecedent-effect models showed a higher impact of principal effects on student achievement.

In a meta-analysis of 37 quantitative research studies and 25 studies by the International Association for the Evaluation of Educational Achievement (Witziers et al., 2003), the causal relationship of school principals' behaviors to student academic achievement was investigated in three concurrent meta-analyses. The multilevel statistical model was designed to delineate the factor moderators which may have caused the variation in the effect size (Witziers et al.). Witziers et al. found that four out of the nine leadership behaviors had a significant and positive relationship (.02 to .19) to student achievement: supervision and evaluation, monitoring, visibility, and defining and communicating the mission. The effect size of educational leadership to student achievement was low. The conclusions drawn by the researchers for studies using a single instrument in which leadership was viewed in one-dimension did not find a positive effect of leadership on student achievement; the analysis of several sub-dimensions of leadership in a multilevel model revealed a small but positive effect.

Other studies corroborated the findings of single versus multilevel instructional leadership models (Hallinger & Heck, 1998; Leithwood & Jantzi, 2006; Marzano et al.,

2005). Marzano et al. identified 21 leadership responsibilities that had positive statistical significance on student achievement. They developed a framework that better described the knowledge, skills, and strategies school leaders needed to produce positive results of student achievement. The findings indicated an average effect size of 0.25 between leadership and student achievement. Marzano et al. also found that certain leadership competencies had a negative impact on student achievement. The school leader had an adverse effect if the focus of the change was only first order--an extension of the existing knowledge, skills, strategies, and resources versus second order change--the break from past knowledge and experiences to challenge the status quo (Marzano et al.). Second order change denotes the efficacy of the school leader and the staff to sustain continuous school improvement. In an age of growing global competitiveness, "... schools have been making incremental progress in an exponential environment (Houston, 2007, p. 2). More progress is needed to create life opportunities for all students.

As a direction advocated by researchers for further investigation of indirect principal effects on student achievement, the literature yielded only a few studies (Hallinger & Heck, 1998; Witziers et al., 2003). A study conducted by Leithwood and Jantzi (2006) examined the direct and indirect effects of transformational leadership practices on teacher motivation, instructional capacity, work setting, and classroom practices. This study was noted for the specific impact of transformational leadership on student achievement and the explicit analysis of direct and indirect leadership behaviors and practices noted in the literature as influencing student achievement. The research model of qualitative and quantitative studies focused on the principal effects of influencing others and mediating factors such as resources, training, and materials. The

researchers used data from a multi-year evaluation in literacy and numeracy--England's national literacy and numeracy strategies study of literacy and numeracy. Leithwood and Jantzi investigated the influence of transformational leadership on teachers' motivation, instructional capacity, work settings, and classroom practices. The gains in student achievement were examined in relationship to these mediating, indirect variables.

Leadership in all six analyses showed that the strongest relationship was with work settings--teachers' collective practices related to the implementation of cultural norms in the school (.65 to .79). The next strongest impact was teacher motivation (.56 to .67). The third largest effect size was on instructional capacity (.42 to .58). Transformational leadership practices showed the least impact on classroom practices (.12 to .23). Differences in perceived leadership impact by teachers explained a significant percentage of the variation in classroom practices. The researchers concluded that overall, teachers' perceived levels of principal effects of transformational leadership were low for providing individual support in the implementation of reading or writing strategies. In summary, the model did not explain the differences in student achievement gains. Emerging models of principal effects on student achievement suggest that the effects are indirect (Leithwood et al., 1990; Leithwood, Jantzi, Silins, & Dart, 1994; Witziers et al., 2003).

The leadership practices that influence student achievement can be described in domains of school-level, teacher-level, and student-level factors (Leithwood, Anderson, Mascal, & Strauss, 2009; Marzano, 2003). The four domains (Leithwood et al.) embedded in the actions of principals can be delineated across school-level, teacher-level, and student-level factors. The four domains are represented as rational path, emotional

path, organizational path, and family path in which the principal's influence positively affects the school-wide and classroom experiences of students (Leithwood et al.). The pathways are interconnected and principals need to align and address factors at the school, teacher, and student levels. "Organized around 'four paths,' the evidence ... implicitly rejects narrow conceptions of instructional leadership as far too simplistic a view of how school leaders in 'heads' or 'principals' positions can improve education in their organization" (Leithwood et al., p. 10).

Hattie's (2009) synthesis of 800 meta-analyses, one of the largest to date, detailed the significant impact of teachers' classroom practices on student achievement. Nye, Konstantopoulos, and Hedges (2004) reported that in the 18 studies investigated, teacher effectiveness showed a 7% to 21% variance in student achievement gains. This is an average effect size of .32. One standard deviation of teacher effectiveness means a growth of one-third standard deviation for student achievement (Hattie). In low socioeconomic status schools, the effect size of teacher effectiveness was much higher. Nye et al. stated the larger effect size is due to the uneven distribution of teacher effectiveness in low socioeconomic status (SES) schools than in high socioeconomic status schools. In a summation by the researchers, it matters more in low SES schools which teacher a student receives than it does in a high SES school. Principals play a critical role in creating the instructional environment in which teachers work and students learn (Alig-Mielcarek, 2003; Leithwood et al., 2004).

Given the research of the past 35 years, many researchers concluded that schools make a difference and school principals have a positive influence, directly and indirectly, on student achievement (Brookover, Beady, Flood, Schweitzer, & Wisenbaker, 1979;

Edmonds, 1979a; Levine & Lezotte, 1990; Sammons, Hillman, & Mortimore, 1995; Marzano et al., 2005).

Leadership Studies in Challenging School Contexts

Hallinger and Heck (1998) indicated that principal effects provided descriptions of pathways in which school leaders influenced student achievement; however, the distinguishable behaviors and practices in understanding the principal effects were not resolved particularly in understanding the interplay of school leaders with contextual forces. Few studies have examined principal effects in challenging school contexts (Hallinger et al., 1996; Hallinger & Heck, 1996).

Hallinger et al. (1996) constructed a robust principal effects model to investigate the mediated and antecedent variables that included challenging school contexts. Principal instructional leadership, instructional climate, instructional organization, and school effectiveness were the mediating variables in their study of reading achievement. The antecedent variables examined the school's socioeconomic status, parent involvement, principal gender, and teaching experience. The findings also suggested that mediating and antecedent variables on principal effects to student achievement could be better illuminated through indirect leadership models that accounted for the effects of school context, connected theoretical variables, and student performance results.

A further review of research studies provided additional constructs for the interplay of principal effects with the contextual forces of high poverty and high minority student populations. Marks and Printy (2003) conducted a school restructuring study of school leadership in 24 selected restructured schools (8 elementary, 8 middle, and 8 high schools) across the United States. These schools came from a pool of 300 restructured

schools, identified as making academic progress from a national search by the Center on Organization and Restructuring of Schools. The public schools were primarily from urban settings with a substantial proportion of high poverty and high minority students. The researcher examined the effects of transformational and shared instructional leadership on school performance measured by the quality of instruction and the achievement of students. The data revealed that schools which demonstrated minimal transformational leadership and shared leadership (low leadership) tended to be smaller than the other schools and enrolled the largest proportion of high poverty students (51%). The schools that were high in transformational leadership and high in shared instructional leadership tended to enroll the smallest proportion of high poverty students (24%). The minority and high poverty students were disproportionately higher in low and limited leadership schools. The National Assessment of Educational Progress (NAEP) achievement data of students in low leadership schools had a negative (-0.36) standard deviation (*SD*) from the norm. Limited leadership schools were 0.13 *SD* and integrated leadership schools were 0.36 *SD* above the norm. The students in the integrated leadership schools showed significant progress above the performance of their peers (Marks & Printy). Marks and Printy concluded that low leadership was more likely to be found in schools that had a larger proportion of poor, minority, and low achieving students. The data revealed that effective school leadership and instructional quality are central to the academic improvement of high poverty, high minority, and low achieving schools.

The Mid-Continent Research for Education and Learning (McREL) study (2005) looked at components of school processes and leadership to differentiate high-

performing, high-needs schools from low-performing, high-needs schools. Seventy-six high-needs schools, 49 high-performing, and 27 low-performing schools participated in the study. This study was particularly unique in differentiating high-performing, high-needs school from low-performing, high-needs school (Togneri & Anderson, 2003). The study acknowledged the success of the isolated pockets of high-performing, high-needs schools of excellence as highlighted by the Education Trust (1999).

The McREL study (2005) addressed distinctions within high-performing and low-performing, high needs schools. A theoretical model derived from research represented systematic pathways, links that connected school processes and leadership to increased student achievement. The four areas--Instruction, School Environment, Professional Community, and Leadership--represented the latent variables in the factor analyses. Subcomponents, the observable variables, were assigned to the latent variables of Instruction, School Environment, Professional Community, and Leadership. Instruction had three subcomponents: structure of classroom routines and high expectations; individualized classroom instruction, the use of student data, and resources to individualize and tailor instruction to the needs of students; and opportunity to learn cognitively demanding curriculum. School Environment had four subcomponents: orderly climate, assessment and monitoring, parent involvement, and academic press for achievement. Professional Community had three subcomponents: collaboration, professional development, and support for teacher influences. Leadership had three subcomponents: instructional guidance, organizational change, and shared mission and goals. The latent variables and subcomponents were a synthesis of school-level factors of

effective schools (Edmonds, 1979a; Levine & Lezotte, 1990; Marzano, 2000; Sammons, 1999; Scheerens & Bosker, 1997; Teddlie & Reynolds, 2000).

The McREL study (2005) revealed several insightful findings. A single model fit both high-performing and low-performing, high needs schools. The results suggested that reconstituting low-performing schools might not be the appropriate approach to increased student achievement. Building the school's capacity in the key components might have a substantial effect. Further results indicated that Leadership's strongest relationship was with School Environment (0.88/0.84). The relationship between Leadership and Professional Community (0.72/0.77) was significantly strong. The relationship between Leadership and Instruction had an inverse relationship (-0.29/-0.33). Large variance was shared among other school-wide variables--Leadership, Environment, and Professional Community (McREL). The researchers reasoned that the relationship of Leadership to Instruction was indirect, mediated by other school processes (Hallinger & Heck, 1996; Heck et al., 1990).

The direct pathway of School Environment to Professional Community did not indicate a significant relationship (0.08/0.08). When all of the variables were added to the model, Professional Community did not relate directly to School Environment although it was recognized in the literature as a key component of effective schools (DuFour & Eaker, 1998; Marzano, 2000, 2003; Scheerens & Bosker, 1997). The path of School Environment to Instruction showed a significant relationship (0.52/0.55). This link was significant in connecting the relationship of School Environment to Instruction. Orderly climate, a culture of high expectations and academic press (a relentless focus on student growth) contributed to increased student achievement (Alig-Mielcarek, 2003; Borman &

Rachuba, 2001; Teddlie & Reynolds, 2000). The McREL study (2005) detected differences in school-level processes in high-needs schools that influenced student growth.

To understand the effects of school context, the Consortium on Chicago School Research (CCSR; 2008) has studied school restructuring effects since 1990 in Chicago Public Schools. Empirical data were collected from a seven year reform initiative that established small high schools in urban areas of high poverty, high minority students (Consortium on Chicago School Research). The successful outcomes of student academic growth were greatly mixed; however, three small high schools with demonstrated student growth were selected for further study as measured by higher freshmen on-track rates, higher grade point averages than students attending similar schools, and student survey results linked to instruction or student-teacher relationships. The researchers of Chicago School Research found similarities among the three schools: evidence of academic rigor, student engagement, and “positive and supportive student-teacher relationships” (Consortium on Chicago School Research, p. 5). These findings were significant in confirming school-level factors of organizational effectiveness as found in the effective schools research. In-school processes and routines were described in the study such as grade and department level collaborative structures and shared responsibilities of teachers and principals for monitoring instruction. The commonalities could not be considered as causes for increased student achievement but served as directional trends in organizing schools and examining the interplay between teachers and principals who created the conditions for improved student achievement (Consortium on Chicago School Research).

*Alternative Paradigm for
School Improvement*

An intriguing supposition surfaced in the literature by organizational theorists and educational researchers. The supposition opened the possibility that educational beliefs and practices are enmeshed in a worldview that is counter to schools' social organization (Blau & Scott, 1962; Peters & Waterman, 1982; Sergiovanni, 2007a; Strike, 2004). What if school reform efforts are operating under the wrong theories and practices in the wrong paradigm? Sergiovanni advanced the premise that we are using the wrong theories for leadership and the wrong theories for school improvement. Only small incremental progress can be made in education and little sustainability of improvement when the system operates under an epistemology that is not aligned with practices, i.e., "wrong theory wrong practice" (Sergiovanni, p. 50). Sergiovanni derived his supposition from the early works of two organizational theorists, Blau and Scott, who purported that "...some organizations are best understood as social rather than formal" (as cited in Sergiovanni, p. 51). In organizational cultures, formal ones such as the military, corporations, and banks operate under a different set of beliefs and practices than social organizations such as churches and families. Epistemologies are worldviews that shape our reality--what we notice in the world. Epistemologies are the collected worldview of many people and form "a community of practice" (Sergiovanni (p. 50). Sergiovanni proposed that the epistemology of social organizations is a better alignment for schools than current formal organizational behaviors and practices of schools. Other researchers (Bossert et al., 1982; Bridges, 1982; Hallinger & Heck, 1996; Hallinger & Murphy, 1987; Northouse, 2007) have raised speculations of the validity of educational research and generalizability due to its borrowed leadership and organizational theories and practices from other disciplines.

Epistemologies are essential to a field in its ability to generate strong coherent practices, to build knowledge, and a framework to create meaning (Sergiovanni):

The stronger a field's epistemology, the more that field is able to develop its own practices. Weak fields have difficulty pushing ahead to new ground. Because weak fields can't go it alone and must rely on excessive borrowing, they look to other fields for new knowledge and new practices. Whether or not this knowledge fits the school is another question, but good fits are rare. (p. 53)

Sergiovanni (2007a) asserted that our knowledge of school leadership and school improvement is grounded in formal organizational beliefs and practices--corporate and bureaucratic social order. As an example of differences in formal versus social organizations within formal organizations, corporate incentives would be given to departments that produced the most; less financially meritorious departments would be subject to downsizing or elimination. In a school, similar to the norm of a family, distribution of resources would be given to individuals in need regardless of past performance. The norms of formal organizations would funnel resources to children who have demonstrated merit and not need. Schools and other social institutions differ from formal organizations in their values, beliefs, and culture. "If you want to improve the school, use the theories and practices that apply to social organizations. Viewing schools as learning and caring communities helps" (Sergiovanni, p. 57). An alternative worldview of school leadership and school improvement provides an avenue for different theories and practices to emerge. If educators are serious about reforming schools, then they must consider new worldviews of leadership. Sergiovanni states, "For many leaders, nothing short of a transformation in their theories and practices will be required" (p. 52). This study utilized a constructionist approach to access other worldviews of leadership.

The Phenomenon of Sense-Making

Sense-making as a phenomenon was explored in this study to understand how school principals made decisions that moved their schools forward. Sense-making is defined as the meaning given to a situation or event that is derived from problem-solving and reflective thinking. It is a problem-solving process in which individuals use information and previously held mental models of experiential learning to create understanding and to act in a proper manner (Kim, 1993). It is "a motivated, continuous effort to understand connections which can be among people, places, and events in order to anticipate their trajectories and act effectively" (Klein, Moon, & Hoffman, 2006, p. 71).

Dervin's (1992) model of sense-making describes the *cognitive gap* between the imminent situation and the desired outcome. The cognitive gap is bridged by the individual's strategies to define the gap—"gap-defining" and information searching--"gap-bridging" to resolve the inconsistency across time and space of what is known, past experiences, and the new situation (Dervin, p. 66). The exercise of sense-making, leadership efficacy, and tacit knowledge involve gap-defining and gap-bridging. A review of the literature examined the interface of sense-making with leadership efficacy and tacit knowledge. These components could enhance our understanding of school principals' sense-making that impact student achievement.

Leadership efficacy as a quality of sense-making is the individual's perceived leadership confidence to ".....organize the positive psychological capabilities, motivation, means and courses of action required to attain effective, sustainable performance across a specific leadership domain" (Hannah, 2006, p. 12). This connected to Klein et al.'s

(2006) definition of sense-making and Dervin's (1992) "gap-defining" and "gap-bridging" (p. 66). Bandura's (2001) human agency is explained as the capacity of an individual to exercise control and influence over their lives. The principal's sense-making entails confidence and leadership efficacy to influence others to achieve goals, to lead, and to manage an array of organizational structures to achieve the desired outcomes.

Hannah (2006) used the phrase *agentic leadership efficacy* (see also Bandura, 2001) to describe schemas of leaders' capacity and confidence in leading and managing the environment--the sociostructural influences. Sociostructural influences in a school environment are organizational structures, school and classroom factors, and district and school support structures. Bandura (2000) charted several ways personal and organizational efficacy is acquired. Modeling, goal setting, and guided mastery experiences are ways in which individuals and organizations can develop sense-making, thinking skills, and decision-making strategies. Personal agency or individual efficacy is developed through "post-event meaning-making" and reflections and the leader's ability to generalize the meaning-making to a broader leadership realm (Hannah, p. 13). "When faced with obstacles, setbacks, and failures, those who doubt their capabilities slacken their efforts, give up, or settle for mediocre solutions. Those who have a strong belief in their capabilities redouble their effort to master the challenges" (Bandura, 2000, p. 2).

The phenomenon of sense-making was examined as an association with leadership efficacy, problem-solving, and student achievement (Leithwood & Jantzi, 2008). Leithwood and Jantzi used path analysis to investigate the direct and indirect effects of school leadership efficacy on student achievement. The framework of the study explored school leaders' efficacy beliefs about their abilities to improve instruction and

student achievement and leaders' beliefs about the collective capacity of colleagues to impact student achievement growth. The study connected the phenomenon of sense-making--the exercise of control and influence over one's life (Bandura, 2000).

The causal model used by Leithwood and Jantzi (2008) explored the relationship and the antecedents of leadership self-efficacy (LSE), leadership collective efficacy (LCE), leaders' practices, school and classroom conditions, and student learning. The empirical evidence of antecedents for LSE and LCE was summarized in a table in the study (see Leithwood & Jantzi). Personal antecedents listed as pathways to leadership efficacy were gender, race, years of experience, leader self-esteem, and successful leadership experience. Several of the antecedents could be linked to Bandura's self efficacy theory (as cited in Leithwood & Jantzi): mastery experiences--successful experiences and ability to generalize experiences to future situations, vicarious experiences--learning from observation of a skillful model, and verbal persuasion--critical feedback from a mentor.

The results of the study indicated that LSE had the strongest relationship with managing the instructional program (.34), redesigning the organization (.28), developing people (.27), and setting directions (.23). The district leadership investment of developing instructional leaders had a greater effect on LCE than on the individual. The relationship between the self-efficacy of the leader and behaviors was weaker than anticipated. As noted by the researcher, indicators of the leader's behaviors might have little to do with how the leader's self-efficacy was perceived, i.e., appearing confident, calmness in the face of crises, regulating behaviors.

Leaders' efficacy had similar results on student achievement as leadership effects on school and classroom conditions. These results were consistent with other studies (Hallinger & Heck, 1996; Leithwood & Jantzi, 2006). Somewhat surprisingly, leaders' efficacy was stifled by such organizational characteristics as district size, school size, and level. Leaders' efficacy had a significant effect in elementary schools and no significant effect in secondary schools. Frequent leadership turnover in secondary schools might have had a negative impact on the results in secondary schools (Hargreaves & Fink, 2006; Leithwood & Jantzi, 2008).

Leaders' beliefs and self-confidence were affected by district conditions and their successful and unsuccessful experiences. Social cognitive theory situates the development of a leader's sense-making among a myriad of social interactions that include the application of cognitive and emotional intelligence (Goleman, Boyatzis, & McKee, as cited in Leithwood & Jantzi, 2008). The leaders' ability to adapt skills and knowledge through various means of learning and to generalize these experiences through self-reflections in a decision-making process expands the depth of the leaders' sense-making in countless contextual situations (Leithwood & Jantzi).

The thinking that underlines the behavior and practices of principals, the how and why of their actions, was not represented in the discrete descriptors of effective leaders (Hallinger & McCary, 1990). The descriptors of effective leaders in the context of schools support an understanding of the interdependency of critical areas of schooling. The discrete role of the principal in setting the direction, communicating the vision, for example, is "a complex role that is dependent on personal, contextual, and organizational factors (Hallinger & McCary). An exploration of the leaders' efficacy, thinking, and

problem-solving skills in the school's context is critical in understanding the sense-making of effective principals.

The strategic thinking and problem-solving of the principal integrate tacit knowledge. Tacit knowledge is defined as “practical wisdom” (Zeira & Rosen, 2000, p. 103) and intuition. Polanyi (1967) introduced the premise that “we can know more than we can tell” (p. 4). He changed the way in which we looked at science as being more than theory and facts. Polanyi distinguished tacit knowledge from general knowledge. It is the “active shaping of experience performed in the pursuit of knowledge” (Polanyi, p. 16). The principal's knowingness--“practical wisdom” (Zeira & Rosen, p. 103) and intuition--is shaped by experiences of everyday tasks and encounters. Tacit knowledge is rooted in experience but experience is not enough. How the principal integrates the experiences to generalize their knowingness to other challenging situation is required to solve complex problems. Tacit knowledge plays a major role in leader's effectiveness. The culminating effects of various challenging situations over time and the leader's self-reflections are integrated into the leader's knowingness that Tripp (1994) called “craft knowledge, that is, knowledge that is experientially derived, seldom articulated, but constantly and consistently acted upon” (p. 74).

St. Germain and Quinn (2005) investigated how tacit knowledge was used to solve problems by expert principals and novices when faced with contextual situations. The themes that emerged distinguished expert principals from novice principals. Expert principals used their accumulated tacit knowledge to *time* the introduction or the press for significant changes in the school. Hart, Bredeson, Marsh, and Scribner (1996) found that timing was a critical characteristic of judgment or intuition that distinguished expert

principals from novice. Novice principals made more errors in decision-making than expert principals (Hart et al., 1996). Expert principals anticipated and planned for possible obstacles in ways such as engaging in *if-then thinking*, preliminary problem analysis, effective interpersonal skills, and empowerment of the staff. Novice principals had poorer interpersonal skills, a limited repertoire of responses, minimal if-then thinking, and were more isolated in their initial problem analysis. Expert principals were able to use their tacit knowledge *to read the landscape*, anticipate problems, and initiate actions for school improvement (St. Germain & Quinn). The individual schemas are derived from experiential learning and conceptualized as personal theories about how the world works (Markus & Zajonc, as cited in Harris, 1994). The phenomenon of sense-making is actualized at the individual level and is shaped by the organizational culture (Harris).

Dispelling the Myth: School Leadership in Challenging School Contexts

To substantiate the need for more research of principal effects in challenging school contexts, the evidence of high performing, high needs schools was examined. Reeve's (2000) study in Milwaukee, Wisconsin of schools where 90% or more of the students eligible for free and reduced lunch, 90 % or more of the students were ethnic minorities, and 90% of these students were proficient on the academic standards of the states' assessments explicated the instructional and leadership practices of these schools that produced the extraordinary results in student achievement. The prevalent five characteristics of these high performing, high needs schools were "a focus on academic achievement, clear curriculum choices, frequent assessment of student progress and multiple opportunities for improvement, an emphasis on nonfiction writing, and

collaborative scoring of student work” (Reeves, 2005, p. 187). Schemo (2001) and Reeves (2005) identified *high flying schools* in challenging schools contexts in a variety of districts across the country. Schemo reported 3,592 nationwide high performing, high needs schools with 50% or more of its students either ethnic minority or 50% or more on free and reduced lunch. The principal effects of influencing positively student achievement were found in numerous case studies: for example: Harlem, New York; Mission City, Texas; Ajax, Ontario, Canada; Pittsburgh, Pennsylvania; Clay, West Virginia, and Wichita, Kansas (Cawelti, as cited in Walberg, 2005). Strong principal leadership was reported across these studies.

Contrary to the belief that high performing, high needs schools are evanescent and erratic in their year to year performance, a longitudinal study of 257 high-poverty California schools from 145 districts showed that schools maintained their pattern of high performance (Williams et al., 2005). These schools defied the “inextricable relationship between poverty, ethnicity, and academic achievement” (Reeves, 2003, p. 2).

The Education Trust (2008) honored four schools with the Dispelling the Myth Award. The schools were selected for closing the achievement gap and exceeding state standards with high poverty and minority students. Graham Road Elementary School, a school in Fairfax County, Virginia had 80% of its students on the free or reduced lunch federal program. Ninety-five percent of the students were non-White. In 2008, 100% of the school’s sixth graders, all of whom were Latino students, met the state’s reading standard with 70% of these students exceeding the standard benchmark. In math, 96% of these students met sixth grade math standards and 72% of the students exceeded the standard benchmark. An experienced principal was credited for leading the changes in

reading instruction, the use of student data, and creating a collaborative teaching and learning environment (Education Trust).

Wells Elementary School in Steubenville, Ohio was another 2008 Dispelling the Myth Award recipient. Wells Elementary School, an exemplary school in its district, had the lowest percentage of adults with a high school diploma in the state. Sixty percent of the students qualified for the free or reduced federal lunch program. Thirty percent of the school's population was African American with another 16% identified as non-White. The school had made exemplary student academic progress. One-hundred percent of third, fourth and fifth grade students met state standard expectations in reading and math in 2006-2007. Ninety percent of the students met social studies and science standard expectations. For four straight years, 100% of the students met reading and math standard benchmarks. Elements of effective schools were evident in the standardization and alignment of the curricula across the school and district, principal and teacher leadership, professional learning communities, and in the belief that academic success is possible for all children.

Illustrated in the two school examples were patterns of effective schools found in the literature (Education Trust, 2008). However, these school results were not the norm. Such exemplars provide a bridge to explore principal effects and organizational effectiveness in high poverty, high minority schools. Comprehensive studies are needed to uncover the sense-making of how principals in challenging school contexts create conditions to advance and to sustain student achievement.

Summary

Findings in the literature of principal effects on student achievement suggested that deeper understandings are needed to expand or to build theory of principal effects in challenging school contexts. Researchers called for a mixture of quantitative and qualitative data to reveal the phenomenon of principal effects on student achievement (Dwyer, 1986; Hallinger et al., 1996; Hallinger & Leithwood, 1994; Hallinger & Murphy, 1985). No uniform construct can explain the principal effects on student achievement as illustrated by Pitner's (1988) various research designs: direct-effects model, antecedent with direct-effects model, antecedent with mediated-effects model, reciprocal-effects and moderated-effects model.

The various studies in the review of literature provided conceptual frameworks for effective school principals, the frameworks having evolved over the past 35 years. The images of effective principals as instructional and transformational leaders appeared in the research and suggested the importance of the principal in creating and fostering the conditions for organizational effectiveness and higher student achievement. Obscured in this body of knowledge was a greater understanding of the phenomenon of the principal's sense-making in challenging school context--the behaviors, practices, reflections and sense-making that create the conditions for high student performance. How do these principals come to know what they understand about leading change for school reform? What principal behaviors and practices impact student achievement? The intent of this study was to explore the behaviors, practices, and sense-making of effective school principals in moving their schools forward to higher student achievement. It was the aspiration of the researcher to expand the knowledge of the specific behaviors, practices,

and sense-making of effective school principals and the understandings of how they created that success.

This study illuminated the behaviors, practices, and sense-making of effective school principals in high poverty and high minority schools to develop a grounded theory of why effective principals in challenging school contexts are successful. The study sought to uncover the nuances of the behaviors, practices, and sense-making of effective principals that guided the step by step positive direction to increased student achievement in addition to the ingredients of school effectiveness identified in the research.

Unfortunately, available research does not yet provide clear answers as to why some schools with similar demographics and resources differ in their degrees of success.

CHAPTER III

METHODOLOGY

Crotty (2003) reiterated the necessary congruency of methodology and methods with worldviews or paradigms. The methodology and methods identify the theoretical perspective and the related assumptions in a study. Researchers describe differences in worldviews (e.g., post positivism, constructivism, advocacy, and pragmatism) of quantitative, qualitative, and mixed methods research as distinct approaches in a well-designed study (Creswell, 2007; Creswell & Plano Clark, 2007). This research study examined quantitative and qualitative data in an embedded, concurrent mixed methods approach designed to investigate the behaviors, practices, and sense-making of effective principals in challenging school contexts. “Mixed methods research is defined as research in which the investigator collects and analyzes data, integrates the findings, and draws inferences using both qualitative and quantitative approaches or methods in a single study or program of inquiry” (Teddle & Tashakkori, 2006, p. 15). Greene (2007) attributed the advancement of mixed methods approaches to research to Cook’s (1985, as cited in Greene) theory of multiplism. This post-positivist challenged the puristic stance of positivism that limited multiple alternatives for knowing (Greene). The theory of multiplism expanded the belief that different inquiry paradigms such as positivism and constructivism can be compatible.

In selecting a research design, Tashakkori and Teddlie (1998) stated that the research questions should determine the method. “The best method is the one that answers the research question(s) most efficiently, and with foremost inference quality, trustworthiness, internal validity” (Taskakkori & Teddlie). The three research questions in this study were addressed more effectively through a mixed methods design.

The embedded design was selected to answer the research questions that could not be addressed in a single data set. Quantitative studies provide lists of effective leadership behaviors and practices. However, a deeper understanding of the contextual conditions, the actions, and interactions of the principal to make sense of the challenging environment was needed. Qualitative data of rich description facilitated the findings of behaviors and practices unique to effective principals, particularly in challenging public school contexts.

The mixed methods design aligned with the researcher’s pragmatic worldview. Pragmatism is associated with mixed methods research; pragmatics are focused on what works. Howe (as cited in Taskakkori & Teddlie, 1998) stated:

For pragmatists, “truth” is a normative concept, like “good,” and “truth is what works” is best seen not as a theory or definition, but as the pragmatists’ attempt to say something interesting about the nature of truth and to suggest, in particular, that knowledge claims cannot be totally abstracted from contingent beliefs, interests, and projects. (p. 28)

Mixed methods design is used to generate new ways of thinking and better understandings that would not be possible in a single methodology (Greene, 2007). The research study explored leadership behaviors and practices along with the thinking, problem-solving, and reflections of principals. The intent of the study was to expand the

knowledge of how effective school principals in challenging school contexts significantly impact student achievement.

The following three fundamental research questions were addressed:

- Q1 What are the behaviors and practices of principals in challenging public school contexts of schools that demonstrate high student growth?
- Q2 What are the teachers' perceptions of the principal leadership and the instructional climate in challenging school contexts of schools that demonstrate high growth?
- Q3 What is the phenomenon of "sense-making" of effective school principals in challenging school contexts that links to systemic changes in the school?

Population and Sampling

Schools in Colorado received two academic ratings in 2008 based on Colorado Student Assessment Program (CSAP) and ACT results. The first rating was based on the combined scores of eligible students who scored at the proficient or advanced levels in math, reading, writing, or science (students with previous year CSAP scores and current CSAP scores). Schools were designated as excellent, high, average, low, or unsatisfactory.

The second academic rating assigned to each school was high, typical, or low. The rating was calculated by taking the percentile growth scores from all the students, grade levels, and tests taken in a school to find the school's median percentile score. The two ratings were published in the School Accountability Report (Colorado Department of Education, 2008b).

In a news release, the Colorado Department of Education announced the annual School Accountability Report findings (Colorado Department of Education, 2008b). The publication summarized the growth of 1,998 regular and alternative schools. Three-

hundred and forty-eight schools were rated as high achievement (excellent or high) and high growth on the School Accountability Report. In addition, 21% of the 348 schools of high growth were rated as average. Of 1,077 schools, 43.5% were rated as excellent or high and showed typical growth. Another 38.2% of schools were ranked as average. Only 24 schools with a low rating showed high growth across the state. Seven schools with excellent ratings demonstrated low growth and 53 schools with a high rating also showed low growth.

The Colorado School Accountability Reports (Colorado Department of Education, 2008b) were used initially to identify schools in the State of Colorado that met the criterion of high growth. From the list of over 1,990 schools, the researcher identified 348 high growth schools. Five urban districts were selected that had a number of high growth schools, demographics with a 50% or greater minority population, and 50% or greater number of students in poverty defined by the free and reduced lunch federal program (Colorado Department of Education).

In a cross-check of schools identified as high growth (defined as the calculated median growth of 65% or greater in reading, writing, or math and meeting the criteria of minority and poverty student population), the researcher narrowed the selection of schools by identifying schools with two consecutive school years (2008 and 2009) of high growth in one of the tested areas of reading, writing, or math (Colorado Department of Education, 2009).

The one school in District A with high poverty and high performance maintained its growth in the second year. The one school in District B did not maintain its growth. District C had five high poverty and high performing schools; all five schools were rated

high growth in the two consecutive years. Eighteen high poverty and high performing schools were located in District D. Eleven of the 18 schools maintained their high growth rating. The single high poverty and high performing school in District E also retained its high growth rating for two consecutive years (Colorado Department of Education, 2009). Table 1 below is a summary of the data for the districts.

Table 1

Selected Colorado Urban Districts

Districts	Percentage of minority students	Number of high growth schools	Number of high poverty schools-50% \geq
District A	69.50%	1	1
District B	76.94%	4	1
District C	75.90%	9	5
District D	77.28%	39	18
District E	66.46%	1	1

Urban school districts were considered in the study because of the increased opportunities to assemble a large pool of high poverty schools. Two large urban districts were contacted. The researcher pursued schools within a single district to reduce the variance of district cultures. A request to conduct research letter was sent to the internal review board of each district. One district responded with a positive reply within an eight-week period. The other district postponed its response for a period of six months

and eventually sent a request for additional information. Given the lateness of the response, the district was not selected for the study.

From the participating urban school district, two elementary schools and two middle schools and their principals were selected for the study. Purposeful sampling is considered the premier form of participant selection for nonprobability studies and “the method of choice for most qualitative research” (Merriam, 1998, p. 61). The four principals selected constituted a unique sampling and represented the unit of study in the qualitative phase of the study. All four principals had three or more years of tenure in their schools. Principal 1 had 14 years of experience in the selected school--9 years as principal and 5 years as the assistant principal. Principal 2 had seven years of experience --five years as the principal of the school and two years as the assistant principal. Principal 3 had led the school for 5 years but had 10 years of experience in school leadership. For 30 years, Principal 4 had been a principal with 9 years of tenure at the selected school. The school principals had the lived experiences within the challenging school contexts to provide a theoretical sampling that contributed to the building of theory.

The teachers at the selected schools comprised the sample population for the quantitative phase of the study. In School 1, the average teaching experience was six years. School 2 had an average teaching experience of seven years. In School 3, the average teaching experience was 10 years. School 4 had the highest average of teaching experience, 11 years, in the sample.

Instrumentation

Four surveys developed by the Consortium on Chicago School Research (CCSR; 2003) at the University of Chicago were used to gather teachers' perceptions of instructional leadership and the instructional climate at their school. Since 1991, the Consortium on Chicago School Research has administered CCSR surveys in the public school system of Chicago to monitor the long term effects of the district's restructuring efforts. The Consortium on Chicago School Research developed the 2003 CCSR survey from previous Consortium surveys.

Eleven domains--instruction, instructional leadership, professional capacity, learning climate, family, and community involvement--were created from educational theory and content validity items assembled from around the country (Consortium on Chicago School Research, 2007). The survey items were analyzed in an extensive review process involving University of Chicago researchers, faculty from surrounding universities, consultants, teachers, and other stakeholders. The new items added to the 2003 CSSR survey were piloted or developed from established scales (Consortium on Chicago School Research, 2006). The 2003 CSSR surveys were administered to 9,239 elementary school teachers, 3,302 high school teachers, and 376 principals (Consortium on Chicago School Research, 2006).

The Rasch model, an *item-response latent-trait model* (Consortium on Chicago School Research, 2003), was used to create the interval scale of item difficulties and person measure, a quantitative measure of a person's attitude (Consortium on Chicago School Research). The CCSR used a Rasch item analysis to establish scale psychometrics and to create summary categories for presentation--a manner of describing the constructs

(e.g., Innovation could be categorized as minimal, limited, moderate, or extensive); however, the current analysis retained the original scale scores so that comparisons could be made and inferential analysis might be used. The items of the four scales--Instructional Leadership, Peer Collaboration, Innovation, Reflective Dialogue--were reduced to a single summary score by averaging each item's score (Pedhazur & Schmelkin, 1991); items with five response categories were transformed so that they could be averaged with items having four response categories (Colman, Norris, & Preston, 1997).

Three of the scales showed acceptable reliability, although the Peer Collaboration scale's reliability was marginal. This was likely due to the scale having only four items. CCSR analysts chose items that clustered together according to educational theory. The determination to keep an item was based on its "conceptual coherence and statistical fit" (Consortium on Chicago School Research, 2003, p. 33). The individual level reliability for elementary and high school teacher surveys ranged from 0.74 to 0.91.

The four domains of the surveys were chosen for their relationship to the research questions of instructional leadership and the instructional climate. The following selected CCSR surveys were identified for the web-based survey: the Instructional Leadership (INST), Peer Collaboration (COLG), Innovation (INNV), and Reflective Dialogue (REFD). The survey descriptors developed by CCSR (2003) were included as an introduction of each domain in the web-based survey.

Instructional Leadership (INST). Instructional Leadership assesses teachers' perceptions of their principal as an instructional leader. Teachers were asked about their principal's leadership with respect to standards for teaching and learning, communicating a clear vision for the school, and tracking academic progress. In schools with a high score, teachers view their principal as very

involved in classroom instruction, thereby able to create and sustain meaningful school improvement. (pp. 49-50)

Peer Collaboration (COLG). Peer collaboration reflects the extent of a cooperative work ethic among staff. Teachers were asked about the quality of relations among the faculty, whether school staff members coordinate teaching and learning across grades, and whether they share efforts to design new instructional programs. Schools where teachers move beyond just cordial relations to actively working together score high on this scale and can develop deeper understanding of students, each other, and their profession. (pp. 41-42)

Innovation (INNV). Teachers were asked about their attitudes towards improvement. Innovation indicates whether teachers are continually learning and seeking new ideas, have a “can do” attitude, and are encouraged to change. A high score means strong orientation to improve among faculty, indicating their willingness to try new things for sake of their students and to be part of an active learning organization themselves. (pp. 47-48)

Reflective Dialogue (REFD). Reflective Dialogue reveals how much teachers talk with one another about instruction and student learning. Teachers reported how often they discuss curriculum and instruction as well as school goals, and how best to help students learn and how to manage their behavior. A high score indicates that teachers are engaged in frequent conversations with each other about instruction and student learning, helping to build common beliefs about the conditions of good schooling. (pp. 61-62)

The four CCSR surveys were duplicated and organized into a web-based survey named the High Growth Schools Survey. Permission was granted to use the survey by the Consortium on Chicago School Research (2003). The surveys are public documents and a citation of their origin was sufficient for use (see Appendix D). The surveys were not altered and the validity and reliability of the instruments remained as established by the CCSR researchers.

The results of the surveys were used in descriptive statistics to describe the instructional climate and the teachers’ perception of the principal’s instructional leadership. The survey was used in the triangulation of data and to address the second research question:

- Q1 What are the teachers' perceptions of the principal leadership and the instructional climate in challenging school contexts of schools that demonstrate high growth?

The survey domains related to the instructional climate (Peer Collaboration, Innovation, and Reflective Dialogue) played a significant role in validating and deepening the understandings about effective school principals. Instructional climate has a significant relationship to student achievement and is a mediating variable--an indirect principal effect (Bass & Avolio, 1993; Hallinger, 1987; Hallinger et al., 1996; Hallinger & Heck, 1996; Heck et al., 1990; Henderson et al., 2005; Hoy & Clover, 1986; Hoy, Tarter, & Kottkamp, 1991; Leithwood, Day, Sammons, & Harris, 2006; Leithwood et al., 1999; Waters et al., 2003; Witziers et al., 2003). The High Growth Schools Survey results were utilized in data transformation and integrated with emergent themes from the qualitative data to build a grounded theory.

Validity and Reliability

The construct validity of the surveys was established through educational theory and an extensive committee review process comprised of Consortium researchers, faculty from local universities, teachers, and other stakeholders. Substantial data accumulated from 1991 through 2009 established the construct validity and reliability of the instrument. The reliability data for the 2003 surveys are listed in Table 2. The correlation coefficients met the statistical standards of large effect size (0.5 to 1.0) established as a general measure by Cohen (n.d., as cited in http://en.wikipedia.org/wiki/Pearson_product-moment_correlation_coefficient). The surveys' individual reliability (individuals distinguished from one another on the measure) and school level reliability (schools distinguished from one another on the measure) are listed in the Table 2.

Table 2

Individual and School Level of Reliability for 2003 CCSR Surveys

	Elementary	High school	School level
Instructional leadership (INST)	0.90	0.91	0.75
Peer collaboration (COLG)	0.76	0.74	0.75
Innovation (INNV)	0.89	0.89	0.76
Reflective Dialogue (REFD)	0.77	0.78	0.57

Validity, Reliability, and Trustworthiness

In qualitative designs, interviews are a principal source of data (Merriam, 1998). The semi-structured questionnaire used in the study was piloted with two elementary school principals. Interview questions were modified based on the feedback from the principals. The questions were also reviewed by the researcher's advisors and the university's Institutional Review Board. The questions were constructed to uncover the behaviors, practices, and sense-making of effective school principals in challenging school contexts. The semi-structured questionnaire was intended to gather data to build a substantive (practical) grounded theory of the sense-making of effective school principals in challenging public school contexts.

Validity and reliability are terminology associated with quantitative research for validation of findings. Trustworthiness is associated with qualitative research and is determined by the internal and external procedures carefully applied to assure data

accuracy and safe guards against bias and assumptions. Merriam (1998) and Creswell (2007) discussed qualitative standards of validity and reliability. They concurred that trustworthiness of a qualitative study cannot be determined by positivist criteria. In qualitative research, there are multiple realities, unlike positivist studies in which reality is a “single, fixed, objective phenomenon waiting to be discovered, observed, and measured” (Merriam, p. 202).

The analytic processes outlined by Strauss and Corbin (1998) and Merriam (1998) were utilized in this mixed methods study: thick description, line-by-line coding, constant comparisons, axial and focused coding, member-checking, peer examination, memo-writing, and identification of researcher’s biases. Each strategy contributed to the trustworthiness of this study.

- Thick description--The semi-structured interview questions were open-ended, soliciting stories from the participant around the phenomenon.
- Coding--The dissection of raw data into categories and subcategories was analyzed.
- Member-checking--The transcript of the participant’s interview was provided to confirm the accuracy of the descriptions and to modify any misrepresentation. The participants were asked to provide feedback on potential theoretical categories in the building of theory.
- Peer examination--A review of data and process by a panel of three principals was used for *expert* feedback. Three principals from a small urban district were selected based on their reputation as an instructional leader.

- Memo-writing--A recording of the researcher's thoughts, questions, insights, new ideas, comparisons, and connections was written.
- Researcher's biases--A discussion was included of my own personal biases and assumptions about the nature of an effective school principal.

Data Gathering Methods

The four principals from the selected four schools were identified and contacted by telephone. A letter was sent to explain the purpose of the study and to invite the principals to participate in the study. Principals were contacted by email and each principal consented to be interviewed. Principals were asked to schedule a date and time for a 60 minute, semi-structured interview to explore their stories of how they improved student achievement. A follow-up telephone call to the principals' secretaries was made to arrange a date and time for the interviews.

Two weeks before the interview, several preparatory steps were taken: the principals were sent a list of the interview questions and asked to jot down notes or make notations about specific situations or events related to the questions. An email was sent to each principal to answer any questions they might have about the study.

In the interview, the principal was provided the consent form to sign that included an introduction to the study. The interviews were audio-taped to allow for optimal data analysis. The principals were asked to reflect on their experiences of how they achieved significant student achievement growth. The interview questions were directed to the participants' experiences of what they thought about their work, the interview questions, and stories that revealed their problem-solving strategies, reflections, and insight of their lived experiences.

The interviews were conducted at the schools; the duration of the interviews ranged from 57 to 90 minutes. All interviews were conducted within a four-week period. Principal 1 completed the interview within 61 minutes. Principal 2 completed the interview within 57 minutes. Principal 3 had the longest interview of 90 minutes. Principal 4 completed the interview within 60 minutes.

The principals provided a list of teachers for the web-based survey. All teachers within the school were provided an opportunity to participate. The principals notified the staff of the intended study and encouraged them to participate. Teachers were sent an invitation to participate in the study by email that included the website address of the survey. A consent letter that included an introduction to the study was also placed in the teachers' mailboxes. Teachers gave their permission to participate in the study by signing onto the web-based survey and completing it. A total of 99 invitations were sent to teachers. Ninety-two teachers visited the website; 65 teachers completed the High Growth Schools Survey (Consortium on Chicago School Research, 2003), resulting in a teacher response rate of 65%. Fourteen teachers completed the survey from School 1, 11 teachers from School 2, 18 teachers from School 3, and 22 teachers from School 4. The number of respondents per school roughly reflected the relative size of each school. The majority of the teachers (54%) had taught more than six years, most (48%) had taught two to five years at their current school. Forty teachers worked at the middle school level (grades 6-8) and 25 teachers worked at the elementary school level.

Data Analysis

The human instrument is the primary method for in-depth interviewing, data analysis, and interpretation in a qualitative methodology. Rich description is essential to

the building of theory through well-developed categories of themes and concepts (Corbin & Strauss, 2008). Several templates were constructed to disaggregate the texts into codes (concepts) and themes. A template was used to organize participants' quotes around the five key words from the research questions and literature: behavior, practices, sense-making, problem-solving, and reflections (Bandura, 2000; Hallinger & McCary, 1990; Harris, 1994). This was a process of matching each participant's quotes to the key words. Each participant's transcript was read numerous times to capture quotes related to the key words. Key words from the research questions served to organize the data. This process initiated the open coding of the text. Line-by-line coding was performed. The participant's quotes were organized into another template that condensed quotes to short phrases. Many phrases included *in vivo* codes of the principal's own words. *In vivo* coding is a strategy to uncover concepts from the text (Corbin & Strauss). The researcher returned frequently to the four transcripts, made constant comparisons to determine categories, and looked for similarities and differences in the emerging focused codes. Determining the focused codes by their concepts, properties, and dimensions was the foundation for building theory. Concepts are words that represent groups, objects, or actions that share similar properties. Properties are the characteristics that define an object, event, or action. Dimensions are distinctions within the characteristics of a property (Corbin & Strauss). Key categories (concepts) were identified.

In the second step of analyzing the conceptual codes, axial coding was used. Axial coding connects categories to subcategories. The categories were explored for a greater understanding of the properties and dimension of the codes (Charmaz, 2006).

Axial coding is a critical analytical tool in developing a grounded theory (Strauss & Corbin, 1998).

An analytic tool called the *paradigm* was used to explore the properties and dimension in axial coding. The paradigm consists of three components: conditions, actions/interactions, and consequences. Conditions “allow a conceptual way of grouping answers to the question about why, where, how, and what happens” (Corbin & Strauss, 2008, p. 89). Conditions may be the causal relationship or dominant influences on the phenomenon (Strauss & Corbin, 1998). Interactions are the responses of participants to the situation or event--their emotional responses or actions. Consequences are the “outcomes of inter/actions or of emotional responses to events” (Corbin & Strauss, p. 89).

The researcher used these three components of the analytic tool to understand the circumstances encompassing the event to enrich the analysis of the structure and process of the phenomenon (Strauss & Corbin, 1998). In analyzing the data, the researcher looked for structures and processes that would reveal core categories for theory building. The focused codes were inferentially connected to theoretical codes.

Theoretical codes are integrative, emerging from the focused codes (Charmaz, 2006). Theoretical coding comprised the final stage of category synthesis. Theoretical codes were developed from focused codes and conceptualized into key themes to further illuminate a central category.

To gather more data on the theoretical category, the researcher used theoretical sampling to further develop the dimensions and properties. “The main purpose of theoretical sampling is to elaborate and refine the categories constituting your theory” (Charmaz, 2006, p. 96). Two principals were interviewed to gather data on the theoretical

codes. The principals were recognized in their district for accelerating student achievement. Convenient theoretical sampling was supported in the literature (Strauss & Corbin, 1998). The theoretical sampling was focused on the dimensions and properties of the theoretical categories. Diagrams were utilized to identify the central category and subcategories. Diagrams helped the researcher visualize the connections to a central idea.

In data transformation, a matrix was created to merge the open codes and quotes to five key words: behavior, practices, sense-making, problem-solving, and reflections. The four domains on the High Growth Schools and Leadership Survey were represented on a matrix in which the open codes were counted, enumerating the number of times the participants mentioned attributes of the domains as described in the survey: Instructional leadership, Peer Collaboration, Innovation, and Reflective dialogue. The two matrices were used to answer the first research question:

Q1 What are the behaviors and practices of principals in challenging public school contexts of schools that demonstrate high student growth?

The embedded mixed methods design examined both sets of data to analyze and explore the behaviors, practices, and sense-making of the selected principals to build a grounded theory of effective school principals in challenging school contexts. The quantitative data were a secondary data set used to confirm and validate the behaviors and practices of effective school principals and the instructional climate. Quantitative data were used to identify anomalies that might support a central idea of a grounded theory. The quantitative data of a One-Way Analysis of Variance (ANOVA) were used to answer the second research question:

Q2 What are the teachers' perceptions of the principal leadership and the instructional climate in challenging school contexts of schools that demonstrate high growth?

The final matrix integrated the four domains into the qualitative data theoretical categories. The final data transformation allowed the researcher to explore the ontology of the phenomenon in the third research question and to establish a grounded theory:

Q3 What is the phenomenon of “sense-making” of effective school principals in challenging school contexts that links to systemic changes in the school?

Summary

The embedded mixed methods design concurrently examined two data sets--quantitative and qualitative. The quantitative data, descriptive statistics, were analyzed separately from the qualitative analysis of coding--development of categories and theoretical concepts. Transformation of data occurred in the merger of the four survey domains with qualitative data--participants' quotes. In a later process, the four domains were integrated with theoretical categories from qualitative data. Creswell and Plano Clark (2007) described the process as data transformation--converting qualitative data into dichotomous categories, numbers, or providing a written discussion or matrix of the comparison of themes and statistics.

A discussion and matrixes of quantitative and qualitative data results in Chapter IV constitute the synthesis and findings of the study. A mixed methods research design has promising possibilities to enrich the field of research by blending quantitative and qualitative approaches. The examination of both types of data in addressing the research questions expanded the understanding of a complex phenomenon.

The embedded mixed methods design allowed the researcher to investigate principals' practices and behaviors, and at the same time, examine the meaning, structure, and processes involved in the phenomenon. Mixed methods designs include numbers and

thick description, making the research more accessible to practitioners and bridging the gap between research and practice (Creswell & Plano Clark, 2007).

CHAPTER IV

RESULTS

The purpose of this mixed methods study was to explore the behaviors, practices, and sense-making of effective school principals in challenging public school contexts. In addition, the study was intended to develop a substantive theory of the phenomenon of sense-making by effective school principals in challenging school contexts who move their schools forward. The research results are presented and discussed in this chapter relative to the following three research questions.

- Q1 What are the behaviors and practices of principals in challenging public school contexts of schools that demonstrate high student growth?
- Q2 What are the teachers' perceptions of the principal leadership and the instructional climate in challenging school contexts of schools that demonstrate high growth?
- Q3 What is the phenomenon of sense-making of effective school principals in challenging school contexts that links to systemic changes in the school?

The qualitative data analysis composed much of the findings in the first research question with validation and some surprises from the secondary data set--teacher surveys. The second research question of teachers' perceptions of the principal's leadership and the instructional climate was answered by descriptive, statistical results. A hypothesis was derived from the third research question to determine the properties and dimensions of the phenomenon of sense-making by effective school principals in challenging public

school contexts. Two data sets--qualitative and quantitative--were integrated to develop a substantive grounded theory. The qualitative findings are presented in the next section.

Qualitative Findings Related to the First Research Question

Four principals were initially interviewed. The principals had the lived experience of effective school principals in challenging school contexts. Two female principals from the two elementary schools and two male principals from the two middle schools were the participants in the study.

Process of Analysis

In analyzing the four principals' transcripts, the researcher identified short phrases and in vivo codes--specific words of the participants--and studied the phrases and codes for the conditions, actions, interactions, and consequences contained in the phrases (Strauss & Corbin, 1998). This is the first level of the analytic process called open coding--the identification of concepts through line-by-line coding (Strauss & Corbin). The researcher used an analytic tool paradigm (Strauss & Corbin, p. 128, emphasis in the original) to distinguish the conditions, actions/interactions, and consequences of a concept. Strauss and Corbin promoted the usefulness of this analytic process to help researchers organize an approach for data analysis. The components of the paradigm's process were utilized to guide the analytic thinking in this study. The components of the paradigm--a process of thinking about theoretical concepts--were listed by Strauss and Corbin:

1. There are *conditions* (p. 128, emphasis in the original), a conceptual way of grouping answers to the questions why, where, how come, and when.

2. There are *actions/interactions* (p. 128, emphasis in the original), which are strategic or routine responses made by individuals or groups to issues, problems, happenings, or events that arise under those conditions. Actions/interactions are represented by the questions whom and how.
3. There are *consequences* (p. 128, emphasis in the original), which are outcomes of actions/interactions. Consequences are represented by questions as to what happens as a result of those actions/interactions.

The researcher used the paradigm analytic tool for examining the conditions, actions/interactions, and consequences of a concept to cluster codes around a similar category-- the process is called axial coding. "Axial coding: the process of relating categories to their subcategories, termed 'axial' because coding occurs around the axis of a category, linking categories [concepts] at the level of properties and dimensions" (Strauss & Corbin, p. 123).

After the initial process of open coding--line-by-line identification of concepts--axial coding of concepts took place utilizing the paradigm analytic process. The researcher revisited the phrases and the transcripts to think about the conditions, actions/interactions, and consequences of the axial codes.

Qualitative Analysis Findings

In the first level of qualitative analysis open coding, 300 phrases were identified in the four interview transcripts. The short phrases and in vivo codes were categorized under the four domains of the teacher survey: Instructional Leadership, Peer Collaboration, Innovation, and Reflective Dialogue. The Instructional Leadership domain measured the teachers' perceptions of the principal's instructional leadership and comprised the largest frequency of open codes (162 or 54%). The Peer Collaboration domain assessed teachers' collaboration and reflected the second highest frequency of open codes (78 or 26%). The Innovation domain determined to what extent teachers were

continuous learners and had a “can do” attitude (Consortium on Chicago School Research, 2003); it included 38 (13%) open codes. The Reflective Dialogue domain measured the frequency of teachers’ discussions about curriculum and instruction and contained 22 (7%) open codes. Table 3 displays the results of open coding.

Table 3

Open Coding Matrix Summary

	Instructional Leadership	Peer Collaboration	Innovation	Reflective Dialogue
Behaviors	59	8	14	3
Practices	46	25	7	5
Sense-making	18	6	7	13
Problem-solving	14	18	5	0
Reflective/Dialogue	25	21	5	1
Total Open Codes (300)	162	78	38	22
Total Percent	54%	26%	13%	7%

A matrix was created to distinguish the conditions, actions/interactions, and consequences of the concepts. A total of 134 concepts were identified and arranged into one of five key words: Behaviors, Practices, Sense-Making, Problem-Solving, and Reflections. The 134 concepts were clustered--axial coding-- around the similarity of

concepts based on their properties and dimensions. The concepts' properties and dimensions were derived from the data. Strauss and Corbin (1998) defined properties and dimensions as follows:

Properties are characteristics of a category [concept], the delineation of which defines and gives it meaning. Dimensions are the range along which general properties of a category [concept] vary, giving specification to a category [concept] and variation to the theory. (p. 101)

The theoretical concept's properties and dimensions gave the concept its explanatory power. The axial coding process distanced the researcher from the raw data to stretch the analysis to theoretical coding. Table 4 displays the number of properties and dimensions found in axial codes:

Table 4

Axial Codes: Properties and Dimensions Summary

	Behaviors	Practices	Sense-Making	Problem-Solving	Reflections
Properties	5	7	6	4	3
Dimensions	37	13	22	21	16

Four organizing concepts emerged from Strauss and Corbin's (1998) coding and paradigm process: Tenacious Leader, Collective Efficacy, Personal Mastery, and Critical Theorist. The organizing concepts were utilized to answer the first research question:

Q1 What are the behaviors and practices of principals in challenging public school contexts that demonstrate high student growth?

Organizing Concept 1: Tenacious Leader
Paradigm—Properties and
Routine Actions

A tenacious leader is one who is unrelenting in the focus on student academic achievement. Principals asserted much passion and conviction in their efforts to increase students' academic growth. The passion of principals to provide every student with a high quality teacher was evident in all four interviews. Principals pressed for academic rigor in every classroom. The school principals were uncompromising in addressing the achievement gaps of high poverty and minority students.

Tenacious leadership appeared in the data as the spirit of a courageous leader--value-driven and resilient. Principals were willing to challenge the status quo and to confront the culture of low expectations of students. Principals had tough conversations with teachers and pressed for more effective teaching in the classroom. One principal characterized the statements heard throughout the interviews regarding the stewardship for every child by confronting those who were in conflict with the core belief that all students can learn. Principal 4 (November 30, 2009) stated, "Effective schooling falls around the beliefs that I bring. I pass that on to my staff, and I confront pretty vigorously if they [teachers] are in conflict. One core belief is that all kids, no matter where they come from, can learn at high levels."

The school culture and instructional focus of the schools have changed under these principals. The principals were driven by their values and beliefs and had an affinity and passion for working with high poverty and minority students. Principal 2 (December 2, 2009) said, "I grew up in a single parent home. I was in 13 different

schools, and my mother was on food stamps. I went to college to see that kids that go through transiency and whatever else can make it and can achieve.”

Another principal added:

Madison School District (pseudo name) needs good teachers. Private schools need good teachers. Schools of poverty need good teachers. I think there were teachers who were really cut out for it [urban teaching], and there were teachers who honestly were not [cut out for urban teaching]. (Principal 1; November 23, 2009)

Principals were motivated by their core values to ensure equity for all students.

They had a resounding moral conviction that all students deserve an excellent education.

Principals believed that education was a student’s best chance out of poverty.

The four schools in this study were quite different from the school culture and instructional climate of their past. Principals reported that the classrooms were active and focused on learning. As a consequence of principals’ actions, the schools were transformed to address what was best for students.

Instructional press. Instructional press, a property of the organizing concept Tenacious Leader, is the urgency for academic excellence for all students and is essential to accelerate growth in student learning (Alig-Mielcarek, 2003; Leithwood & Jantzi, 2008; Mid-Continent Research for Education and Learning, 2005). The four principal participants pressed teachers to provide high quality instruction for all students. The conditions that contextualized this concept were the classroom and the school climate. Rigor and acceleration of learning are dimensions of instructional press and are correlated to school climate (Hoy & Tarter, 1997). Principal 1 (November 23, 2009) stated, “When I think about leadership, the one thing you really have to be willing to do is to push the

envelope.” Instructional press is a predictive factor for differences between high and low performing schools (Goddard, Sweetland, & Hoy, 2000).

Many students of poverty are significantly below grade level; a year’s growth in a year’s time is not sufficient to close the achievement gap. The principal’s efficacy, the belief that he or she can impact the student learning, guided the behaviors and actions of principals in this study. The condition that provokes change in a school is the principal’s tenaciousness in creating a vision of what the school can do to provide every student with a quality education. The data-driven actions of the four principals to disaggregate data into sub-groups (English language learners, poverty, gender, special education students, and minority students) revealed an urgency to address the academic disparity among various demographic student groups. As a consequence of the principals’ instructional press, the culture of the schools changed and developed as a community of learners.

Principal efficacy. Leader (principal) efficacy is the confidence of the leader in his or her abilities to regulate and orchestrate a myriad of tasks and actions (Hannah, 2006). Effective leaders believe they can influence the system and change the status quo.

The four principal participants in this study were involved in ongoing professional development in leadership; as a result of their learning, principals were highly engaged with teachers in constructing a school community focused on learning. The statement by Principal 2 (December 2, 2009) reflected the efficacy of the principals: “When I think about excellent teaching and a parallel of excellent leadership, it is that continuum. You never stop reflecting, you never stop learning and growing. You are never there.” As a result of principals’ efficacy, instructional coherence emerged in the school.

Accountability. Accountability is a property of the tenacious leader, a characteristic of the concept. Accountability is the monitoring of instruction and student learning. In the 90/90/90 study (Reeves, 2003), 90% of the students in the schools were ethnic minorities, 90% percent were eligible for the free and reduced lunch, and 90% or more met high academic standards. Characteristics commonly found among the high performing, high poverty schools are the frequent assessment of student progress and multiple opportunities for students to improve. Teacher accountability for student learning is the expectation. The schools were noted for their focus on academic achievement (Reeves).

The four principals in this study held teachers accountable for student learning. They provided teachers with professional development opportunities to improve their instructional practices. The principals frequently monitored teachers' development and implementation of instructional practices along with student achievement data. Weekly walk throughs of classrooms by the principal and embedded professional development were routine behaviors.

The dimensions of accountability surfaced as descriptors of the principals' behaviors--tenacious and data-driven leaders. Principals monitored teachers' progress on their goals and the teachers' inquiry into improved practices that directly related to increased student achievement. The dimensions of the property accountability had an explanatory power of zealous urgency--the desire to provide all students with the excellent education they deserve.

Relentless focus. The schools in the study demonstrated their collective efforts to increase student achievement as validated by the Colorado Growth Model. The relentless

focus property of the tenacious leader was contextualized at the state level of the accountability system. The sanctions for Title I, federally-funded, high poverty schools impelled the actions and interactions of the principal to close the achievement gap. The principals' keen focus on core subjects was evident in the interviews. In the emerging property of relentless focus, the principal as a "vision builder" materialized. The principals assembled teacher coalitions and aligned resources to support the school's focus on reading, writing, and math. Research corroborated the consequence of a relentless focus--improvement in student achievement (Edmonds, 1979b; Education Trust, 2008; Lezotte, 2001).

The relentless focus on student achievement was evident throughout the schools included in this study. For example, data charts and student work were displayed on the wall of the schools. Early in the school year, the principals and teachers determined what content area would be the focus; human and material resources were organized around those efforts.

Vision builder. Vision builder is a routine action of the tenacious leader organizing concept. An inference derived from interviews was that principals modeled the behaviors of professionals in addressing the complex issues of low student achievement. Principals were engaged in constant inquiry into data, best practices, and research along with the development of their knowledge of the technical core—reading, writing, and math. Their vision of what students can do projected through dominant paradigms, the intractability of poverty. Through structures of collaborative inquiry, these vision builders motivated teachers to change their instructional practices. The consequence of the principals' actions and interactions--data-driven conversations and

professional development to build teachers' instructional practices--led to a change in teachers' beliefs about children in poverty. The principals' process of presenting the brutal facts of low student achievement to their staffs was an arduous process of working through teacher denial. The routine actions of the principals as vision-builder embodied an idealistic worldview. The principals' worldview influenced the actions of teachers.

Data-driven leaders. Data-driven leadership is another routine action of the tenacious leader organizing concept. The four principals were data-driven leaders who used data triangulation to assess student growth through student work, common assessments, and teachers' informal data. The academic progress of students revealed through data was used to guide the principals and teachers' next steps to accelerate student achievement.

The four principals also used data to chisel away the lack of ownership for student learning. Data provided the rationale for the urgency to improve instructional practices and student achievement. Two principals used data to help teachers construct individual student plans for growth determined by an inquiry approach of what teachers needed to learn and be able to do to help students become proficient in the skills and concepts. These instructional dialogues elevated teachers' reflections and inquiries of how to impact student achievement. Students were removed from blame and a richer conversation occurred among teachers and principals. The consequence of the principal's actions--to dig deeply into the data to lead conversations with teachers--broadened teachers' instructional practices and expanded the instructional capacity throughout the school. Figure 2 represents the properties and consequence of the first organizing concept--tenacious leader.

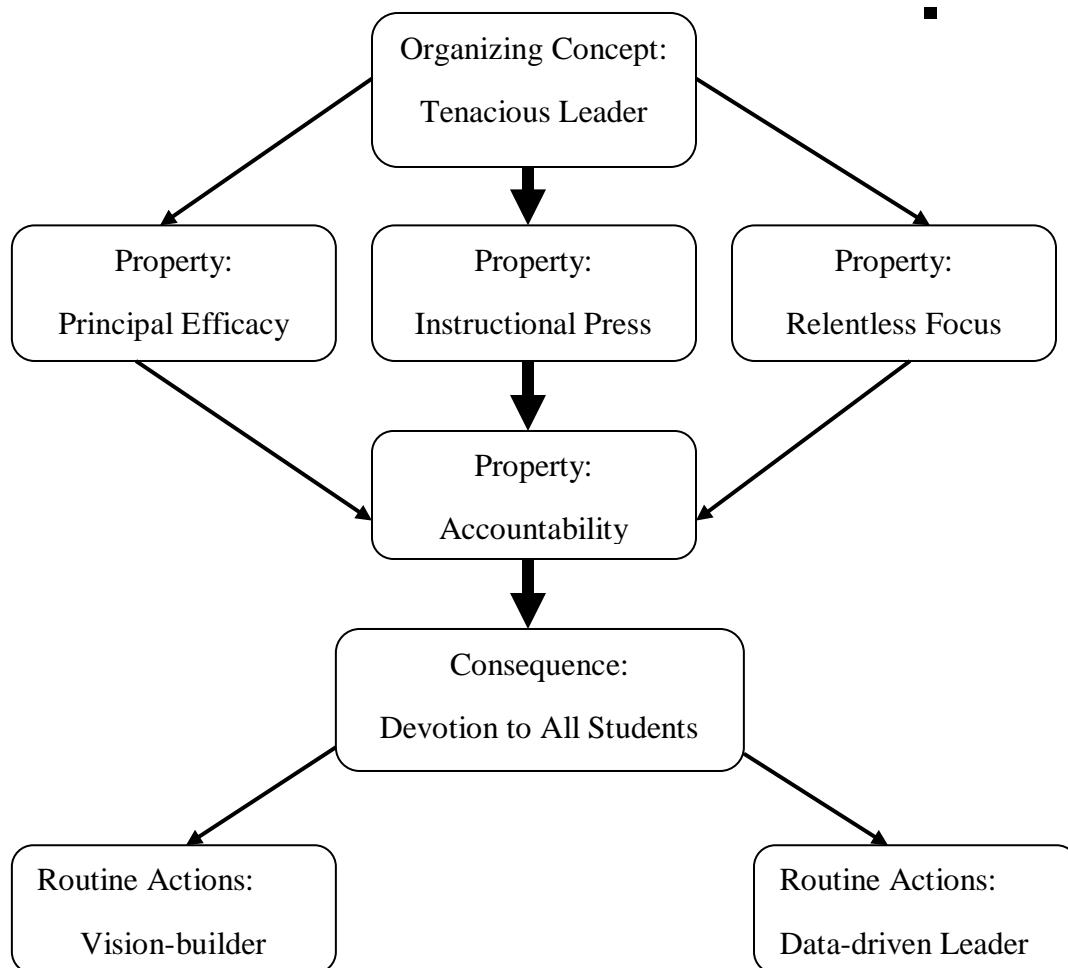


Figure 2. Tenacious leader paradigm.

In summary, the consistent and routine actions of the four principals to build the vision of academic excellence facilitated a shared vision in the school's community. The consequence of a tenacious leader, vision builder, and data-driven leader committed to core values is a devotion to all students. This commitment engenders the phenomenon of effective school leaders in challenging public school contexts.

Organizing Concept 2: Collective Efficacy
Paradigm--Properties and Routine Actions

Collective efficacy is the collective pursuit of what is best for students in reaching their academic goals. Collective efficacy is determined to be a factor in the differences between low and high performing schools (Mid-Continent Research for Education and Learning, 2005).

Collective efficacy as an organizing concept surfaced from the instructional practices in the schools. Collective efficacy developed as teachers at the individual level experienced success. The four principals were the architects of collective efficacy in their schools. “Ultimately, many people will be involved in bringing the vision of the new school to fruition. But without the work of skilled and committed architects, they can never begin” (Senge, Kleiner, Roberts, Ross, & Smith, 1994, p. 22). Principal 1 (November 23, 2009) expressed the essence of this category: “I am most proud of the staff and their ability to take any challenge and say we have the skills to fix this. We know what to do. We can figure it out.”

The codes surrounding the organizing concept of collective efficacy represented the instructional practices within the schools. Three properties of collective efficacy were identified: constant inquiry, structure, and cultivation.

Constant inquiry. Constant inquiry is the continuous pursuit by the school staff to discover how best to help students achieve the expected goals. A dimension of collective efficacy is the professional community validated in the literature with shared norms and values--a collective focus on student learning, collaboration, deprivatization of practice, and reflective dialogue (Mid-Continent Research for Education and Learning, 2005).

Structures. The organizational structures, a property of collective efficacy, supported the efficacy of teachers through systems of feedback loops on teachers' instructional practices. Instructional coaching, school and district classroom walk throughs, peer observations, and group reflections developed the instructional capacity of teachers to improve student achievement. The dimensions of the various feedback loops created instructional coherence in practices and in a collective exploration of the learning needs of students. The teachers' belief in their ability to address the needs of all students was cultivated through the practice of continuous feedback. Principal 3 (November 30, 2009) shared:

Teachers just focus on an area that they want to improve; they go out and do professional readings and they come together and dialogue about what they want to implement in their classrooms. The teachers observe each others' teaching; they video tape each other and then evaluate what is going on.

Cultivation. The cultivation of teacher efficacy was another property of collective efficacy that developed from the examination of conditions, actions, interactions, and consequence of the organizing concept. The property of cultivation led to a cultural shift. A new worldview surfaced. The relationship between poverty and student achievement was no longer believed to be intractable. Teacher leadership expanded at various levels of the school with grade-level team leaders, instructional coaches, and teacher participation in decision-making on the building instructional team. Teachers no longer operated in isolation but were participants in the overall instructional improvements in the school. Principals' instructional leadership had a high correlation (0.75) in the cultivation of a professional learning community (Mid-Continent Research for Education and Learning, 2005). The organizing concept collective efficacy, properties, and routine actions are represented in Figure 3.

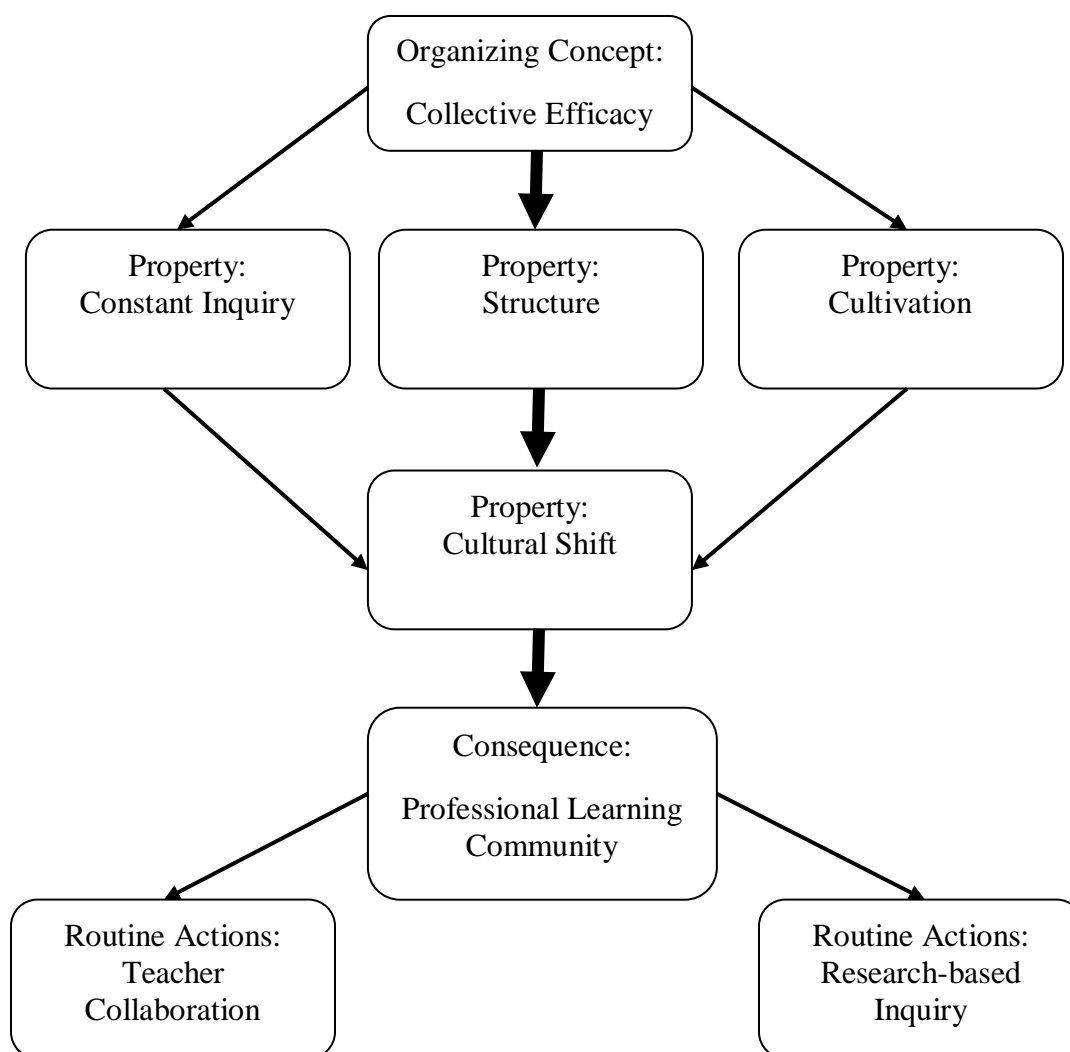


Figure 3. Collective efficacy paradigm.

In summary, there is more collaboration and deprivitization of practices in high performing schools (Mid-Continent Research for Education and Learning, 2005). Professional development and collaboration promote teacher efficacy, reflective dialogue and shared knowledge about instruction. Professional development provides opportunities for facilitative learning--peer observations and feedback --and the discovery of new instructional practices through research-based inquiry.

*Organizing Concept 3: Personal Mastery
Paradigm--Properties and
Routine Actions*

At the core of understanding the sense-making of the four effective school principals in challenging public school contexts is the “personal mastery” organizing concept. The central concepts of “personal mastery” (emphasis in the original; Senge, 1990, p. 141) and human agency (Bandura, 2001) explain the consequence outcome of school transformation. Senge et al. (1994) defined personal mastery as the ability to produce results and to understand the underlying principles of how you accomplished the results. Someone who has personal mastery is “a master of a craft” (Senge et al., p. 194). Bandura (2001) stated, “Maintaining proficiency under the ever-changing conditions of life demands continued investment of time, effort, and resources in self-renewal” (p. 13). According to Senge, personal master is necessary for organizational learning.

The discipline of personal mastery by individuals within an organization is one of the distinguishing factors of successful organizations. Senge (1990) cited several examples of individuals who have demonstrated personal mastery and impacted organizational goals. He called the discipline of personal mastery, “the spirit of the learning organization” (Senge, p. 139) that transcended competence and skills to the creation of the desired results. Personal mastery is a discipline of continuous personal and professional growth. Senge stated, “People with high levels of personal mastery are continually expanding their ability to create the results in life they truly seek. From their quest for continual learning comes the spirit of the learning organization” (p. 141). People who exercise the discipline of personal master see their work as a calling (Senge).

The four principals in the interviews exposed qualities of personal mastery. The principals exemplified characteristics of personal mastery in the way they saw their work as a calling, created a vision of the desired outcomes, and had a clear understanding of the current state of the organization. Principals were willing to confront the current reality to engage in meaningful problem-solving with the staff. The principals were inquisitive about the root causes of poor student performance and appeared to be co-creators in a movement to transform the educational system. Principal 2 (December 2, 2009) shared:

I have become very passionate about this population, and I basically seek out the time, educational leadership, and research, anything I can find. I came to this district to find a fit for me where people are smart, passionate, and relentless, and I just wanted to be part of that.

The principals created conditions to move the schools forward to the desired outcomes. The four principals' personal mastery of the leadership craft was essential to transformation of their schools.

The properties of the personal mastery organizing concept--accumulated knowledge, systems thinking and navigating change—explicated the concept of personal mastery in this study.

Accumulated knowledge. Accumulated knowledge is a property of personal mastery. Its dimension is shaped by the principals' experiences. All four principals had previous mentors who provided examples of effective leadership through the modeling of leadership approaches. The principals were engaged in professional training in leadership and in the technical core (pedagogy) of reading, writing, and math instruction. The property of accumulated knowledge centered on the principals' growth--personal mastery.

Systems thinking. Systems thinking is also a property of personal mastery. It is the understanding of the interplay of structures, patterns, and cycles in the entire system (McNamara, 1998). The orientation is toward the long-term view--the consequences of actions on the whole system. Systems thinking is the study of the interactions of the parts to the whole (Aronson, 1996). Principals were analytical and insightful about the organizational system as a whole. For example, the instructional practice of writing across the curriculum was implemented in all subjects. The writing practices were then studied to determine their impact on student achievement. In the elementary schools, the principals analyzed the impact of low literacy in kindergarten through second grade on the upper grades--third through fifth. Students in kindergarten through second grade (K-2) are not assessed on the state's accountability tests. However, the principals were creative and resourceful in working with teachers to establish benchmarks of proficiency for grades K-2. Principal 1 (November 23, 2009) noted, "This year I am working really hard to track K, 1, and 2 better because we have got to get those kids moving faster or you get the issues in 3rd grade."

The four principals examined instructional practices across the entire school along with the school's organizational structures to assess the relational effects of the parts to the entire system.

Navigating change. Navigating change is another property of personal mastery. The four principals used their leadership skills to navigate the change process and the series of transitions. "It isn't the changes that do you in, it's the transitions" (Bridges, 1991, p. 3). Transitions are the emotional stages individuals go through to let go of the past (Bridges). Principals were able to pilot through the transitions to build a new vision

of the school. Each transition is an ending that creates a state of uncertainty-- the neutral zone (Bridges). The old ways did not work and the new ways were unknown or untested. Bridges posited that the neutral zone is where many well-intended reform efforts get derailed.

In this study, the state of the schools was chaotic when principals changed the status quo of classroom instructional practices. The principals had the resilience and mastery of the leadership craft to navigate through transitions--deprivatization of classrooms, creation of collaborative structures, constant monitoring of teacher instructional practices and teachers' student results. The principals created bridges--extensive professional development and the recognition of efforts--to help teachers adjust to new instructional expectations. The principals calculated their actions and negotiated around the obstacles to change, e.g. teachers' union resistance and impeding organizational structures. They looked at a "bigger view" of the school. The principals' sense-making was based on their experience, purposeful planning, and attentiveness to the current reality of the school.

We started the process of instructional coaching. It was interesting that the Association [teachers' union] fought it. They did not want anyone in their classrooms. Those were some of the things we had to negotiate through. The Association slowed down the implementation of the coaching model, and my assistant principals wanted me to be a dictator about it [instructional coaching]. I had a bigger view down the road. We will work through this. We will keep it [instructional coaching] out front, and we will deal with the issues, and pretty soon the people fighting the coaching no longer had a voice. (Principal 4; November 30, 2009)

The four principals navigated through obstacles to change the instructional practices and to stay focused on the desired outcomes.

In navigating through the change process, the principals became change agents. Change agent is a property of personal mastery. “*Change Agent* (emphasis in the original; Marzano et al., 2005) refers to the leader’s disposition to challenge the status quo” (p. 44). The principals had the leadership skills to stimulate change in the organization. As routine actions, principals modulated, anchored, and constantly reflected on the initiatives that they moved forward. The principals anchored some practices, new and old, as staff members progressed through the change process. These anchors also functioned as bridges to help staff members adjust to significant changes in the school.

I knew that it [extended block time for students’ affective needs] was not something I was going to be able to change right away. People had some strong feelings about it. We had to collect other data. Bring other data to the table and say this is what we are seeing across the board. Is this [extended block time] going to support our goals? (Principal 4; November 30, 2009)

Another principal modulated a new math initiative that entailed a very different way of teaching math. He anchored traditional ways of doing math, but over a one-year period, and helped teachers learn and adapt new instructional practices through weekly staff development. The process was not linear. Over time, teachers incorporated new methods of teaching math. The principal as change agent is shown in the personal mastery paradigm displayed in Figure 4.

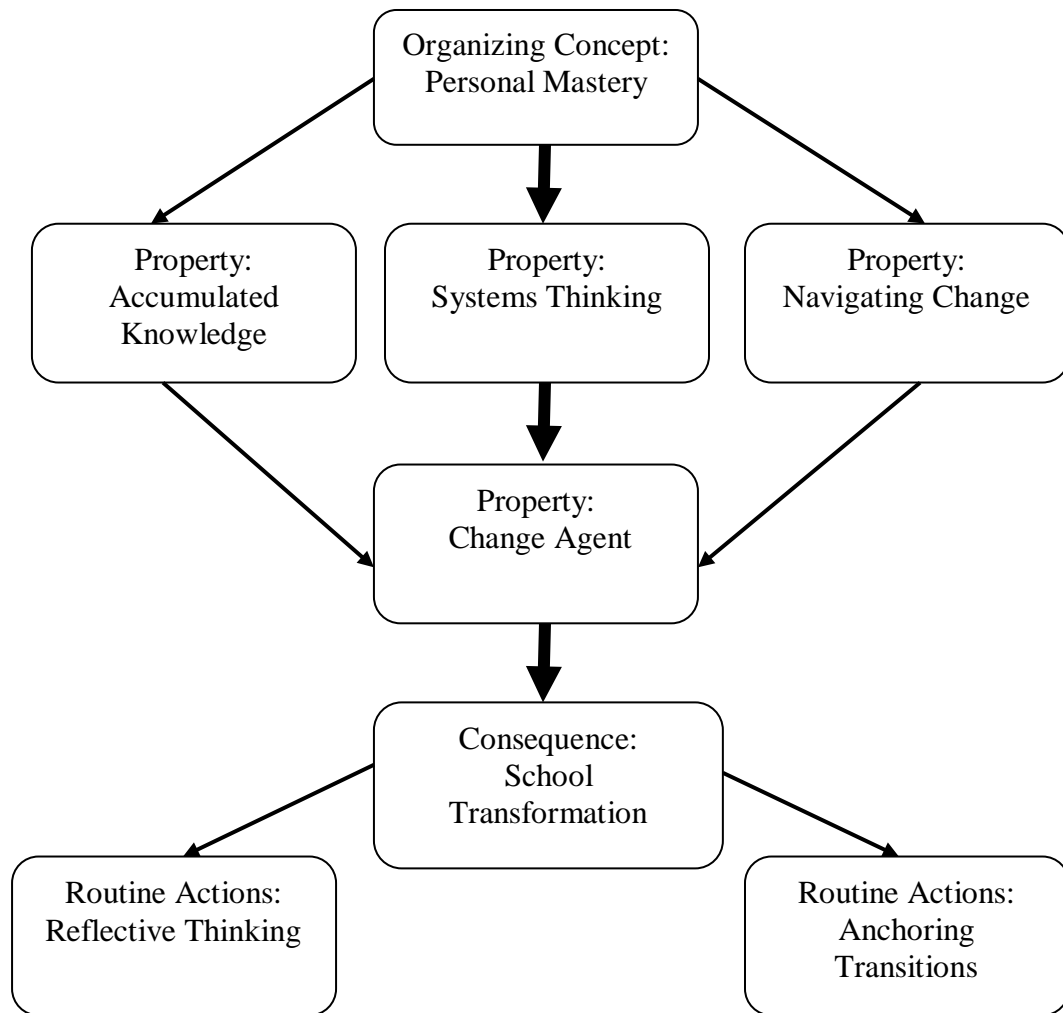


Figure 4. Personal mastery paradigm.

In summary, the personal mastery paradigm revealed four properties-- accumulated knowledge, systems thinking, navigating change, and change agent. The four principals' personal mastery of leadership behaviors and practices led to a desired outcome--the transformation of the schools' instructional practices and the instructional climate.

*Organizing Concept 4: Critical Theorist
Paradigm--Properties and
Routine Actions*

Principal as critical theorist explained the intersection of the activist dedication to the education of all children and his or her tempered radicalism in a system that perpetuated the status quo. Principals worked within the educational system to make the difficult changes. The principals' social justice cause was beyond their self-interest. Leadership service for the greater good appeared to be their calling.

The traditional theories of leadership fail to address many of the distinctive challenges confronting urban schools (Dantley, 2002). The models are insufficient in analyzing the complexity of urban schools, the impact of poverty, race, culture, and social issues (Gooden, 2002). Tate (as cited in Gooden, p. 135) identified groups who have been discriminated against due to race, class, and gender as "raced" people (emphasis in original, p. 135). "Raced people are those who have been historically oppressed psychologically, physically, educationally, or economically" (Tate, as cited in Gooden, p. 135). A new theory of leadership is implied (Block, 1996; Sergiovanni, 2007a).

In the inductive testing of theoretical concepts that may develop into a central theme, the concept of the principal as a critical theorist matured. Critical leaders "experience rage caused by the unjust circumstances that surround the educational experiences of the dispossessed, the poor, minorities, and other marginalized people" (Williams, 1999, p. 1). Meyerson and Scully (1995) described the activism of individuals who sought to change the inequalities of race, class, or gender as tempered radicals. Tempered radicals are "individuals who identify with and are committed to their

organizations and also to a cause, community, or ideology that is fundamentally different from, and possibly at odds with the dominant culture of their organization” (Meyerson & Scully, p. 585). Meyerson and Scully defined “tempered” to mean moderation. A “radical” is someone who challenges the status quo (Meyerson & Scully, p. 586).

The four principals in this study exemplified tempered radicalism. Their tempered rage toward the status quo of the education of poor and minority students incited their urgency to respond to the inequalities in the educational system.

Dream-keeper. Dream-keeper emerged as a property of critical theory. Principals envisioned the school as a place where all students reach proficiency in the content areas. Students were empowered by their education. Education is viewed as an avenue out of poverty--a means to become an educated citizen capable of full participation in the society. The principals battled teachers’ low expectations of students and led the efforts to dispel the belief that students in poverty cannot learn at high levels.

The principals were engaged in a social movement to change the socio-economic contexts of their students. Their actions were motivated by democratic principles to ensure equality for all students. Principals in urban school settings play a key role in changing the worldview of low expectations for poor and minority students. They demonstrated strong beliefs in their abilities to change the system. The principals were dedicated to the care of children and they used collaboration as a means of building consensus.

The property of dream-keeper was illustrated in a principal’s statement. He discussed the college preparatory vision for all students:

Honors kids take Biology I in 9th grade. So if you are on track to go to a 4-year college or university, you are going to be taking Biology in 9th grade. We are not

offering a beginning 9th grade course next school year. The science teachers got into an email conversation as to why were not offering 9th grade science. Why are we teaching Biology? In the conversation, I was hearing that I don't think our kids can do Biology. I said, "Wow!" That's an opportunity to talk to the vision that kids can learn at high levels. (Principal 4; November 30, 2009)

The lens of social justice channeled the actions of the four principals to confront the poor education of marginalized students.

Empowerment. Although several organizational structures were in place in the schools to distribute teacher leadership across the school, Short (1994) and Cochran and DeChesere (1995) believed that professional development builds teachers' competencies and empowers them to take charge of their own growth. Teachers become problem-solvers in addressing the learning needs of students. Cochran and DeChesere examined cognitive coaching as a model to improve teacher competencies and as a vehicle to professionalize the school culture. "Empowered schools are organizations that create opportunities for competence to be developed and displayed" (Short, p. 488).

An instructional coaching model in the four schools developed teachers' instructional competences and increased their confidence in their abilities to significantly impact student academic achievement. Teacher empowerment was encouraged through professional development structures organized by the principals in all four schools. The routine actions of professional development led to continuous improvement in the schools. The structures can initiate what Marzano (2003) described as second-order change--the behaviors and practices of teachers and principals to go beyond the fine-tuning of the system. Second-order change alters the system in innovative ways and requires new knowledge and skills for sustainable school improvement (Marzano).

Principal 1 (November 23, 2009) said, "The message to this staff has always been this is

a journey. This is a long journey and every time we think we are here, something shifts and we got to go down a different road.” The path of second-order change is a journey in which there are no road maps. Figure 5 confirms the consequence of the emergent theoretical concept--principal as critical theorist.

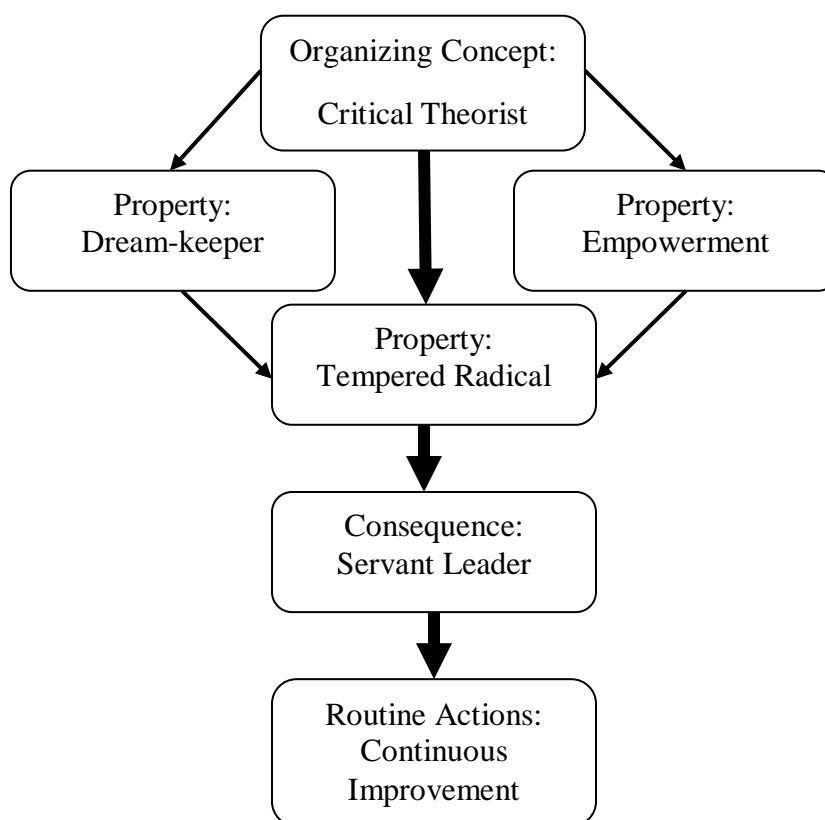


Figure 5. Critical theorist paradigm.

Summary

The qualitative findings of the principals' behaviors and practices were direct and indirect effects on student achievement. The four organizing concepts (Tenacious Leader, Collective Efficacy, Personal Mastery, and Critical Theorist) were developed into

paradigms that explained the consequences of the four principals' leadership on instructional climate and student achievement.

Based on an analysis of the qualitative data set, the behaviors and practices of effective school principals in challenging public school contexts were exposed. These leaders

1. Created a vision of what the school could do to provide students with an exceptional education.
2. Role-modeled professionalism and constant inquiry in a culture of learning.
3. Communicated clearly to the staff the expectation of meeting the instructional goals.
4. Set high expectations for teacher and student learning.
5. Used student data to create the reality of student performance and the urgency to respond to the needs of students.
6. Exercised strong instructional leadership, hands-on engagement with teachers in professional development on instructional practices, the monitoring of the implementation of practices, and assessing student growth.
7. Pressed for rigorous instruction and acceleration of student learning.
8. Established organizational structures to support teacher collaboration.
9. Provided supportive climate for teacher learning.
10. Maintained constant and consistent visibility in the classroom.
11. Distributed leadership for instruction, shared responsibility.
12. Held teachers accountable for student learning, ownership of student results.

13. Pressed for continuous improvement in higher student achievement, a preparation of students for life.

The qualitative finding from this study added to the body of knowledge of effective principals' behaviors and practices working in challenging public school contexts by identifying the interactions, actions, and consequences of their influence on student achievement. The personas in action--tenacious leaders, vision-builders, data-driven leaders, dream-keepers, and critical theorists--allowed educational practitioners to deepen their understanding of the *being* of the phenomenon of sense-making in effective school principals in challenging public school contexts.

Quantitative Results of Embedded Mixed Methods Design

Description of Participants

The study was conducted in a large school district defined as greater than 30,000 students. Sixty-five teachers responded to the web-based (High Growth Schools) survey on principal leadership and instructional climate. The survey was emailed to 99 teachers in the four schools. The return rate of the survey was 65%. The number of respondents per school roughly reflected the relative size of the school. Eleven teachers in School A responded. School B had 14 responses. School C had 18 teacher responses. School D, with the largest staff, had 22 teacher responses. The majority of the teachers (54%) had taught more than six years; many of the teachers (48%) had taught 2-5 years at their current school. Forty teachers worked at the middle school level (grades 6-8) and 25 teachers worked at the elementary school level.

*Findings Related to Second
Research Question*

The second research question assessed teachers' perceptions of principal leadership and instructional climate:

Q2 What are the teachers' perceptions of the principal leadership and instructional climate in challenging public school contexts of schools that demonstrate high growth?

Descriptive statistics were used to report findings of teacher perceptions of the principals' instructional leadership and climate. Table 5 shows the means, standard deviations, number of items, and reliability coefficients (Cronbach's alpha) for each of the teacher perception domains. In general, teachers rated their principals' leadership and school instructional climate as being positive (mean rating = 2.97, $sd = .23$ on a 4-point scale).

Table 5

Teacher's Perceptions of Instructional Leadership and Climate Domains

Domains	Mean	Standard Deviation	Number of Items	α
Instructional leadership	3.22	.48	9	.86
Peer collaboration	2.81	.44	4	.56
Innovation	3.11	.57	6	.90
Reflective dialogue	2.75	.55	7	.81

Note. $N = 65$

Table 6 shows the correlations between teachers' perceptions of principals and the instructional climate. All domains were moderately correlated with each other; an expected finding for domains was all measures of related constructs (mean $r = .57$).

Table 6

Correlations Between Teachers' Perceptions of Principals and Instructional Climate Domains

Domains	1	2	3	4
Instructional leadership	-	.66***	.47***	.44***
Peer collaboration		-	.55***	.57***
Innovation			-	.74***
Reflective dialogue				-

*** Correlation is significant at the .001 level (2 tailed).

To see if there were differences in teacher perceptions between schools, a one-way analysis of variance (ANOVA) was performed for each domain. The data analysis (see Table 7) revealed no significant differences in Instructional Leadership and Peer Collaboration across schools. The data analysis showed there was a difference among schools in Innovation and Reflective Dialogue.

Table 7

Analysis of Variance of Instructional Leadership and Climate

Domains	<i>F</i>	<i>p</i>
Instructional leadership	2.28	.09
Peer collaboration	.72	.55
Innovation	9.00	.001
Reflective dialogue	2.98	.04

Note. $df = (3,61)$

To further investigate the differing perceptions of Innovation and Reflective Dialogue between schools, post-hoc tests were performed. Table 8 shows the Bonferroni comparisons, indicating that teachers at School A reported a significantly different level of Innovation than did teachers at Schools D, C, and B (mean differences .70, .83, and .40, respectively; $p < .001$). However, differences in perceptions of Reflective Dialogue between schools were not significant for comparisons of individual schools.

In conclusion, 65% of the teachers across the four schools responded to the High Growth Schools survey. The mean rating (2.97) of teachers' perceptions of their principal's leadership and instructional climate was high, almost 3.00 on a 4.00 scale. The Cronbach's alpha reliability coefficients were 0.86 for Instructional leadership, 0.90 for Innovation, and 0.81 for Reflective dialogue. Peer collaboration had a moderate confidence level of 0.56.

Table 8

Analysis of Variance of Instructional Leadership and Climate Between Schools

	School D	School C	School A	School B
Instructional leadership	3.08	3.22	3.49	3.15
Peer collaboration	2.74	2.83	2.95	2.75
Innovation	2.95 ^a	2.82 ^a	3.65 ^b	3.25 ^a
Reflective dialogue	2.65	2.55	3.05	2.90

Note. Means not sharing a superscript within the same row are significantly different at $p < .001$.

The correlations between teachers' perceptions of the principals and instructional climate were significant at the .001 level (2 tailed). The reliability measures indicated a confidence level in the constructs to draw a conclusion: teachers' perceived a positive instructional climate and effective principal leadership in the four schools. The high mean score (2.97) of the Instructional Leadership survey questions (behaviors and practices) substantiated the codes and concepts in the principal interviews.

Summary

The quantitative findings validated the qualitative findings of a strong relationship between principals' instructional leadership and instructional climate as perceived by teachers across all four schools. The positive principal effects are verified and corroborated in the literature: (a) positive indirect and direct effects of principal behaviors on student achievement (Hallinger & Heck, 1996; Heck et al., 1990); (b) the positive

principal effects on school climate and instructional organization (Pitner & Hocever, 1987); and (c) the positive principal effects on professional learning community, collaboration, and high expectations for student learning (Harris & Chapman, 2002; Newmann & Wehlage, 1995; Waters et al., 2003).

The High Growth Schools survey included three domains of the instructional climate: Peer Collaboration, Innovation, and Reflective Dialogue. The High Growth Schools Survey items were linked to a qualitative concept--collective efficacy. For example, in this school, teachers have a “can do” attitude; collaboration: Teachers at this school make a conscious effort to coordinate their teaching with instruction at other grade levels; and constant inquiry: Many teachers in this school were willing to take risks to make this school better.

In the Analysis of Variance (ANOVA) of Instructional Leadership and Climate, School B was shown to have a significant difference in Innovation when compared to the other three schools. This domain may suggest a key construct in understanding how schools progress on a continuum toward higher student achievement. As evidenced by the qualitative data, School A was engaged in a significant innovation--a new model of schooling. This domain had the potential to yield new understandings and should be investigated in future studies.

As expected, the four domains (Instructional Leadership, Peer Collaboration, Innovation, and Reflective Dialogue) were significant and correlated to higher student achievement as evident in the high growth rating of the four schools established by the Colorado Growth Model. In the following section, data transformation is discussed.

Data Transformation

Data transformation across two concurrently-gathered but discrete data sets--the qualitative and quantitative data--were integrated as described in the quantitative findings. The five key words (behaviors, practices, sense-making, problem-solving, and reflections) were used to align the four organizing concepts (Tenacious Leader, Collective Efficacy, Personal Mastery, and Critical Theorist) with the four survey domains (Instructional leadership, Peer Collaboration, Innovation, and Reflective Dialogue).

In the data transformation, an affinity process was conducted. Matched concepts across qualitative and quantitative data sets were aligned. The Tenacious Leader organizing concept including its properties was matched with the survey domain Instructional Leadership under the key word *behaviors*. The consequence--devotion to students--was also aligned with the Tenacious Leader organizing concept. The Collective Efficacy concept, along with its properties, was aligned with the survey domain of Peer Collaboration under the key word *practices*. The consequence--professional community--was clustered with the Collective Efficacy concept.

The affinity process continued with the grouping of concepts across two data sets. The clustering of the Personal Mastery organizing concept was aligned with Innovation domain, along with its property descriptors, under the key words of *problem-solving* and *reflections*. The consequence of the Personal Mastery concept was school transformation. Therefore, school transformation was aligned with the Personal Mastery organizing concept. The Critical Theorist organizing concept and its properties were aligned with the Reflective Dialogue domain under the key word *sense-making*. The consequence of the

actions and interactions of the Critical Theorist was characterized as a servant leader. The consequence (outcome) of servant leader was also aligned with the Critical Theorist organizing concept. Figure 6 illustrates the data transformation that aligned the theoretical, organizing concepts and the four domains used in building a grounded theory.

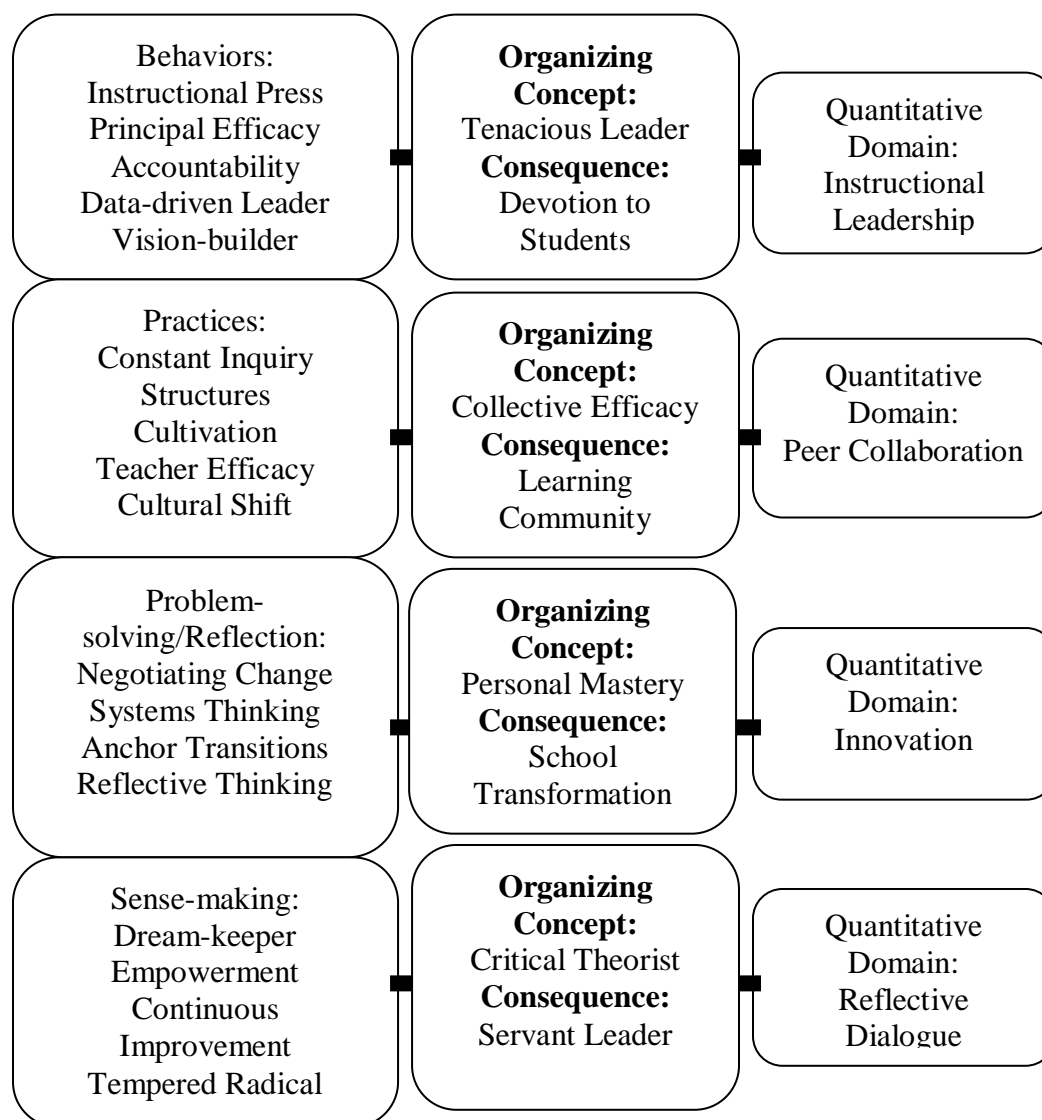


Figure 6. Data transformation, alignment of organizing concepts, and domains.

In this section, the third research question is addressed:

Q3 What is the phenomenon of sense-making of effective school principals in challenging public school contexts that links to systemic changes in the school?

The researcher explored the data for an emerging central concept. The central concept provided the big picture of “What is going on here?” To answer the third research question and to explore the data for a central concept, the researcher conjectured a hypothesis to comprehend the phenomenon of sense-making of effective school principals in challenging public school contexts: Effective school principals in challenging school contexts exercise stewardship principles in their sense-making of daunting school environments through a lens of social justice. Stewardship principles and a lens of social justice guide principals’ decision-making to improve students’ academic achievement. What were the conditions of the emerging concepts that influenced the central phenomenon sense-making? The accumulated data revealed an induction that illuminated the central concept.

The concepts identified under the key word *sense-making* (Critical Theorist, Dream-Keeper, Empowerment, Tempered Radical, and Continuous Improvement) intersected with the quantitative domain of Reflective Dialogue. The consequence of the principals’ actions and interactions provided a marker of the ontology of the sense-making phenomenon. The consequence (outcome), listed in Table 6 under the key word sense-making, revealed a servant leader.

The four consequences under the key words--behaviors, practices, sense-making, problem-solving and reflection--were again explored for conditions, actions, interactions, and consequences. In the connection of the consequences (devotion to students,

professional learning community, servant leader, and school transformation), the central concept of stewardship emerged. The literature supported stewardship as a model of leadership. Sergiovanni (2007b) stated, “The leadership that counts... 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” (p. 270).

Stewardship had a variant meaning derived from the data. Traditionally, stewardship is not defined as care-taking. However, in this context, stewardship was defined as “holding something in trust for another” (Block, 1996, p. xx). Servant leaders hold the organization in trust for the “greater good of the society” (Spears, 1996, p. 5.) Stewardship develops in an organization as an ecosystem. Stewardship brings about the distribution of power, control, and accountability (Block). The success of the organization is interdependency. Principles of stewardship are choice, ownership, and accountability by those closest to the core work (Block).

Stewardship emerged as an intuitive central concept. In building a grounded theory in this study, the researcher performed additional theoretical sampling. The original qualitative data were reexamined to look for codes that supported the central concept of stewardship. The researcher provided the four principals in the study with a summary of the findings and an explanation of Table 6. They were asked to provide feedback on the theoretical concepts and the central concept of stewardship. Additional interviews were conducted with two principals in a small urban district of high poverty students. The additional data confirmed the central concept of stewardship.

Central Concept: Stewardship

Strauss and Corbin (1998) promoted the recoding of data as a step in theoretical sampling--the testing of the researcher's hunches. They noted that interviews contained several incidents that had codes not apparent to the researcher in the initial coding process. The researcher recoded the transcripts to look for evidence of the central concept of stewardship. The properties and dimensions of stewardship were identified. The fundamental influence in the central concept of stewardship was the property of the principal as servant leader. Four dimensions of stewardship surfaced from the data that expanded the property of servant leader--renegotiated agreements, distribution of instructional leadership, partnership, and empowerment.

Servant Leader as a Property of Stewardship

The servant leader is a person who seeks first to serve. It is in one's nature to serve others (Greenleaf, cited in Spears, 1998). Greenleaf was the first to introduce servant-leadership as an alternative model of leadership. He stated that a great leader is first a servant and this was fundamental to the leader's greatness. The servant leader supports individuals to reach their highest potential--a process of self-actualization. Individuals move beyond their self interest to discover their purpose and role in creating a better society. Greenleaf compared a leader driven by the need for power and possessions with a leader driven by service. He stated,

The difference manifests itself in the care taken by the servant first to make sure that other people's highest priority needs are being served. The best test, and most difficult to administer, is this: Do those served grow as persons? Do they, while being served, become healthier, wiser, freer, more autonomous, more likely themselves to become servants? And what is the effect on the least privileged in society; will they benefit, or, at least, not be further deprived? (p. 19).

According to Blanchard (1996), a misconception about servant leadership is that servant-leadership lacks a true leader. Employees lead the organization. Blanchard described two roles of the servant leader; one is visionary, establishing a clear picture of what the organization can be, and the other is setting the direction. The relationship between the manager and the employees is an interdependency to achieve the purpose of the organization. The relationship is a partnership.

Greenleaf (1970) stated that we are in a leadership crisis and servant-leadership is a means to bring our societies into balance to address the urgent problems of the world: "...the disposition to venture into immoral and senseless wars, destruction of the environment, poverty, alienation, discrimination, overpopulation..." (Greenleaf, p. 60). Servant-leadership is not a "quick-fix" approach (Spears, 1998, p. 3). "At its core, servant-leadership is a long-term, transformational approach to live and work--in essence, a way of being--that has the potential for creating positive change through our society" (Spears, p. 3). Jeffries (1998) stated that servant-leaders have a calling to serve others in their chosen vocation. Their work is viewed as their purpose in life.

The four principals in this study personified leader as servant first. Principals saw their work as a calling. One principal stated, "I think from the very beginning, I have always been interested in providing better instruction, education for my kids from one year to the next" (Principal 4; November 30, 2009). Another principal said, "My teachers would tell you that I ask them to work hard, but I work hard, if not harder, and I am always, what's best for kids, what's best for kids" (Principal 2; December 2, 2009). The comment by Principal 1 (November 23, 2009) represented the principals' calling, their

service to others: “The clientele that we serve here, we are their chance out of poverty.... You know, these kids deserve the absolute best education.”

The servant-leaders in this study served teachers and students to support their growth---their highest potential. The dimensions of stewardship that were confirmed in the data expanded the property of servant leader--renegotiated agreement, distribution of instructional leadership, partnership, and empowerment. The dimensions of stewardship are discussed by enumerating the evidence in the data.

Renegotiated agreements. The qualitative data revealed renegotiated agreements that developed over time between principals and teachers. The agreements were unwritten promises that solidified a commitment to look past self-interest and to make decisions that were in the best interest of students. The new agreements joined principals and teachers as partners in solving the issues of low student academic performance. Principals and teachers entered a new partnership in which the vision and values were communicated daily through various settings of instructional dialogue—grade-level meetings, data dialogue team meetings, and Collaborative Coaching Learning Cycle meetings.

Distribution of instructional leadership. Block (1996) stated that decision-making should be made by those closest to the work. Decision-making at the location of the work creates accountability (Block). Various structures provided teachers with the autonomy to make decisions about their students’ academic progress. The Collaborative Coaching Learning Cycle structure found in each school encouraged teachers to problem-solve and to take risks in addressing the learning needs of their students. Teachers’ autonomy was bound by a promise of commitment to provide students with an excellent education. One

principal stated, “Teachers here have a lot of freedom to try what they think will work as long as they have a reason as to why they want to try it. If we had all the answers, we would be at 100% [student proficiency]. We are not” (Principal 1; November 23, 2009). The four principals renegotiated the unwritten agreements for more teacher autonomy of decision-making and risk-taking in their instructional practices to press for significant growth in student academic achievement.

Partnership. Partnership is an essential component of stewardship as a model of leadership. The partnership between principals and teachers is at the core of the transformation of schools. Principals and teachers make a commitment to the partnership. Partnership is the balance of power and accountability (Block, 1996). Partnership as a core principle goes beyond the distribution of instructional leadership. The partnership between principals and teachers deepens the commitment to the school’s purpose by balancing power. The role of boss is redefined as colleague from supervisor at the top, care-taker of teachers and the organization, to the collegial interdependency of teachers and principals. The survival of the organization is interdependency--a commitment to purpose, accountability, and ownership of results.

The partnership between principals and teachers is developed through dialogue about the school’s purpose and collective ownership of results. Teachers have a relative equal voice in the decisions of educating students. There is no cohesion, incentive, compensation, or retribution from principals to stifle this balance of power. Block (1996) stated, “There is nothing inconsistent between practicing stewardship and partnership and being a boss. Stewardship is the willingness to hold power, without using reward and punishment and directive authority, to get things done” (p. 32).

Evidence in the data indicated that principals and teachers were in a partnership to create an excellent education for all students. For example, in Collaborative Learning Cycles, teachers collaborated with each other and made instructional decisions of how best to address the needs of students; they teamed with the principals in the study and exploration of what was best for student learning.

The principals used student data frequently in the dialogue with teachers to continuously focus on their agreed-upon purpose to provide students with an excellent education. One principal highlighted this agreement that was evident throughout the transcripts:

You know that in any situation that has to do with instruction and the learning..., it all has to start with what is our goal. So we go back to that, and we have to look at the data. What are we currently doing right now? We have to really look at the big picture? What are the results that we are getting, and to make sure that what we were intended to do... we are really doing what we set out to do. Always taking it back to the data and putting it out in front of them [teachers] noticing the changes in what we are doing, and how is it supporting student achievement. It's all based on the data. What are the results that we are getting from this particular practice? Is it something that we need to continue? (Principal 3; November 30, 2009)

Principals in this study were engaged in frequent dialogue with teachers to build a partnership around the purpose of the school--educational excellence for all students.

Empowerment. Empowerment is “moving from being a participant to being a creator” (Block, 1996, p. 37). “This is a journey,” as one principal stated (Principal 1; November 23, 2009). Principals and teachers in the four schools moved forward as creators of their organization, e.g., new models of schooling. The areas of empowerment --decision-making closest to the classroom and instructional decisions in the school--were opportunities for teachers to become empowered. The boundaries of decision-making were more clearly defined in the governing structures of the schools.

Evidence of student empowerment was also identified in the interview transcripts. For example, a school removed the punishment of students who did not do their homework. The principal and teachers provided choices for students in their decision-making to help them become empowered to make conscientious choices. The principal and teachers still held students to high expectations and accountability for their work. The responsibility and ownership of student learning were gradually released from teacher responsibility to students. Students were partners with teachers in their learning. A principal stated, “We are educating students for life” (Principal 1; November 23, 2009).

Empowerment of teachers and students is embedded in the beliefs of social justice. Principals used stewardship principles of servant leadership, renegotiated agreements, distribution of power, and teacher empowerment. They were driven to support marginalized students to obtain equity in the society through education. Figure 7 illustrates stewardship as a sense-making model of leadership.

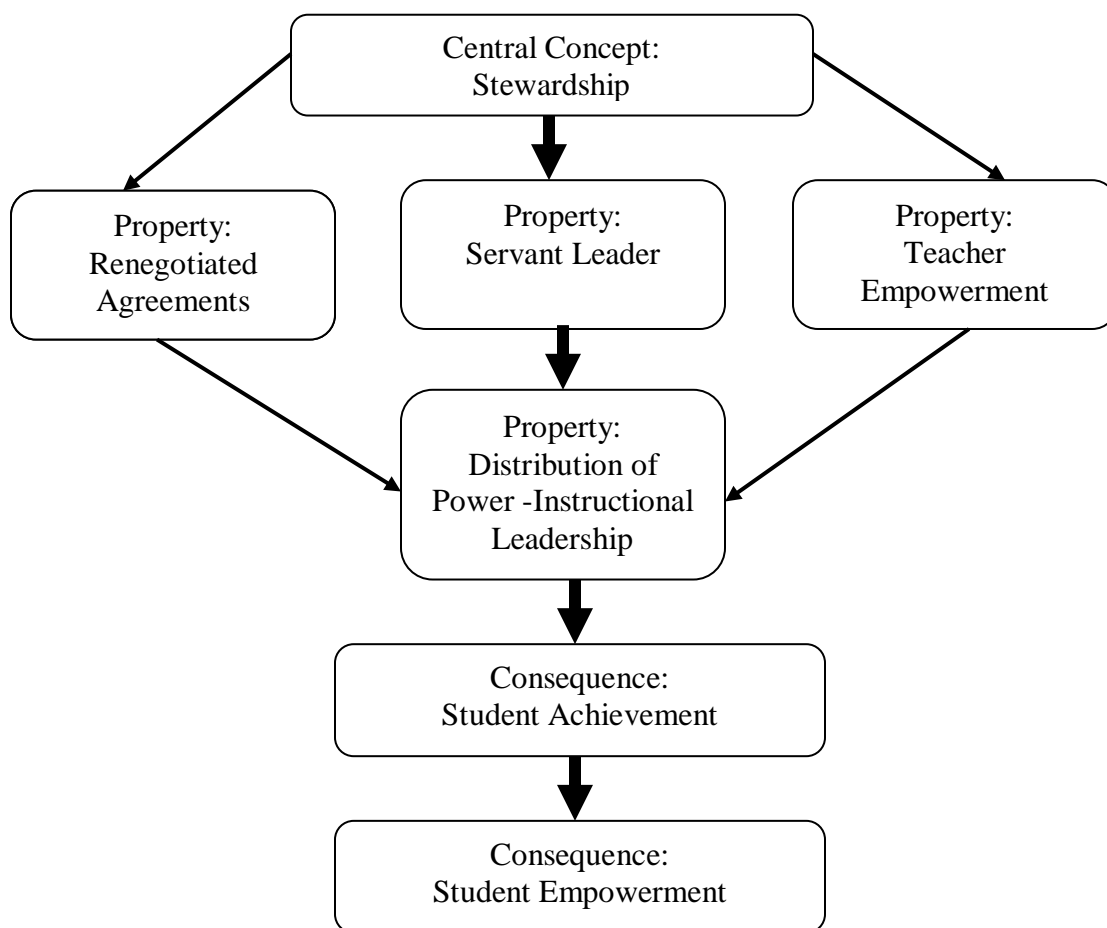


Figure 7. Stewardship as a sense-making model of leadership.

Stewardship as a Sense-making Model of Leadership

The effective school principal exercises stewardship principles to make meaning of daunting school environments through a lens of social justice. The behaviors and practices of the effective school principal are focused on the educational needs of all children, particularly children marginalized by society. The principals are archetypal servant leaders; service is a calling driven by a cause to create a more equitable society. Effective principals hasten changes in the society by ensuring an excellent education for

all children. Effective principals as tenacious leaders in challenging public school contexts engage teachers in an instructional press to accelerate the learning of students and to close the achievement gap.

In the process to build the instructional capacity of teachers to address the needs of children, a collective efficacy develops out of extensive staff development and teacher support to adapt new instructional practices. The principal organizes structures to support and cultivate the instructional growth of teachers.

The effective principals have personal mastery of the leadership craft and navigate the arduous change process as the school's culture shifts. The school culture gains a new worldview--higher expectations for students. Teachers believe in their ability to make a difference in the lives of children. The effects of poverty are no longer viewed as intractable.

Over time, a stewardship of the organization is developed by an effective principal who is a servant leader. A renegotiation of unwritten agreements (autonomy for commitment), distribution of instructional leadership, and joint accountability are enacted to recreate the organization. Members of the organization move past their self-interest to a shared vision of what is best for students. The principal and the teachers are partners, stewards of the organization, to ensure that the school can deliver on its promise to provide every student with a quality education and holding the organization in trust for the next generation. Student achievement increases and students become empowered through education.

Summary

This chapter delineated the findings of this research study. Four organizing concepts emerged--Tenacious Leader, Collective Efficacy, Personal Mastery, and Critical Theorist; the properties and dimensions of the concepts were revealed. The paradigm data analysis process assisted the researcher in digging deeper into the properties and dimensions of the organizing concepts. As a result, the consequences (outcomes) of the principals' behaviors, practices, and sense-making revealed a fundamental influence of a servant leader, the phenomenon of effective school principals in challenging public school contexts.

Quantitative data--teacher survey results--validated the behaviors and practices of teachers and principals and were corroborated in the literature. The qualitative findings--analyzed by the coding of transcripts--showed principals' behaviors and practices similar to the results found in the quantitative data, teacher survey results.

In the final phase of analysis, a substantive theory was constructed of the sense-making of effective principals in challenging public school contexts. The fundamental influence, principal as servant leader, led to the central concept of stewardship as a form of leadership that was further developed through theoretical sampling. The dimensions and properties were explored and identified: renegotiated agreements, distribution of instructional leadership, partnership, and teacher and student empowerment. In Chapter V, the conclusions of this study are discussed along with the implications for further research and recommendations to achieve greater student academic achievement.

CHAPTER V

SUMMARY, IMPLICATIONS, RECOMMENDATIONS, AND CONCLUSION

The purpose of this study was to illuminate the behaviors, practices, and sense-making of effective school principals in challenging public school contexts. An additional outcome of the study was to develop a grounded theory of the phenomenon sense-making of effective school principals that linked to systemic changes in the school. This chapter is divided into four sections: (a) summary of findings and the related research, (b) implications for leadership theory and practice, (c) recommendations for future research, and (d) conclusion.

Summary of Findings and Related Research

An embedded mixed methods design was used to illuminate the behaviors and practices of effective school principals in challenging public school contexts.

Quantitative and qualitative data sets revealed findings related to the following three research questions addressed in the study:

- Q1 What are the behaviors and practices of principals in challenging public school contexts of schools that demonstrate high student growth?
- Q2 What are the teachers' perceptions of principal leadership and the instructional climate in challenging school contexts of schools that demonstrate high growth?
- Q3 What is the phenomenon of *sense-making* of effective school principals in challenging school contexts that links to systemic changes in the school?

The qualitative and quantitative data were converged to establish the behaviors and practices of effective school principals in the context of challenging schools. The expected behaviors and practices of principals were evident in both data sets and were substantiated by prior research (Alig-Mielcarek, 2003; Cotton, 2003; Hallinger et al., 1996; Hallinger & Heck, 1996, 1998; Hallinger & Leithwood, 1994; Heck et al., 1990; Leithwood et al., 2004, 2009; Leithwood & Jantzi, 2006, 2008; Levine & Lezotte, 1990; Marzano, 2003; Marzano et al., 2005; Reeves, 2003; Witziers et al., 2003).

In contextualizing the practices and behaviors of the four principals who participated in the study, the qualitative data revealed roles principals performed in their schools to increase student achievement. The first role was the principal as a tenacious leader, resilient and uncompromising in the efforts to provide an excellent education for all students. Vision-builders and data-driven leaders were roles of principals exemplified in their routine actions. When the principals initially started in their leadership positions, teachers in their schools had minimum academic expectations for students of poverty. Overall, the teachers lacked confidence in their capacity to improve student achievement. The principals' routine actions as vision-builders and data-driven leaders created a new worldview of what the school could do to change the trajectory of student academic achievement.

Another powerful role, dream-keeper, was evidenced by the four principals in this study. Visions are difficult to maintain. The principals' role as dream-keepers constantly reminded teachers of what was possible for students in poverty. The principals communicated an unshakable belief that all students could learn at high levels.

The final role of the principal as a critical theorist surfaced in the qualitative data and was grounded in the principals' values and beliefs. Principals lived their beliefs of social justice. As part of their nature, they were servant leaders. They worked to ensure equity in education for all students. The four principals in this study were tempered radicals who worked for change within the educational system.

The principals' roles that were manifested in the context of challenging schools constituted unique findings. Immersed in schools challenged by poverty, diversity of cultures, marginalized students, and low expectations, principals maintained the momentum of the change process through the exercise of these various roles. They pressed their staff to increase student achievement. The behaviors and practices of the principals' roles led to the transformation of the school's culture.

The second research question led to data results that supported the findings from the qualitative data obtained from interviews. The following research question was addressed:

Q2 What are the teachers' perceptions of principal leadership and the instructional climate in challenging school contexts of schools that demonstrate high growth?

Teachers in the four selected schools completed the High Growth Schools Survey that measured the domains (constructs) of the principal's leadership and the instructional climate. The Instructional Leadership results confirmed the positive impact of the principal on the instructional climate. The Peer Collaboration results established the significant relationship between the Instructional Leadership and Peer Collaboration domains. Organizational structures in the schools created or supported by principals that promoted teacher collaboration represented a positive, indirect principal effect on student

achievement. A study by Marzano et al. (2005) corroborated the strong relationship between instructional leadership and the professional learning community (collaboration, deprivitization, professional develop, and support for teacher influence).

The survey results of Reflective Dialogue domain indicated that teachers in the four schools had frequent conversations about instruction and student learning. Providing time for teachers to discuss student data to implement instructional changes in their classrooms was identified as a significant factor in student growth. Collaborative learning teams can transform the culture in the school through a continuous learning process (Chappuis, Chappuis, & Stiggins, 2009).

The domain results of Innovation showed an interesting finding. School B was significantly different from the other three schools. A high score in this domain indicated a strong orientation of the staff to take risks to improve student outcomes. School B was engaged in a redesign effort, a progressive new model of schooling. Although this finding is not transferable, the researcher speculates that effective schools are on an evolutionary path--continuously setting higher expectations for student learning--as demonstrated by their innovative efforts.

In this study, quantitative results supported the qualitative findings: strong instructional leadership, collegial instructional climate (peer collaboration), and a focus on instruction (Brookover, Schweitzer, Schneider, Flood, & Wisenbaker, 1978; DuFour & Eaker, 1998; Edmonds, 1979a, 1979b; Englert & Barley, 2008; Goddard, Hoy, & Woolfolk, 2000; Gurr, Drysdale, & Mulford, 2006; Hallinger & Heck, 1996; Harris & Chapman, 2002; Jacobson, 2008; Lambert, 2003; Lezotte, 2001; Leithwood et al., 2004, 2009).

The final research question focused on the sense-making of effective school principals:

- Q3 What is the phenomenon of sense-making of effective school principals in challenging school contexts that links to systemic changes in the school?

Sense-making was defined in the study as the meaning given to a situation or event derived from problem-solving and reflective thinking (Kim, 1993). The principals made sense of their environment through a lens of social justice. The nature of their *being* was that of a servant, driven by a cause to service children marginalized by society.

The phenomenon of sense-making became visible in the properties and dimensions of the roles principals performed in their schools: tenacious leader, vision-builder, dream-keeper, and critical theorist. These experienced principals used accumulated and tacit knowledge, personal mastery (Senge et al., 1994), and constant reflection to problem-solve instructional issues in their schools. The origin of the principals' sense-making was engendered in their beliefs and values related to equity for all students.

The principals in this study held the organization in trust (for the greater good) to serve the next generation of students. Stewardship, as a sense-making model of leadership, emerged from the fundamental influence of the servant leader--the principal. The conditions (challenging school context), actions, and interactions of principals' behaviors and practices led to consequences that gave rise to the central concept--stewardship. Stewardship (for the greater good) formed the foundation of the principals' sense-making. The principals' values and beliefs of service and stewardship were

predispositions for problem-solving and reflection. The principals' sense-making was linked as an underlying influence in the transformation of the school.

As documented in the literature, the behaviors and practices of the principals and the instructional climate present in all four schools were expected. For over 35 years, school reform efforts have organized the restructuring of schools around the Effective Schools correlates of instructional leadership, clear and focused mission, safe and orderly environment, climate of high expectations, frequent monitoring of student progress, positive home-school relations, opportunity to learn, and student time on task (Edmonds, 1979a; Lezotte, 2001). An illumination in this study was that principals and teachers created a new worldview of schools as agents of social change--the constant message that education is a students' best chance out of poverty.

Sergiovanni (2007a), in his discussion of out-of-the-box leadership, stated that schools operate in the wrong paradigm. Theories of leadership and schooling are dominated by positivism (Sergiovanni). This study revealed a different worldview of leadership--stewardship. This worldview has implications for the re-creation of schools, hiring practices of teachers and principals, and the distribution of leadership and power in school settings. The manner in which leadership is distributed in a worldview framed by stewardship shifts significantly the accountability in schools.

Implications for Leadership Theory and Practice

In this section, the theoretical and practical implications of stewardship as a sense-making model of leadership are presented. This study suggests a new framework for leadership to close the achievement gap between high and low performing students.

Implications for Leadership Theory

Current theories of leadership--contingency, situational, transactional, and transformational--may be insufficient to create the schools needed for challenging public school contexts. For example, leadership theories do not address many of the unique challenges faced by urban schools. New leadership theories are needed to address the unique complexities of social systems, i.e., culture, race, and poverty. The replication of successful schools has proven to be difficult as acknowledged by the Learning First Alliance (Togneri & Anderson, 2003).

Theoretical leadership models are needed to address organizational governance, distribution of leadership, and teacher empowerment in challenging school contexts. The current patriarchal system for organizing schools has not produced the results needed to educate all students, particularly those marginalized in society.

Stewardship as a sense-making model of leadership has the potential to re-create the organizational structures and the ethical responsibilities of schools and districts. The distinctions that separate this theory of leadership are moral dimensions and democratic ideals. Stewardship is predicated on the fundamental influence of servant leaders. As a model, stewardship is guided by shared beliefs and values within the school. Each staff member in the school is a steward who holds the organization in trust for the benefit of the greater good. Elements of the stewardship model include a commitment to students and to the organization's well-being, distribution of leadership, and empowerment of teachers (autonomy and accountability).

Stewardship as a sense-making model of leadership entails building a shared vision and mission of the school with the full participation of stakeholders. The

governing structure is altered to distribute the leadership, decision-making, and accountability to the people who do the work. Unwritten agreements are renegotiated, i.e., muted teachers' opinions in exchange for privilege and non-compliance are made public. A stewardship contract clearly outlines the redesign of the school and the commitments. The model based on stewardship shifts the worldview to allow for leadership and empowerment to develop at all levels of the organization. This model is an alternative to top down, bureaucratic structures.

Implications for Practice

Stewardship as a sense-making model of leadership offers a theory for addressing low achievement in high poverty and high minority schools. This model can be implemented at any level of the school's organization--grade-level teams, departments, building instructional teams, or at the administrative level. Stewardship as a sense-making model of leadership can be implemented by constructing the following conditions:

- Stewardship as a sense-making model requires a moral commitment to the mission and values of the organization.
- Principals and teachers collaborate to create new leadership structures, distribute power, and redesign their work.
- Principals, teachers, students, and parents develop a stewardship contract of their partnership around core values.
- Principals create greater opportunities for teacher empowerment through teacher leadership opportunities.

- The ownership, responsibility, and accountability for student outcomes are placed where the work in instruction is produced.
- Stewardship is practiced in the decision-making and reflections of principals and teachers. The model is grounded in the principles of stewardship and an overarching cause greater than individual self-interests.
- Hiring practices are reexamined to ensure that the right people are hired who are committed to the principles of stewardship, and the work of providing every student an excellent education.

Recommendations

Public schools have played a major role in our democracy as institutions for the common good (Fullan, 2003). The nation has turned to public schools to address the social or economic crises of our nation. Confidence in the ability of public schools to provide a world class education to all students has significantly declined (DuFour & Eaker, 1998). The Excellent Movement of the 1980s, the Restructuring Movement of the 1990s, and the current reauthorization of the Elementary and Secondary Education Act (ESEA) of 1965 (No Child Left Behind Act, 2002) have failed to produce the results citizens demand. We are at another crossroads in public education. The success of public schools has a direct effect on the social cohesion of our country, the distribution of wealth, and the nation's ability to compete in a global economy. Global, economic and social conditions demand new skills of all students.

Prevailing leadership theories that dominate school organizations were developed during an industrial age. New theories and worldviews are needed to prepare all students for the 21st century and to respond to seismic shifts in social, environmental, and political

issues, the global economy, technology, and communication. Given the urgency to create schools that can responsibly educate all students and prepare them for the 21st century, recommendations are presented for school districts and for future educational research:

Recommendations for School Districts

1. Sustain effective principal leadership and create a succession plan for new principals. Rationale: Continuous effective principal leadership is essential to sustain school improvements to impact student achievement.
2. Ensure the sustainability of effective leadership in high performing and high poverty schools. Rationale: High performing and high poverty schools need effective school principals (change agents) over a period of years to combat the tendency of the school's culture to regress to the status quo--low expectations of students and low student performance.
3. For hiring and assignment of principals and teachers to high poverty schools, consider the use of a principal and teacher instrument (Haberman, 1995) to measure leadership and commitment of individuals to educational excellence for students of poverty. Rationale: High poverty schools need principals and teachers who are committed to providing a high quality education for all students. Principals and teachers in high poverty schools must demonstrate a suitability to work in challenging school contexts.
4. Remove or reduce constraints for schools that demonstrate increased student achievement. In particular, provide additional support such as internal grants to schools that have consecutive years of increased student achievement and are in innovative stages of development. Rationale: Effective schools are on

an evolutionary pathway to reinvent effective ways of schooling to meet the needs of students.

5. Provide district and school-level professional development for principals and instructional coaches. Rationale: Professional development of instruction can build the collective efficacy of principals and teachers for greater student achievement.

6. Build and expand the teacher leadership program in school districts.
Rationale: A systemic leadership development program will empower classroom teachers and build teachers' capacity to facilitate instructional meetings, data-driven dialogues, and to mentor and coach peers. The instructional and leadership capacity building of classroom teachers has value-added potential for transforming the school's culture.

*Recommendations for Future
Educational Research*

1. Extend this study to investigate on a large scale the behaviors and practices of effective principals in challenging public schools contexts to generalize findings. Rationale: Alternative leadership theories are needed to address the achievement gap between high performing and low performing students.
2. Extend this study to investigate the differences between effective school principals and less effective school principals in high poverty, high needs schools. Rationale: Differences between less effective principals and effective principals in high poverty schools may be revealed to guide the work of educational practitioners.

3. Investigate the differences between effective school principals in high poverty, high needs schools with effective and less effective principals in the general population of schools to develop deeper understandings of the impact of school leadership. Rationale: A deeper understanding of the behaviors and practices of school principals may be further explicated by investigating school principals in a variety of school settings.
4. Extend this study to investigate the behaviors and practices of effective and less effective high school principals in high poverty, high needs schools. Rationale: The population sample in this study investigated the behaviors and practices of effective principals in elementary and middle-level schools of high poverty, high needs (challenging school contexts). Different organizational structures and challenges exist in public high schools. The behaviors and practices of high school principals in challenging school contexts need further explication.
5. Extend this study to explore the behaviors and practices of effective principals in challenging school contexts through case study. Rationale: A case study may reveal further implications for best practices of effective school principals in challenging school contexts.
6. Explore student and teacher empowerment in challenging public school contexts in which the principal is a servant leader. Rationale: Few studies in the literature review revealed a model of the school principal as a servant leader and the influence on student and teacher empowerment.

7. Extend the study to further define the theory of Stewardship as a Sense-making Model of Leadership in schools with different ethnic populations, e.g., Caucasian, African American, etc. Rationale: The current study was conducted in schools with a large percentage of students from Hispanic and Latino cultures.
8. Develop an instrument based on the constructs of servant leadership and stewardship to assess the suitability of principals to work in high poverty, high needs school environments. Rationale: A screening instrument or assessment is needed for informed-data in the recruitment and assignment of principals to high poverty, high needs schools. The selection of principal with the beliefs, skills, and disposition to work in high poverty, high needs schools is critical to change efforts in closing the achievement gap between low and high performing students.
9. Develop an instrument based on the construct of stewardship to assess teachers' aptness for working in high poverty, high needs school settings. Rationale: A screening instrument or assessment is needed to determine the suitability of teachers to work in high poverty, challenging school contexts.
10. Investigate other alternative models of leadership that might address the complexity of the tasks of school reform. Rationale: New worldviews of leadership are needed to address the low academic achievement of students, particularly in high poverty, high needs schools.
11. Develop partnerships between universities, educational research organizations, educational consortiums, and school districts to investigate and

support new models of schooling. Rationale: Greater alignment is needed between teacher and principal preparation programs and school districts' professional development programs for systematic approaches to school improvement.

Conclusion

The mixed methods design and grounded theory validated the behaviors and practices of four effective school principals and the positive instructional climate in challenging public school contexts. The principals' behaviors and practices had a positive impact on the instructional climate and student academic achievement.

In this study, a new theory emerged for educational leadership--Stewardship as a Sense-making Model of Leadership. The theoretical model articulated a construct of the principal as a servant leader--a fundamental influence on the transformation of school culture and student academic achievement. Implications for practice of the model were discussed. Recommendations for school districts and future research were provided. This study extended the body of knowledge related to educational leadership by presenting a new leadership model that explicated the unique roles of principals in challenging school contexts. The model sheds new light on the redesign of schools for the academic success of all students.

The disposition and role of the school principals extend beyond the role of instructional or transformational leaders as cited in educational research (Edmonds, 1979a; Hallinger, 1987; Hallinger & Heck, 1996, 1998; Hallinger & Leithwood, 1994; Harris & Chapman, 2002; Heck et al., 1990; Leithwood, 1994; Leithwood et al., 1994; Leithwood & Jantzi, 2006; Leithwood et al., 2004; Marzano et al., 2005; Newmann &

Wehlage, 1995; Pitner, 1988). Effective school principals in high poverty, high needs schools, given their sphere of influence, bring to action their beliefs analogous to the commitment of many renowned servant leaders (Nelson Mandela, Mahatma Gandhi, and Martin Luther King, Jr.). Stewardship as a Sense-making Model of Leadership in schools aligns with the beliefs, behaviors, and practices of many leaders who have produced significant changes in societies to promote equality. This new model of leadership in education has the potential to transform public education for the greater good.

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APPENDIX A

INTERVIEW QUESTIONS

Research Questions for Principals Interview Protocol



I am Sophia Masewicz, a doctoral candidate at the University of Northern Colorado. I am conducting a research study of effective school principals in high poverty and high minority schools who have impacted student growth significantly as measured by the Colorado Growth Model. You have been selected as a candidate for this research study based on your proven record of increasing student achievement in high poverty and high minority schools. Selected schools have a rating of “high” student growth as calculated by the Colorado Growth Model. This research study of quantitative and qualitative data is a progressive methodology to explore the principal effects in creating the conditions for organizational effectiveness and higher student achievement. The goal of the study is to illuminate the nuances of leadership behaviors that are difficult to measure using only statistical methods. The study is intended to expand the understanding of principals’ “sense-making”, behaviors, and practices that increase school efficacy and higher student achievement, particularly in challenging school contexts.

1. Describe the “state of the school” when you arrived?
2. Looking back over your administrative experiences, what incident or story can you share that shaped your leadership? What insights did you come away with?
3. How have you accumulated your knowledge and understandings of leadership?
4. In this study, sense-making is defined as the meaning given to a situation or event that is derived from the problem-solving and reflective thinking of principals. Are you comfortable with the term, sense-making, as I have used it?
5. Please discuss your understanding of what sense-making is for you as a school leader?
6. Can you think back to a situation in your school around teaching and learning that was most challenging? What happened? How did you make sense of the situation?
 - a. What led to this situation?
 - b. How does this situation connect with your past experiences?
 - c. What were the barriers/constraints?
 - d. Did you see anything in particular as helpful? What?
 - e. What were your conclusions, ideas and thoughts about how to move forward?
 - f. If you waved a magic wand, what would you do differently?
7. How do you make clear to the staff your expectations for meeting instructional goals?
8. How do you communicate your standards for teaching and student learning?
9. What is your vision for the school and how do you communicate this?
10. How do you track student progress? How often?
11. How do you actively monitor teaching in the school? How often?

12. Marzano, Waters, and McNulty (2005) in their book, *School Leadership that Works*, describe leadership responsibilities in first-order change and second order change. First order change is the refinement of innovations within the school (small, incremental changes). Second order change, a large change, entails challenging the status-quo.
 - a. What was a possible key incident or situation in the school that you would describe as second-order change?
 - b. How did you think about incident or do you plan the situation?
 - c. How did you manage the change process?
13. What are you most proud of in your work at the school? How did you accomplish this?
14. Do you have any additional thoughts that we did not talk about?

APPENDIX B

IRB APPROVAL

UNIVERSITY of
NORTHERN COLORADO
 Institutional Review Board (IRB)



September 4, 2009

TO: Mark Riddle
 Sociology

FROM: Gary Heise, Co-Chair *GHH*
 UNC Institutional Review Board

RE: Expedited Review of Proposal, *School Principals: Illuminating the Behaviors and Practices of Effective School Principals in Challenging School Contexts*, submitted by Sophia Masewicz (Research Advisor: Linda Vogel and Martha Cray)

First Consultant: The above proposal is being submitted to you for an expedited review. Please review the proposal in light of the Committee's charge and direct requests for changes directly to the researcher or researcher's advisor. If you have any unresolved concerns, please contact Gary Heise, School of Sport and Exercise Science, Campus Box 39, (x1738). When you are ready to recommend approval, sign this form and return to me.

I recommend approval as is. *Mark D Riddle* *29 Sept 09*
 Signature of First Consultant Date

The above referenced prospectus has been reviewed for compliance with HHS guidelines for ethical principles in human subjects research. The decision of the Institutional Review Board is that the project is approved as proposed for a period of one year: *10/15/2009* to *10/13/2009*.

Gary D Heise *10/13/2009*
 Gary Heise, Co-Chair Date

Comments: *e-mailed 5 Oct 09*

APPENDIX C

CONSENT FORM TO PARTICIPATE IN A RESEARCH INTERVIEW: PRINCIPALS

Consent Form to Participate in a Research Interview -
Principal
University of Northern Colorado



Research Study Title: School Principals: Illuminating the Behaviors and Practices of
Effective School Principals in Challenging Public School Contexts

Researcher: Sophia Masewicz

Co-Advisors: Linda Vogel, Ph.D. (309.370.1900) and Martha Cray, Ph.D.
(970.351.2960)

I am Sophia Masewicz, a doctoral candidate at the University of Northern Colorado. I am conducting a research study of effective school principals in high poverty and high minority schools who have impacted significantly student growth as measured by the Colorado Growth Model. This mixed methods research study of quantitative and qualitative data is a progressive methodology to explore principal effects on student academic achievement. The goal of this study is to bring insights into the nuances of leadership behaviors that are difficult to measure using only statistical methods. The study is intended to expand our understanding of effective principals' "sense-making", behaviors, and practices that increase school efficacy and higher student achievement.

You have been selected as a candidate for this research study based on your proven record of increasing student achievement in high poverty and high minority schools. Selected schools had a rating of "high" student growth as calculated by the Colorado Growth Model. I would like to invite you to participate in this promising study. You are invited to participate in an interview. The interview will be audio-recorded and will take approximately 60 minutes. The researcher would also like to shadow you in your daily responsibilities. Additional time with you at a later date may be needed to check the accuracy of the notes and transcript and to conduct any follow-up questions. Your responses in the interview and all other field observation data will remain confidential and no one except for the researcher and the co-advisors at UNC will have access to the information. The data used in the study will be destroyed after the study is completed.

The interview questions will address "sense-making", the making of meaning of your school context through problem-solving and reflections that guide your behaviors and practices to meet the challenges in your school. The nature of the questions is not designed to be confrontational or upsetting. Very little stress is associated with the interview. Your responses will be summarized and combined with others in the study to gain a deeper understanding about the nuances of effective school principals' "sense-making", behaviors, and practice in moving their schools forward. This study and its procedures have been approved by the UNC Institutional Review Board. The procedures involve no risk to you or your position at the school. No names will be used in the transcriptions or documents. Responses will be coded by a given participant's number.

Core teachers of math, science, reading, and writing will be asked to participate in an electronic survey of teachers' perceptions of school leadership and the instructional climate. Please see the attached invitation to teachers.

You are advised that UNC is a publicly-funded institution of higher education and as such, liability may be limited under and governed by the Colorado Governmental Immunity Act. If you have questions, I will gladly arrange a date and time via telephone to discuss your concerns prior to the interview.

Participation is voluntary. You may choose to withdraw from the study at anytime. Having read the above and having had the opportunity to ask questions, please sign below to consent to participate in this research. Please send this signed consent form to the researcher in the self-addressed envelope.

Authorization: I have read the above and understand the nature of this study and agree to participate. I understand that by agreeing to participate in this study, I have not waived any legal or human rights. I also understand I have the right to refuse to participate and that I can withdraw at any time before or during the interview.

Participant's Signature_____ Date_____

Researcher's Signature_____ Date_____

APPENDIX D

CONSENT FORM TO PARTICIPATE IN A RESEARCH INTERVIEW: TEACHERS

Consent Form to Participate in a Research Electronic Survey -
Teachers
University of Northern Colorado



Research Study Title: School Principals: Illuminating the Behaviors and Practices of Effective School Principals in Challenging Public School Contexts
 Researcher: Sophia Masewicz
 Co-Advisors: Linda Vogel, Ph.D. (309.370.1900) and Martha Cray, Ph.D. (970.351.2960)

I am Sophia Masewicz, a doctoral candidate at the University of Northern Colorado. I am conducting a research study of effective school principals in high poverty and high minority schools who have impacted significantly student growth as measured by the Colorado Growth Model. This mixed methods research study of quantitative and qualitative data is a progressive methodology to explore principal effects on student academic achievement through a semi-structured interview with the principal and through the perceptions of teachers in regards to instructional leadership and the instructional climate. The goal of this study is to bring insights into the nuances of leadership behaviors that are difficult to measure using only statistical methods. The study is intended to expand our understanding of effective principals' "sense-making", behaviors, and practices that increase school efficacy and higher student achievement.

Your school has been selected for this research study based on the school's data of increased student achievement in a high poverty and high minority school. Selected schools had a rating of "high" student growth as calculated by the Colorado Growth Model. I would like to invite you to participate in this promising study. You are invited to participate in an electronic survey. The survey of 33 items will take approximately 20 minutes. Your responses in the survey will remain confidential. No individual identifiers are used in the electronic survey. Only the researcher and the co-advisors at UNC will have access to the information that is electronically calculated in graphs and charts. The data used in the study will be destroyed after the study is completed.

Surveys developed by the Consortium on Chicago School Research (CCSR; 2003) will be used to gather teachers' perceptions of instructional leadership and the instructional climate. The CCSR survey will include items in regards to instructional, peer collaboration, innovation, and Reflective Dialogue. The results will be used in descriptive statistics to describe the instructional climate and the teachers' perception of the principal's instructional leadership. Instructional climate has a significant relationship to student achievement.

Core teachers of math, science, reading, and writing will be asked to participate in an electronic survey of teachers' perceptions of school leadership and the instructional climate. Your participation in the survey will serve as a notice of consent. Participation is voluntary. You may choose to withdraw from the study at anytime.

You are advised that UNC is a publicly-funded institution of higher education and as such, liability may be limited under and governed by the Colorado Governmental Immunity Act. If you have questions, I will gladly arrange a date and time via telephone to discuss your concerns.

Thank you for your consideration to participate in this important study of instructional leadership in challenging schools.

An incentive to enter a \$100 drawing and other gift certificates totaling \$100 will be provided to participants who complete the survey. There is no financial cost to you or the district associated with this study.

Sophia Masewicz, Ed. D. Candidate

Barbara L. Jackson Scholar

2008 – 2009 Title I Distinguished Principal of the Year

APPENDIX E

APPROVAL TO USE CONSORTIUM ON CHICAGO SCHOOL RESEARCH (CCSR) SURVEY ITEMS



April 8, 2009

Ms. Sophia Masewicz
13562 Thorncreek Circle
Thornton, CO 80241

Dear Ms. Masewicz:

The Consortium on Chicago School Research at The University of Chicago allows for the use of its survey questions at no charge and without any formal written release. The questions are provided on our website and may be used in the proper format as seen by the party using the questions.

You must also cite the Consortium on Chicago School Research in your study. If there are any questions please see our website or call 773 834-3629 for further information.

Thank you,

Ms. Loretta Morris
Survey Data Manager

APPENDIX F

CONSORTIUM ON CHICAGO SCHOOL
RESEARCH SURVEY

INST Instructional Leadership 2003 Individual Level Reliability- Elementary: 0.90
High School: 0.91
2003 School Level Reliability: 0.75

Instructional Leadership assesses teachers' perceptions of their principal as an instructional leader. Teachers were asked about their principal's leadership with respect to standards for teaching and learning, communicating a clear vision for the school, and tracking academic progress. In schools with a high score, teachers view their principal as very involved in classroom instruction, thereby able to create and sustain meaningful school improvement.

<i>Item</i>	<i>Text</i>	<i>Difficulty</i>
ldr07q01	Please mark the extent to which you disagree or agree with each of the following: The principal at this school: Makes clear to the staff his or her expectations for meeting instructional goals. <i>Strongly Disagree, Disagree, Agree, Strongly Agree</i>	-0.53
ldr07q03	Please mark the extent to which you disagree or agree with each of the following: The principal at this school: Sets high standards for teaching. <i>Strongly Disagree, Disagree, Agree, Strongly Agree</i>	-0.41
ldr07q05	Please mark the extent to which you disagree or agree with each of the following: The principal at this school: Sets high standards for student learning. <i>Strongly Disagree, Disagree, Agree, Strongly Agree</i>	-0.26
ldr07q02	Please mark the extent to which you disagree or agree with each of the following: The principal at this school: Communicates a clear vision for our school. <i>Strongly Disagree, Disagree, Agree, Strongly Agree</i>	-0.09
ldr07q06	Please mark the extent to which you disagree or agree with each of the following: The principal at this school: Presses teachers to implement what they have learned in professional development. <i>Strongly Disagree, Disagree, Agree, Strongly Agree</i>	0.25
ldr07q04	Please mark the extent to which you disagree or agree with each of the following: The principal at this school: Understands how children learn. <i>Strongly Disagree, Disagree, Agree, Strongly Agree</i>	0.26

ldr07q07	Please mark the extent to which you disagree or agree with each of the following: The principal at this school: Carefully tracks student academic progress. <i>Strongly Disagree, Disagree, Agree, Strongly Agree</i>	0.78
ldr07q10	Please mark the extent to which you disagree or agree with each of the following: The principal at this school: Actively monitors the quality of teaching in this school. <i>Strongly Disagree, Disagree, Agree, Strongly Agree</i>	1.09
ldr07q09	Please mark the extent to which you disagree or agree with each of the following: The principal at this school: Knows what's going on in my classroom. <i>Strongly Disagree, Disagree, Agree, Strongly Agree</i>	1.55

Category Descriptions

Weak	Teachers disagree or strongly disagree with all items on the scale.
Mixed	Some teachers agree and some disagree that their principal makes testing expectations clear, sets high standards for both teaching and student learning, and communicates a clear vision for the school; they disagree that their principal presses them to implement what they learn in professional development activities, understands how students learn, and tracks student academic progress.
Strong	Teachers agree with all items on the scale.
Very strong	Teachers strongly agree that their principal makes teaching expectations clear, sets high standards for both teaching and students learning, and communicates a clear vision for the school; they agree or strongly agree that their principal presses them to implement what they learn in a professional development activities, understands how students learn, and tracks student academic progress.

instruction across grades, and teachers design instructional programs together.

Extensive Strongly agree that other teachers are cordial; they agree or strongly agree that collaborative efforts make their school run well, teachers that coordinate instruction across grades, and teachers design instructional programs together.

INNV Innovation 2003 Individual Level Reliability-*Elementary:* 0.89*High School:* 0.89*2003 School Level Reliability:* 0.76

Innovation indicates whether teachers are continually learning and seeking new ideas, have a "can do" attitude, and are encouraged to change. A high score means strong orientation to improve among faculty, indicating their willingness to try new things for sake of their students and to be part of an active learning organization themselves.

Item	Item Text	Difficulty
scm04q11	How many teachers in this school: Are really trying to improve their teaching <i>None, Some, About Half, Most, Nearly All</i>	-0.68
ldr06q16	Please mark the extent to which you disagree or agree with each of the following: In this school, teachers are continually learning and seeking new ideas. <i>Strongly Disagree, Disagree, Agree, Strongly Agree</i>	-0.47
ldr06q15	Please mark the extent to which you disagree or agree with each of the following: All teachers are encouraged to "stretch and grow." <i>Strongly Disagree, Disagree, Agree, Strongly Agree</i>	-0.35
ldr06q14	Please mark the extent to which you disagree or agree with each of the following: In this school, teachers have a "can do" attitude. <i>Strongly Disagree, Disagree, Agree, Strongly Agree</i>	0.02
scm04q05	How many teachers in this school: Are eager to try new ideas? <i>None, Some, About Half, Most, Nearly All</i>	0.31
scm04q04	How many teachers in this school: Are willing to take risks to make this school better? <i>None, Some, About Half, Most, Nearly All</i>	0.49

Category Descriptions

Minimal	None or some of the teachers really try to improve their teaching; they disagree or strongly disagree that teachers are continually learning, are encouraged to grow, and have a "can do" attitude; and none or some of the teachers try new ideas and take risks.
Limited	About half of the teachers really try to improve their teaching; some teachers agree and others disagree that teachers are continually learning, are encouraged to grow, and have a "can do" attitude; and only some of the teachers try new ideas and take risks.

Moderate	About half or most of the teachers really try to improve their teaching; they agree that teachers are continually learning, are encouraged to grow, and have a "can do" attitude; and about half of the teachers try new ideas and take risks.
Extensive	Most or nearly all of the teachers really try to improve their teaching; they agree or strongly agree that teachers are continually learning, are encouraged to grow, and have a "can do" attitude; and most or nearly all of the teachers try new ideas and take risks.

<i>Item</i>	<i>Item Text</i>	<i>Difficulty</i>
scm01q04	Please mark the extent to which you disagree or agree with each of the following: Teachers talk about instruction in the teachers' lounge, faculty meetings, etc... <i>Strongly Disagree, Disagree, Agree, Strongly Agree</i>	-1.12
scm01q05	Please mark the extent to which you disagree or agree with each of the following: Teachers in this school share and discuss student work with other teachers. <i>Strongly Disagree, Disagree, Agree, Strongly Agree</i>	-1.03
scm01q03	Please mark the extent to which you disagree or agree with each of the following: Teachers in this school regularly discuss assumptions about teaching and learning. <i>Strongly Disagree, Disagree, Agree, Strongly Agree</i>	-0.43
scm02q01	This school year, how often have you had conversations with colleagues about: What helps students learn best? <i>Less than once a month, 2 or 3 times a month, Once or twice a week, Almost daily</i>	-0.10
scm02q04	This school year, how often have you had conversations with colleagues about: Managing classroom behavior? <i>Less than once a month, 2 or 3 times a month, Once or twice a week, Almost daily</i>	-0.04
scm02q02	This school year, how often have you had conversations with colleagues about: Development of new curriculum? <i>Less than once a month, 2 or 3 times a month, Once or twice a week, Almost daily</i>	0.84
scm02q03	This school year, how often have you had conversations with colleagues about: The goals of this school? <i>Less than once a month, 2 or 3 times a month, Once or twice a week, Almost daily</i>	0.85

Category Descriptions

Almost none	Disagree or strongly disagree they talk informally about instruction, share and discuss student work with other teachers, or discuss assumptions about student learning; they have conversations about how students learn best, managing student behavior, developing new curriculum, and school goals less than once a month.
Occasional	Agree they talk informally about instruction, share and discuss student work with other teachers; some agree or disagree that they discuss assumptions about student learning; they have conversations about how students learn best and managing student behavior 2 to 3 times a month; and they have conversation about developing new curriculum and school goals less than 2 to 3 times a month.
Regular	Agree they talk informally about instruction, share and discuss student work with other teachers, and discuss assumptions about student learning; they have conversations about how students learn best and managing student behavior once or twice a month and have conversation about developing new curriculum and school goals from 1 to 3 times a month.
Frequent	Strongly agree they talk informally about instruction, share and discuss student work with other teachers, and discuss assumptions about student learning; they have conversations about how students learn best, managing student behavior, developing new curriculum, and school goals almost daily.

APPENDIX G

HIGH GROWTH SCHOOLS SURVEY

High Growth Schools

Questions marked with an asterisk (*) are mandatory.

1 * How many years have you taught?

2 * How many years have you taught in this school?

3 * What grade level do you currently teach?

* At what school do your currently teach?

4

Instructional Leadership

Instructional Leadership assesses teachers' perceptions of their principal as an instructional leader. Teachers were asked about their principal's leadership with respect to standards for teaching and learning, communicating a clear vision for the school, and tracking academic progress. In schools with a high score, teachers view their principal as very involved in classroom instruction, thereby able to create and sustain meaningful school improvement.

* The principal at this school: Makes clear to the staff his or her expectations for meeting instructional goals.

5

Strongly Disagree	Disagree	Agree	Strongly Disagree
1	2	3	4

* The principal at this school: Sets high standards for teaching.

6

Strongly Disagree	Disagree	Agree	Strongly Agree
1	2	3	4

* The principal at this school: Sets high standards for student learning.

7

Strongly Disagree	Disagree	Agree	Strongly Agree
1	2	3	4

* The principal at this school: Communicates a clear vision for our school.

8

Strongly Disagree	Disagree	Agree	Strongly Agree
1	2	3	4

* The principal at this school: Understands how children learn.

9

Strongly Disagree	Disagree	Agree	Strongly Agree
1	2	3	4

* The principal at this school: Presses teachers to implement what they have learned in professional development.

10

Strongly Disagree	Disagree	Agree	Strongly Agree
1	2	3	4

* The principal at this school: Carefully tracks student academic progress.

11

Strongly Disagree	Disagree	Agree	Strongly Agree
1	2	3	4

* The principal at this school: Actively monitors the quality of teaching in 12 this school.

Strongly Disagree	Disagree	Agree	Strongly Agree
1	2	3	4

* The principal at this school: Knows what's going on in my classroom.

13	Strongly Disagree	Disagree	Agree	Strongly Agree
	1	2	3	4

* Peer Collaboration

Peer Collaboration reflects the extent of a cooperative work ethic among staff. Teachers were asked about the quality of relations among the faculty, whether school staff members coordinate teaching and learning across grades, and whether they share efforts to design new instructional programs. Schools where teachers move beyond just cordial relations to actively working together score high on this scale and can develop deeper

14 understanding of students, each other, and their profession.

Most teachers in this school are cordial.

Strongly Disagree	Disagree	Agree	Strongly Agree
1	2	3	4

* The principal, teachers, and staff collaborate to make this school run effectively.

15	Strongly Disagree	Disagree	Agree	Strongly Agree
	1	2	3	4

* Teachers at this school make a conscious effort to coordinate their teaching with instruction at other grade levels.

16	Strongly Disagree	Disagree	Agree	Strongly Agree
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1	2	3	4
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* Teachers design instructional programs together.

17	Strongly Disagree	Disagree	Agree	Strongly Agree
	1	2	3	4

* Innovation

Innovation indicates whether teachers are continually learning and seeking new ideas, have a "can do" attitude, and are encouraged to change. A high score means strong orientation to improve among faculty, indicating their willingness to try new things for sake of their students and to be part of an active learning organization themselves.

18	None	Some	About Half	Most	Nearly All
	1	2	3	4	5

How many teachers in this school: Are really trying to improve their teaching.

* In this school, teachers are continually learning and seeking new ideas.

19	Strongly Disagree	Disagree	Agree	Strongly Agree
	1	2	3	4

* All teachers are encouraged to "stretch and grow."

20	Strongly Disagree	Disagree	Agree	Strongly Agree
	1	2	3	4

* In this school, teachers have a "can do" attitude.

21	Strongly Disagree	Disagree	Agree	Strongly Agree
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1	2	3	4
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* How many teachers in this school are eager to try new ideas?

22	None	Some	About Half	Most	Nearly All
	1	2	3	4	5

* How many teachers in this school are willing to take risks to make this school better?

23	None	Some	About Half	Most	Nearly All
	1	2	3	4	5

* Reflective Dialogue

Reflective Dialogue reveals how much teachers talk with one another about instruction and student learning. Teachers reported how often they discuss curriculum and instruction as well as school goals, and how best to help students learn and how to manage their behavior. A high score indicates that teachers are engaged in frequent conversations with each other about instruction and student learning, helping to build common beliefs about the conditions of good schooling.

24

Teachers talk about instruction in the teachers' lounge, faculty meetings, etc...

Strongly Disagree	Disagree	Agree	Strongly Agree
1	2	3	4

* Teachers in this school share and discuss student work with other teachers.

25	Strongly Disagree	Disagree	Agree	Strongly Agree
	1	2	3	4

26 * Teachers in this school regularly discuss assumptions about teaching and learning.

Strongly Disagree	Disagree	Agree	Strongly Agree
1	2	3	4

* This school year, how often have you had conversations with colleagues about: What helps students learn best?

27

Less than once a month	2 or 3 times a month	Once or twice a week	Almost daily
1	2	3	4



High Growth Schools

Questions marked with an asterisk (*) are mandatory.

* This school year, how often have you had conversations with colleagues about: Managing classroom behavior?

28

Less than once a month	2 or 3 times a month	Once or twice a week	Almost daily
1	2	3	4

* This school year, how often have you had conversations with colleagues about: Development of new curriculum?

29

Less than once a month	2 or 3 times a month	Once or twice a week	Almost daily
1	2	3	4

* This school year, how often have you had conversations with colleagues about: The goals of this school?

30

Less than once a month	2 or 3 times a month	Once or twice a week	Almost daily
1	2	3	4

