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PRINCIPAL CHANGE FACILITATOR STYLE AND STUDENT ACHIEVEMENT:

A STUDY OF SCHOOLS IN THE MIDDLE

by

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Bachelor of Arts
Brigham Young University
1986

Master of Education
Brigham Young University
1989

A dissertation submitted in partial fulfillment
of the requirements for the

Doctor of Education in Educational Leadership

Department of Educational Leadership
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May 2012

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THE GRADUATE COLLEGE

We recommend the dissertation prepared under our supervision by

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ABSTRACT

Principal Change Facilitator Style and Student Achievement: A Study of Schools in the Middle

by

Steven Keith Stewart

Dr. Gene E. Hall, Ph.D., Examination Committee Chair
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Research reflecting the influence of leadership in middle level schools related to improving student achievement is scarce in spite of the pressure placed on schools by federal mandates and policies, such as NCLB, to reach ever-increasing levels of achievement. Although there is extensive literature on leadership and its possible influence on climate and culture, teacher efficacy, vision and goals of schools, and instruction, most of these topics are considered indirectly linked to student achievement. Few, if any, of these studies touch on the specific nature of middle level schools and how principal leadership might influence improved student achievement.

This quantitative dissertation study examined the relationship of the Change Facilitator Style (CFS) (Hall and George, 1999) of 10 middle school principals with student test scores in one mid-size suburban school district in the intermountain west. The questions that guided this study were: (1) How do middle school principals vary in CFS? (2) What is the extent of agreement between teacher ratings of a middle school

principal's CFS and the principal's self-rating of CFS? (3) What is the relationship between a middle school principal's CFS and student achievement?

This study explored possible relationships between CFS and student achievement by using the Change Facilitator Style Questionnaire (CFSQ) (Hall & George, 1999) to identify principal CFS and analysis of variance (ANOVA) to analyze the data.

Findings documented that within the set of middle school principals rated in this study by their teachers, each CFS was represented. Even so, teachers did not unanimously view their principal as being of one style. Agreement between teacher ratings and principal self-ratings was limited to 50%.

Findings also suggested that Initiator and Manager styles of leadership were more effective in improving student test scores with Initiators showing more overall progress and Managers showing more progress in math.

This study is important because it provides tentative insights into factors that appear to influence improved student achievement at the middle school level, especially those related to the way in which principals approach implementing change in their schools. As a replication of a prior study done at the elementary level in an urban school district in the U.S., this study provides an initial examination of middle school principal change leadership and possible relationships with student test scores.

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CHAPTER 1

INTRODUCTION

In November 2009, U.S. News and World Report published a special issue containing numerous articles on leadership. One of them questioned President Barack Obama's ability to lead in a climate of crisis (Walsh, 2009). The title of this particular article read, "The Toughest Job in the World" and was followed by the teaser, "The bad news just keeps coming for President Obama. How he handles it could end up defining his presidency". The same statement can be applied when considering others in leadership roles, whether they are leaders of nations, corporations, teams, or schools.

We commonly hear that leadership makes a difference in the outcome of any endeavor. Whether for good or for bad, leadership matters. Just ask anyone who faced the devastation of Hurricane Katrina, or those affected by the epic tragedy of September 11, 2001. The former was cast as leadership debacle while the latter was seen as an event featuring heroic leadership. Failed leadership led to the downfall of Enron at the end of 2001 and was responsible for the collapse of many financial institutions over the course of the next several years (Lytle, 2009). Similarly, it was the presence of effective leadership that saved every crewman aboard the *Endurance* in 1915.

From the time we are born, we look to those who will guide us through life's journey for guidance and direction. Most people would agree that the leadership of parents has far reaching effects in determining the ultimate quality of our lives. All that we are and all that we may become hangs in the balance. As we grow older, we find others who become leaders in our lives. Eventually, through observation, exploration, and

experience people may become leaders themselves. Leadership permeates all facets of our existence. We lead or we follow. Either way leadership influences us.

Literature is rife with references to great leaders and their attributes, personalities, skills, traits and styles. Bass (2008) states "leadership is often regarded as the single most critical factor in the success of institutions". Noted historian Arthur Schlesinger (1999) asked us to consider the outcome of chance events in the lives of individual leaders. What would have happened if, nine years prior to the Nazi blitz, the car that hit Winston Churchill in New York had killed him? What would have happened if Franklin Roosevelt had been killed by the assassin's bullet instead of Chicago Mayor Cermak? What would have happened if Hitler had died on the western front in 1916? How different would things have been and how would their successors have responded?

While not on the same scale as national governments, large corporations, and epic tragedies, leading schools is fraught with its own kind of peril. As leaders in an institution established to produce an educated populace able to participate in the responsibilities and duties of a free citizenry, principals are under tremendous scrutiny regarding the results of their efforts.

Background

Seventeenth century French author Francois de la Rochefoucauld is credited with the saying, "The only thing constant in life is change." When organizations or institutions find unexamined or historical patterns of practice, change agents may challenge the status quo and encourage infusion of new ideas to fill identified needs (Marzano, Waters, and

McNulty, 2005). When the current situation no longer serves the needs of a group nor produces the results that were expected, change is warranted. In fact, it is demanded.

Change is often referred to as reform. If you Google the word "reform" and scan the litany of websites calling for reform in numerous areas, you quickly realize that some are repeated more often than others. A quick perusal reveals that education, health care, government, and financial reform seem to appear more often than others, including taxes and immigration.

In education, reform is a constant concern, particularly in the middle schools, being sandwiched between the relative security of the nurturing elementary school and the more adult-like high school. Middle school leaders are faced with the dilemma of wading through countless calls for reform from a variety of sources and, while maintaining some semblance of order at the school, initiating appropriate action to address legitimate concerns. While some leaders view their roles as managerial in nature, today's middle school leader must recognize the educational and social context in which they operate. This requires them to analyze their own particular leadership style and skill set while recognizing the unique needs of adolescent and pre-adolescent students in an atmosphere of high stakes accountability.

With the advent of accountability and high stakes testing now, more than ever, principals must be aware of how they influence the critical goal of student learning. Understanding their personal set of skills, approach to the task, and ability to lead school efforts, change implementation becomes of paramount importance in order to maximize the results of those efforts.

While there seems to be consensus regarding the importance and impact of leadership on the effectiveness of schools, there is yet a dearth of research exploring the connection of school leadership to student achievement. The research that does exist is heavy on the influence principals have on elements of the organization, such as teacher pedagogy, school climate, and professional development activities. Hallinger and Heck (1996) explain "the impact attained by administrators on desired school outcomes occurs through manipulation of, or interaction with, features of the school organization". They caution against assuming any direct impact on student learning. Regardless, principals impact the learning culture of the school. However, more research is required in order to add to the existing body of knowledge and to more closely examine possible links of principal leadership to student achievement.

Statement of the Problem

There is an abundance of writing and discussion about the importance of principal leadership on school effectiveness (Leithwood and Mascall, 2008; Marzano, Waters, and McNulty, 2005). Most of the recent research is focused on school improvement efforts related to No Child Left Behind (NCLB) and on teacher effectiveness. Few studies focus on principal leadership related to student achievement. Of particular concern is how we come to understand if and how principal leadership style and behavior affects student achievement. Because many researchers are hesitant to attribute direct influence to principals, there are few studies attempting to do so. This is especially true at the middle school level. While the pool of researchers of the middle level has expanded remarkably since the 1980's, most of the research is related to organizational topics concerning middle schools such as grade span, school size, departmentalization, advisory grouping,

and interdisciplinary teaming, as well as topics related to adolescence and adolescent behavior (MacIver and Epstein, 1991). More research is needed connecting leadership at the middle level to student achievement.

Purpose of the Study

The purpose of this study was to explore possible relationships between principal leadership and student achievement by replicating a study done at the elementary school level in an urban city in the northeast, by Hall, Negroni, and George (2006) using Change Facilitator Style (CFS) as the theoretical framework. In the original study, statistically significant relationships were found between principal's CFS and student achievement.

Context of the Study

The replication of the original study was done at the middle school level in a suburban school district in the intermountain west. A comparison of demographics of the two areas yields a vastly different set of school systems. The city in the original study had high percentages of adult illiteracy and adults without a high school diploma. A large percentage of students came from non-English speaking families (57%) and qualified for free and reduced lunch (93%).

The school district identified for the current study has less than 6% of its population living in non-English speaking homes and is only moderately impacted by the number of families qualifying for free and reduced lunch. However, the district has one of the lowest levels of expenditure per pupil in a state that is ranked near the bottom of the list nationally. And, while demographics between the two school districts do not compare, they are changing in the target district.

Since 2002, the district has been implementing a Professional Learning Community (PLC) model and has directed most of their professional development efforts toward teacher collaboration. Middle school principals have created their own cohort in order to promote discussions of strategies and to use as a forum to share ideas and insights. Middle level education is of such importance that the study of the effects of principal leadership is needed to enhance the opportunities for schools to make a difference for students at this critical juncture.

Research Questions

The following questions guided the study:

1. How do middle school principals vary in CFS?
2. What is the extent of agreement between teacher ratings of a principal's CFS and the principal's self-rating of CFS?
3. What is the relationship between middle school principal's CFS and student achievement?

Research Design and Methodology

The methodology used in this study is an explanatory method using a quantitative research design that seeks to address the association between variables of Change Facilitator Style and student achievement (Creswell, 2008).

The study took place in a mid-size suburban school district in the intermountain west. This district, while not identified as at-risk like the school district in the original study, is one of the lowest districts in expenditure per pupil in the nation. Out of necessity, doing more with less is required of the administrations and faculties of the schools. The district has also been faced with a great deal of growth. From 2002 to 2011,

the district grew from 48,263 students to 68,507 students representing a 42% increase over the last decade. In addition to this growth, since 2004 the district has experienced a 68% increase in ethnic minorities and those living in poverty, magnifying responsibility to help those sub-groups that cause schools to fail to meet the demands of Adequate Yearly Progress (AYP) within the No Child Left Behind (NCLB) system. Special Education numbers have remained steady at 10% of the student population.

The target population for this study was all middle school principals. The representative sample was the 11 middle school principals in a purposefully selected school district in the intermountain west. Since the researcher is one of the middle school principals in the district, he and his school were excluded to avoid bias, reducing the sample to 10 schools. Participants were aware of the study and as colleagues of the researcher were supportive of the study and agreeable regarding their participation.

In this explanatory correlational study the relationship between the Change Facilitator Style of principals and student achievement was examined. The dependent variable was student scores on the state's 2011 end-of-year Criterion Referenced Tests (CRT) in mathematics, science, and language arts. The independent variable was principal Change Facilitator Style (CFS).

A survey of principal leadership style was conducted using the Change Facilitator Style Questionnaire (CFSQ) (Hall and George, 1999). The CFSQ was administered to ten middle school principals to determine their self-appraisal of their CFS. Teachers at each school were also given the opportunity to complete a CFSQ to provide data related to the CFS of their principals. Out of 493 teachers, 321 completed surveys with a range of 37%

to 95% of each school's teachers completing surveys. Teacher responses were totaled, and the highest percentage of teacher ratings in a specific style determined the ultimate style designation for each principal. The survey results from principals were compared with the assessment results of each principal's teachers in order to answer to what degree teacher evaluation of their principal's CFS agreed with the principal's self-rating.

Student achievement data (end of level tests in math, science, and language arts) for 8th grade students who attended each school during grades 7 and 8 during the 2009-2010 and 2010-2011 school years were analyzed and reviewed using an analysis of variance (ANOVA) to identify relationships between CFS and student achievement.

The dependent variable for this study was the 8th grade end-of-level tests administered by the state at each school for students who attended each school through both 7th and 8th grades. The total scores, as well as sub-test scores, for mathematics, science, and language arts were analyzed. Through analysis of the data, relationships between principal CFS and student achievement were explored and findings reported.

Limitations and Delimitations

In order to replicate the original study, the researcher chose to identify a single district and its principals at the middle school level for participation. When participants for the study were selected, the researcher, who was an active practitioner in the selected district, chose to use a convenience sample due to the fact that his sponsoring university is in another state and access to a sample was best achieved by working within his own geographical area. Therefore, the sample may not be representative of the general population.

Selecting all principals in a given district may not necessarily provide a representative sample of all middle school principals. In this case, all of the principals in this district are male. As one of the middle school principals in the selected district, the researcher is a colleague of the participant principals, which may produce bias based on the familiarity of the researcher with each of the other principals. However, the knowledge and understanding of the principals and their work provides the researcher with an ability to comment from an insider's perspective.

The researcher is aware of the dilemma that familiarity can create related to ethics and confidentiality. Great caution was exhibited to protect the identity of each principal and to act ethically when commenting on principal behaviors and attitudes, limiting comments to observable behaviors while avoiding judgment.

Three of the schools surveyed had lower than expected survey response rates of 37%, 42%, and 44%. Since the response rate for each of the other schools was 59% or better, the principals at the three schools in question may not be as accurately portrayed as principals at the other seven schools. The researcher chose to move forward rather than undertake the arduous task of locating teachers who had begun their summer break.

The original study used a 3-member panel of individuals who had worked in the district's central office for several years and had a working knowledge of the leadership approach of each principal. Using their knowledge of day-to-day behaviors of each principal and comparing that knowledge to the formal paragraph definitions of the three CF Styles, the panel came to a consensus of each principal's rating. For the current study, the CFSQ was used exclusively to determine the CF Style of each principal. This may

result in less reliability and less objectivity since the ratings of a large number of individual teachers were averaged together to determine CF Styles of principals.

Finally, as in the original study, only one school year and one age cohort of students were studied, making it potentially difficult to generalize the findings to a larger population.

Significance of the Study

The findings of this study add to the current body of knowledge that exists related to principal leadership and the possible influence it has on student achievement. Understanding gleaned from studies such as this helps connect what principals do to the student learning outcomes realized from those efforts.

Principals have their feet held to the fire in a climate of increased accountability through high-stakes testing. This was the first study of its kind with the middle school principal as its primary focus, illuminating possibilities for practitioners, district administration and even leadership preparation programs to use knowledge of principal CFS to improve placement of principals in appropriate settings and to help them learn the importance of understanding their own leadership style. It also reinforces the concept that while leadership does matter, a principal's individual leadership style matters more.

CHAPTER 2

REVIEW OF RELATED LITERATURE

America's public schools have passed through a remarkable transformation over the course of the country's history. The founding fathers held the belief that our country would survive only if its citizens were educated (Mondale and Patton, 2001). The advent of common schools provided the opportunity for youth to receive instruction that would enhance their ability to participate in the endeavors of a democratic society. The purposes of public schools have been a focus of heated debate ever since. The sources of debate have included: the role of religion in schools; individualism vs. community; education for all, including the poor, the culturally disadvantaged and those with special needs; international comparisons leading to global competition; and widening educational achievement gaps between white and minority students (Reese, 2005).

As schools evolved over the decades and into the twentieth century, the need for a smoother transition from elementary school to high school, as well as the need for better preparation for university studies, became increasingly evident. It began as an effort to create an institution built around the unique needs of adolescents, providing education geared toward the growth and development of students in this stage of development (George, Stevenson, Thomason, and Beane, 1992). Gradually, however, the junior high school became a hybrid institution resembling the high school more than anything else. The resulting configuration of middle level schools created tension among those practitioners dedicated to providing education for adolescents.

Creating Space in the Middle

To understand the tension related to middle level reform, it is important to understand where the movement began and review its progress. In 1892, Charles Eliot, president of Harvard University, was asked to spearhead a committee with the goal of investigating ways to improve and reduce elementary and secondary educational programs in an effort to address the average age of incoming freshman (Howard & Stoumbis, 1970). This committee, sponsored by the National Education Association (NEA), was called the *Committee of Ten on Secondary School Studies*. The committee's mandate was to review the curricular program of secondary schools. The result of the committee's culminating report became the framework for high school studies, which remained mostly intact through the 1970's (Sewall, 2001).

The report also recommended that secondary schooling begin two years earlier, moving from an 8-4 (eight years of elementary school followed by four years of high school) configuration to a 6-6 configuration. In 1913, the *Committee on Economy of Time in Education*, recommended for the first time a division of secondary education into junior and senior divisions. This led to many districts experimenting with 6-6 and 6-3-3 (six years of elementary school, 3 years of middle school, and 3 years of secondary school) configurations (Gruhn and Douglas, 1971).

Eventually, many of the recommendations of the Committee of Ten report concerning curriculum were deemed out-of-touch with the current needs of society. In 1918, twenty-five years after the report of the Committee of Ten, another significant report was issued. Commissioned by the NEA, it was called "The Cardinal Principles of

Education" and outlined seven curricular areas in which students' skills should be developed. This was the beginning of a shift from a predominance of the traditional subject areas to an array of offerings, providing a better opportunity for students to be trained in citizenship (Feldmann, 2005).

In its early years, the junior high school was defined by one of its founders, Thomas Briggs, who stated, "In its essence the junior high school is a device of democracy whereby nurture may cooperate with nature to secure the best results possible for each individual adolescent as well as for society at large" (Briggs, 1920). Total acceptance, however, was slow in coming. According to Alexander and McEwin (1989), only one out of every five high school graduates had gone through a 6-3-3 school organization in 1920 (most went through an 8-4 organization). However, by 1960, at the height of its popularity, the 6-3-3 organization was experienced by four out of five graduates.

In 1947, Gruhn and Douglass, discussing the major purposes of junior high schools, developed the criteria that most resembles the current middle school focus: integration, exploration, guidance, differentiation, socialization, and articulation. This presented the groundwork for subsequent development of middle level philosophy.

In the 1960's, viewed as a miniature high school model that strayed from the accepted functions of middle level education, dissatisfaction with the junior high model achieved its peak. Discussions of alternative models resulted in an effort to develop a new middle school plan. Alexander (1966) began efforts to clarify the goals and purposes of middle level schools. At the same time, the National Association of

Secondary School Principals (NASSP) was conducting its first study of junior high school leaders and programs. Over the next twenty years the middle level school became the focus of much attention.

Middle school proponents began focusing on the particular needs of early adolescents and the grade configurations and curriculum that would best fit those needs. The critical issues related to students between the ages of 10 and 15 became of paramount importance to those working to develop the model. In a presentation at the American Education Research Association (AERA) Conference in 1974, Alexander stated that while individual middle schools differed in specific goal statements, the generally accepted middle school goals were:

1. To provide a better program of schooling for children passing from childhood to adolescence than the usual program provided in other organizational arrangements
2. As a new organization, to facilitate the introduction and evaluation of innovative practices in the school system.
3. As a bridge between the elementary and high school, to facilitate continuous progress in education.

Alexander also observed that little research related to middle schools had been conducted by 1971, when only 12 dissertations and other research projects could be identified (Alexander, 1974). However, by 1974, that number had increased to 43 studies. Alexander, an advocate for middle school reform, proposed that grade configurations of 5-8 or grades 6-8 for middle school organization would provide a more productive scenario than the junior high school 7-9 configuration (Alexander, 1968).

Middle School Focus

Due to the increase in interest in middle schools and subsequent discussions and research, the National Middle School Association (NMSA) was founded in 1973. It remains the only national association dedicated exclusively to middle grades issues. In 1982, NMSA published *This We Believe*, a position paper published in order to clarify the "educational beliefs inherent in this emerging educational reform effort." The paper included ten essential elements of a true middle school based on the major physical, social, emotional, social-emotional, and intellectual characteristics of youth (Lounsbury, 1982). The vision of this position paper was clarified expanded in 1995 with the publication of *This We Believe: Developmentally Responsive Middle Level Schools.* According to this paper, NMSA (1995) believes that regardless of grade configuration the "nature of the program provided for young adolescents, wherever they are housed, is the crucial factor".

The basic principles put forth in this paper include the following two statements: "1) Developmentally responsive middle level schools are characterized by educators committed to young adolescents; a shared vision; high expectations for all; an adult advocate for every student; family and community partnerships; and, a positive school climate, and 2) Developmentally responsive middle level schools provide curriculum that is challenging, integrative, and exploratory; varied teaching and learning approaches; assessment and evaluation that promote learning; flexible organizational structures; programs and policies that foster health, wellness, and safety; and comprehensive guidance and support services" (NMSA, 1995).

Subsequent to *This We Believe* a number of significant reports and papers were published, highlighting the intense focus on middle level reform (See Table 1).

Year	Entity/Document	Significance
1984	State of Florida	Adopted statewide acceptance of middle school model and provided significant funding ($30 M annually)
1985	National Association of Secondary School Principals (NASSP)/ *An Agenda for Excellence at the Middle Level*	Mirrored many of the recommendations found in *This We Believe*
1987	California Department of Education/ *Caught in the Middle*,	Encouraged adoption of middle school model in state school districts
1988	Gordon Cawelti/Association for Supervision and Curriculum Development (ASCD)	Published a report entitled *Middle Schools a Better Match with Early Adolescent Needs*
1989	The Carnegie Foundation/*Turning Points: Preparing American Youth for the 21st Century*,	Promoted a design for middle level education
1995	NMSA/*This We Believe: Developmentally Responsive Middle Level Schools*,	Update of the previous position paper
2000	The Carnegie Foundation/*Turning Points 2000: Educating Adolescents in the 21st Century*	Published revision and update of *Turning Points*
2001	NMSA	Published *This We Believe and Now We Must Act*
2006	NASSP/*Breaking Ranks in the Middle: Strategies for Leading Middle Level Reform*,	Effort to connect recommendations made in *Breaking Ranks II* for high school leaders to the middle level

Table 1

The overarching theme of these reports is the importance of recognizing the unique nature and needs of the early adolescent learner. NMSA documents state the

following: “1) the personal growth of young people, ages 10-15, is profound; 2) the only other time in their lives that they may experience as much growth is from infancy to five years old; and 3) adolescent learners are conscious witnesses of their development” (NMSA, 1995). Crafting a program that addresses the unique needs of the young adolescent is hard enough, but doing it while promoting high expectations, academic challenge and rigor, societal significance, moral stewardship, and citizenship increases the level of difficulty. In addition, maintaining positive self-esteem, flexibility and personal value in the world at large for students amounts to a monumental task. This is, however, the goal of the ideal middle school and, subsequently, the responsibility of middle school leadership.

The daily task facing middle school principals is to lead the efforts of teachers and staff to provide an effective and appropriate educational program for young adolescents. This is why it is important to study the facets of leadership including leadership ability, style and personal beliefs about leadership, as well as the will and motivation to lead in this environment. Since consensus concerning the purpose and organization of middle schools was reached during the late-80s and early 90s, it is fair to ask why so few are doing it. Why are there continual calls for reform in middle level schools? Part of the answer lies in the approach of individual leaders and their ability to lead change in their schools.

Evolution of Research on Educational Leadership

A number of studies have been conducted that address elements of leadership and their possible impact on school effectiveness, leading to identification of attitudes and

behaviors exhibited by effective principals. These studies have resulted in labels such as collective, balanced, shared, transformational, and reflective leadership. Reviewing examples of this research sheds light on the nature of conclusions made about the effect of leadership on student achievement.

Early studies focused on individual traits and attributes of leaders, using, almost exclusively, survey instruments to ascertain behaviors that researchers felt influenced the effectiveness of leadership. These studies were limited in that they provided good information, but lacked applicability. They also focused on the antecedents of leader behavior, rather than on the outcomes of the behavior (Bridges, 1982). Very few discussed the relationship of leader behavior to student achievement.

Subsequent studies focused more on effectiveness of schools. While these studies began looking more at factors influencing student achievement, they failed to look at the effects of principals on school outcomes (Rowan, Dwyer, and Bossert, 1982). In recent years, a more energetic effort has been placed in tying principal leadership to student achievement.

Early Reviews of Research (1967-1980)

Reviewing research on principal leadership and student achievement is helpful in understanding the development and evolution of themes and methodologies related to principal effectiveness. Hallinger and Heck (1996) conducted a review of empirical research done from 1980 to 1995. They chose to begin in 1980 due to "landmark efforts that reviewed research up to this date" by Bridges (1982) and Bossert, Dwyer, Rowan, and Lee (1982).

In his review of research on the administrator from 1967-1980, Bridges (1982) used 322 research reports from Dissertation Abstracts and published journals to create a map highlighting the methodological and conceptual features of these studies to identify overemphasized approaches and major gaps in research on school administrators. Published in the same issue of Education Administration Quarterly (EAQ), was a review of related literature by Bossert, et al. (1982), regarding the instructional management role of principals. Bridges stated that only two reviews of research had been conducted during the previous two decades, one by Lipham (1964) and another by Erickson (1967). Referencing these reviews, along with the two others conducted in 1982, provides access to research on principal leadership and sheds light on the nature and focus of this research on school leadership through 1980.

Lipham's 1964 Review

Lipham's review was centered on themes that he felt recurred "with striking regularity" and included development and use of theory in administration, operation of the organization, organizational roles, personality variables, cultural and individual values, and leadership behavior. The emphasis of the reported studies highlighted the emerging work on the administrator as an integral part of organizational success.

At the time of his review, Lipham noted a large volume of research completed by Getzels (1958) on administration as a social process representing, in his opinion, the most useful theory of educational administration. Additional dimensions of this theory were added over subsequent years (Getzels and Thelen, 1960). Other studies included applying a general systems theory model to the field of education (Chin, 1961), including Griffiths

(1964) who utilized systems theory to investigate the influence of outside and inside sources on the ability of an organization to implement change.

Efforts to study organizational operations dealt mostly with concepts of power, status, knowledge, tradition, control, authority and influence, assessing the impact of these variables on administrator behavior (e.g. Thompson, 1961; Gross, 1962). Halpin and Croft (1963) devised, tested, and administered the Organizational Climate Description Questionnaire (OCDQ) in order to determine the personality, or organizational climate, of schools. Using a factor analysis, they identified six profiles of school organizational climates, organized on a continuum: open, autonomous, controlled, familiar, paternal, and closed. Other studies in this area included types of authority relations (Peabody, 1962) and effects of organizational structure on group effectiveness (Carzo, 1963).

The preponderance of studies dealt with organizational roles and fell into three categories: role expectation, role conflict, and role discrepancy. Lipham cited only prototypic samplings of role studies. These included studies that looked for administrator expectations from administrators themselves (Von Brock, 1962), boards of education (Finlay and Reeves, 1961), school business administrators (Wolfe, 1962), and undergraduate students majoring in education (Willower, 1962). Surveys were the main source of data for these studies and while most found the same types of role definitions, relative agreement on the importance of each role was lacking.

Studies of role conflict looked at the professional and public perceptions of the administrator's role and the actual behavior of the administrator during daily work

situations (Osibov, 1964 and Jerry, 1963). Role discrepancy studies measured the real and ideal expectations of administrators, while others by Moran (1962) and Lott (1963) found significant differences in these role expectations.

Personality studies assessed the relationship between personality and administrative behavior. One of the most comprehensive placed principals in a work simulation using data, which included measures of cognitive ability, knowledge, personality, interests, and values, and generated two factors that differentiated in their administrative performance (Hemphill, Griffiths, and Frederiksen, 1962). These factors were: 1) volume of work accomplished in a given time, and 2) emphasis placed either on preparing for future decisions or on immediately acting upon problems (Lipham, 1964). Other studies searched for ways to predict potential administrator performance (Bessent, 1961; St. Clair, 1962; and Moore, 1962), sought criteria for selecting future administrators (Erickson, 1963; Stewart, 1963), and looked at problem-solving behavior as a function of belief systems (Conway, 1963).

Lipham (1964) noted that the study of leadership behavior was a central focus in the research of educational administration. Previous investigations focused on conflict surrounding the leadership role, whereas, more recent studies looked for variables that correlated highly with, or added other dimensions to explain the nature of, leader behavior. He also noted that one main emphasis of research at the time was related to implementing change in organizations.

Erickson's 1967 Review

Three years after Lipham's report was published, Erickson wrote a chapter in the Review of Educational Research, a publication of the American Educational Research Association (AERA), the same organization that published Lipham's review. While Lipham reviewed a large number of research studies, mostly without mention of methodologies or analyses, Erickson was more selective. He addressed fewer studies, but reviewed them more deeply.

To Erickson, the bane of educational research was the abundant use of description questionnaires to study administrator behavior. Using Charters' (1964) work to support his thesis, Erickson noted the weakness in such instruments by noting the challenge of the construct validity of the Leadership Behavior Description Questionnaire (LBDQ), pioneered by Halpin (1959) and used in many studies. Charters replicated studies using this instrument, but was unable to draw the same conclusions as the original researchers. He argued that teacher perceptions did not echo the actual performance of administrators. According to Erickson, Charters made the following recommendation: "scholars who wish to assess the impact of the leader on the follower must probe the leader's behavior through variables methodologically independent of measures of follower reaction" (Erickson, 1965).

Morphet and Schutz (1966) studied multidimensional approaches to effectiveness criteria. More useful than simple statements of preference or perception, multidimensional criteria allowed for consideration of an administrator's effectiveness, including areas of strength and weakness in given settings and situations. However, the

influence of administrators on educational outputs, such as student achievement, was considered indirect because they considered it dependent on the efforts of many other people.

Brown (1967) went even further in stating that it was a "cognitive fallacy" to attempt to link administrator behavior to student achievement. He believed that the function of leadership was to "facilitate the process of the organization, not its product." Erickson, however, countered with the idea that "knowledge concerning the operation of educational enterprises will be seriously deficient until administrator behavior and pupil learning are empirically connected, research difficulties notwithstanding".

Erickson summarized his thoughts by stating "research on the school administrator represents an immature field, lacking well-established canons of inquiry of any notable rigor" (Erickson, 1967). Much of what was studied dealt with administrator behavioral attributes, based on the perceptions of other people.

Bridges' 1982 Review

The focus of Bridges' review deviates from those of Lipham and Erickson. He used the following questions to guide his efforts: 1) what types of school administrators do researchers study? 2) how are school administrators studied? 3) what is the focus of research on school administrators? and 4) how interrelated are the studies on school administrators? His methodology included reviewing 322 research reports, including 168 dissertation abstracts, noting that doctoral students conduct the majority of research in educational administration (Bridges, 1982).

Bridges concluded “the most frequent target of study is the senior high school principal, followed closely by the elementary school principal. The junior high school principal is studied much less often than are principals at the other two levels”. For those interested in middle level leadership, this is disturbing because it reflects the lack of attention to, and understanding of, middle level issues.

Regarding the modes of study utilized, Bridges noted that the survey research design was the predominant choice of researchers over case studies or experimental designs. Of the various data gathering techniques that could be used, nearly 80% of researchers used only the questionnaire. That number rose to nearly 90% when multiple methods studies were considered. Of particular concern was the perception that researchers were not concerned with the practical problems administrators faced, leading to the idea that research on school administrators had no theoretical or practical relevance (Erickson, 1982).

The focus of the research seemed to be on the attitudes of principals toward their work or different types of programs. Researchers were also interested in administrator traits including personality, demographics, and experience. Uni-dimensional behavioral studies were also prevalent, isolating a single dimension of administrative behavior for study such as mobility, risk taking, supportiveness, management of disruption, communication, and evaluation. These studies appear to be based on the particular interests of the researcher.

Studies related to educational outcomes either reported desirable or undesirable consequences attributed to administrator behavior, or sought to determine the impact of

administrators on those outcomes. In other words, they sought to determine if administrators made a difference and, if so, the nature of that difference.

In summary, Bridges noted disconnectedness among research studies on school administration. His review indicates that there had been no major theoretical or practical issue resolved in the intervening years.

Bossert, Dwyer, Rowan and Lee's 1982 Review

While this review appeared in the same issue of Education Administration Quarterly as the previous review, the conclusions drawn were quite different. Where Bridges found that educational research related to school administrators had made little significant headway, Bossert and his colleagues suggested that studies indicated that administrators could have an impact on the school and, at least indirectly, influence student achievement.

Some similarities in the Bossert, et al. and Bridges reviews maintain that up to that point, little was known concerning causal relationships between principal behavior and student achievement. However, two studies, one by Hemphill, Griffiths, and Frederikson (1962) and another by Gross and Herriott (1965), did relate administrator behaviors to effective schools. The former study isolated four factors that improved performance rating: exchanging information, maintaining relationships, preparing for discussion, and amount of work. The latter study found that administrators who displayed a high concern for instruction, supported staff development, and discussed work with teachers, not only increased teacher morale and performance, but student achievement as well. It was also found that principals must develop their own style and structure within

their current situation, since no one style fits all schools (Averich, 1972) and that certain principal behaviors have different effects in different settings (Brookover, et al., 1973). In summary, though, they concluded, "a principal's management behavior has both direct and indirect effects on student learning but, unfortunately, current research and practice have not identified clear relationships between what a principal does and the concrete learning experiences children have in school" (Bossert, et al., 1982).

One area of study not included in Bridges' review was the early effective schools research (Frederiksen, 1975; Edmonds, 1979; Cohen, 1980; Squires, 1980). While mentioned in Bossert's review, only characteristics found in successful schools were mentioned, including: a school climate conducive to learning; a school-wide emphasis on basic skills instruction; the expectation among teachers that all students can achieve; and a system of clear instructional objectives for monitoring and assessing students' performance. The principal of such a school provides the support for these conditions through awareness of specific school issues and resource allocation. This research laid "the groundwork for more systematic empirical investigation" (Hallinger and Heck, 1996) of a reconceptualization of the principal's leadership role.

Over the course of two decades, from 1960 to 1980 many things happened to influence the leadership of schools. Social protests and reform in the 1960's and 1970's, declining enrollment after a post-World War II baby boom, development of larger, more complex school staffs, and increased governmental intervention through regulations, laws, and mandates have combined to complicate the landscape for school leaders (Hess, 1983). All of these conditions, along with a desire to more fully understand the role of the

principal in school effectiveness, created a climate conducive to more rigorous study of school leadership in the 1980's and 1990's.

Hallinger and Heck's 1996 Review

Prior to Hallinger and Heck's review, several researchers undertook an effort to study change and change implementation, including Berman and McLaughlin (1978), Fullan (1982), and Hall, Rutherford, and Griffin (1982). These and other studies on school effectiveness (Brookover and Lezotte, 1979; Edmonds, 1979; Rutter, Maugham, Mortimer, Ouston, and Smith, 1979) highlighted the importance of principal leadership and its impact on schools.

Reports, such as *A Nation at Risk*, which trumpeted the failure of public schools, increased the clamor for better efforts to improve student achievement. With this emphasis came closer scrutiny of the principal's role in this endeavor and research began to look more closely at measures of student achievement.

Principal Impact: Direct or Indirect?

While the collective research indicates a belief that principals impact the entire school context for teachers and students, there seems to be great debate over if and how they directly impact student achievement. From Hallinger and Heck's perspective, "the principal's role is best conceived as part of a web of environmental, personal, and in-school relationships that combine to influence organizational outcomes". Research reviewed during the two decades indicated a stronger effort to understand the possibilities. In establishing the perspective for their review, Hallinger and Heck (1996) started with a "cautious eye" toward claims that there existed a direct impact.

Through criteria that included studies that focused on the effects of principal's leadership beliefs and behaviors with principal leadership as one of the independent variables, and an explicit measure of school performance as a dependent variable, 40 studies were identified for review. They noted an improvement over the prior generation of studies, noting particular progress in the theoretical domain. This improvement was generally attributed to better and more sophisticated approaches to research, including more robust methods of data analysis.

Hallinger and Heck (1996) concluded that studies indicate that principal leadership influences student learning. However, they also stated that this influence is indirect and comes through interactions with internal school processes that are directly linked to student learning such as academic expectations, school mission, student opportunity to learn, instructional organization, academic learning time, and teacher practices. They noted that this is not a reason for concern due to the fact that achieving results through others is the essence of leadership.

Research on Principal Leadership

The progress attained over the past three decades in relating principal leadership and school effectiveness has helped focus attention on the critical role of the principal in influencing student achievement and other educational outcomes. Two particular sets of research are of particular interest. One is contingency theory and the other is change facilitator style.

Contingency Theory

Contingency theory, also known as situational theory, is founded in the idea that the situation is "the prime catalyst in leadership" (Bolman and Deal, 2008). Situational theories have been offered by several writers (Fiedler, 1967; Fiedler and Chemers, 1974; Hersey and Blanchard, 1988), but Hersey and Blanchard's model is most often cited as a conceptual framework. Their model is subsequent to Blake and Mouton's (1969) "managerial grid" that postulated two dimensions of leader effectiveness: concern for task and concern for people (Bolman and Deal, 2008). On a nine-by-nine grid, they defined various combinations of the dimensions, identifying a 9,9 style of leadership as a style for all occasions (Blake and Mouton, 1985). Hersey and Blanchard's model showed four possible "leadership styles" based on these same dimensions, but defined them in a two-by-two grid illustrating the combinations of low and high relationship (concern for people) to low and high task concerns. The appropriate leadership style was contingent on the "maturity" or "readiness level" (Hersey and Blanchard, 1977) of the subordinate.

Reviewing the subject studies of Waters', et al. (2003) meta-analysis revealed that most of the studies indicating "leadership style" in the title used Hersey and Blanchard's model as a conceptual framework (Lewis, 1983; Standley, 1985; Soltis, 1987; Finklea, 1997; Ewing, 2001), indicating the extent to which this model has permeated educational contexts, as well as management development programs. The weakness of this model is the emphasis of the relationship between leaders and subordinates while minimizing other influences such as structure, politics, and symbols (Bolman and Deal, 2003).

Change Facilitator Style

In contrast to studies where leadership behaviors were analyzed in order to isolate specific behaviors that led to better schools, another set of studies developed ways to better understand the change process itself as well as a leaders' role in promoting successful implementation of innovations in schools (Hall, Wallace, and Dossett, 1973; Hall, Hord, and Griffin, 1980; Hall, Rutherford, and Griffin, 1982; Hall, Rutherford, Hord, and Huling, 1984; Hall and George, 1988, 1997, 1999; and Vandenburghe, 1988). While studying teachers' reactions when implementing a science innovation, the researchers discovered that while each teacher received the same materials and professional development, the results were consistent only on a school-to-school basis. With the same implementation deadlines and similar school demographics, they expected similar results across the board. The explanation seemed to be in the individual approaches of the principals. This lead to further studies of the way individual principals influenced change movements in their schools.

Out of these studies came the concept of Change Facilitator Style (CFS) (Hall and Hord, 2011). Studies of CFS revealed three distinct styles: Initiator, Manager, and Responder. (SeeAppendix H) The first study on Change Facilitator Style was the Principal/Teacher Interaction (PTI) Study (Hall, et al., 1980; Hall, et al., 1984; and, Hord and Huling-Austin, 1986). It confirmed the existence of these three distinct leadership styles for change implementation. The researchers also found that teacher success in change implementation was directly correlated to their principal's CFS (Hall and George, 1999).

Over the course of several years, the Change Facilitator Style Questionnaire (CFSQ) (See Appendix E) was created. Through the development and use of this survey

instrument, other independent studies subsequently confirmed the clustering of principal style into three CFS categories (Trohoski, 1984; Entrekin, 1991; Vandenberghe, 1988; Schiller, 1991). Further study led to Hall and Vandenberghe hypothesizing six CFS dimensions. The resultant CFS model consists of six independent dimensions paired in three clusters (See Appendix F)

Operationally defining style is significant here since the researchers noted the difference between style and behavior. Hall and Hord (2011) define style as "the overall tone and pattern of a leader's approach" whereas behavior is defined as "a leader's individual, moment-to-moment actions, such as talking to a teacher, chairing a staff meeting, writing a memo, and talking on the telephone". They explained that "the overall pattern and tone of these behaviors form a person's style".

Leadership and Landmines

There was a time when maintaining order through discipline, balancing the books, providing adequate teacher supplies, monitoring personal issues of teachers and students, satisfying district office mandates, and making sure the overall atmosphere was maintained was enough to secure a relatively peaceful existence for a principal. Those days are gone. In their place are expectations to satisfy voracious appetites of legislatures for accountability, such as increasing the focus on test scores; managing complex issues related to poverty, high-risk behaviors, and public expectation; overcoming seemingly insurmountable odds to bring about change in a cumbersome system; increasing teacher skill and student performance while still maintaining the physical plant; and rallying support from communities, businesses, and other public groups to support the school.

In light of the pressures exerted on principals to accomplish an enormous task, leadership becomes critical in an environment of change. As schools and districts identify ways to improve student learning, the principal becomes the chief agent responsible for leading the change effort. This responsibility plays out in leadership roles in other contexts.

Leadership Example: Clifton Wharton

It can be surmised that leadership matters. Lessons learned in areas outside of education can be applied to the work of the principal. One such example comes from the restructuring of the biggest pension fund at the time (1986), Teachers Insurance and Annuities Association-College Retirement Equities Fund (TIAA-CREF). Peter Drucker (1976) called it the "unseen revolution" as pension funds moved from the background to the forefront of powerful economic influence. Clifton Wharton was named to the top post of TIAA-CREF, a company so entrenched, lacking in vision, and inflexible, it was in danger of losing everything.

Taking on the Monster

Wharton, trained as a development economist, who had already worked for the private, non-profit Agricultural Development Council, for Michigan State University as president, and for the State University of New York (SUNY) as chancellor, had no experience running a financial services company or an insurance firm, but "he knew how to make a large enterprise work" (Useem, 1998). Faced with the task of completely transforming an institution he himself called an "antediluvian, ancient, inflexible monster", he charted a course that would either make or break the company.

Wharton's task included working on the outside to sell his vision to those whom the company served (i.e. colleges and universities and their workers) as well as on the inside to those who were established in the way things should be run. Established in 1918 by the Carnegie Foundation, TIAA (CREF was added in 1952) had changed little in the nearly 70 years of its existence. Understanding the seriousness of dealing with billions of dollars of people's retirement funds, Wharton waded in.

The main problem, Wharton found, was the inflexibility regarding movement of funds between annuities and stocks and choice of investment options for clients. Workers in the company worked in dingy offices with very little latitude for upward mobility. As he met with various stakeholders, critics included, he listened to what they had to say. He established task forces and committees to collect relevant information in order to understand better the vastness of the task. He also collaborated with university administrators, business school professors, executives from businesses and money management firms, and banks to gain important insights.

Wharton opened lines of communications between the company and the people it served asking for their input regarding a strategic plan. This caused concern among board members who felt publishing strategic plans would alert competitors to the intentions of the company. Wharton prevailed and, for the first time, customers had a say in how the company could serve them better.

Ultimately, Wharton was able to reorganize the company, creating a customer service focus and providing customers with choice and flexibility. The company was positioned to remain a viable force in the pension community. He did this by

communicating with all stakeholders, celebrating fast action and incremental successes, collaborating with a variety of stakeholders and outside entities, providing a clear sense of vision, and leading from the front. He created buy-in by articulating very clearly the direction the company needed to go in order to sustain itself. He also understood that "his employees were the ones who would have to carry the change" (Useem, 1998). He looked for the positive in all things and enjoyed the journey. He had remarkable success in his six years as chairman, but more remarkable is that in the four years that followed his departure, the company increased its participant base by 33% and it's asset base by nearly double, illustrating the sustainability of his efforts.

The ability of Clifton Wharton to transform a large, inflexible organization into a flexible, client-friendly one deserves consideration. The fact that he had no prior experience in the area of financial services indicates that regardless of expertise, certain innate leadership capabilities can be utilized for maximum effectiveness. The collection of experiences, knowledge, beliefs and personal expectations he accrued throughout his life, improved his ability to lead in a time of drastic change.

Enter Accountability: Stage Left

The parallels of this example to educational reform are anything but subtle. The institution of education has been considered a dinosaur; large and mindless, inflexible and lacking in real choice, and accountable to few, which led to shouts for more transparency and accountability. Although concern for the performance of public education has been voiced in generations past, the publication of *A Nation at Risk* in 1983 permanently placed our nation in crisis mode and began the recent trend toward

accountability of schools for student achievement. What should have been an overall wake-up call to society at large to give attention to the needs of schools became, instead, a catalyst for blaming schools for failing the children and youth of our nation and asserting the need for drastic change.

Published in a Cold War climate of tough rhetoric, *A Nation at Risk* contained such phrases as "educational foundations are being eroded", "rising tide of mediocrity that threatens our very future", "an act of war", and "committing an act of unthinking, unilateral educational disarmament". These inflammatory statements created an outcry for school reform that has continued to this day. While claiming that evidence exists to prove the claims of the report, no references or substantiation of this evidence were provided. Some critics have called the subsequent crisis arising from publication of this report a "manufactured crisis" (Berliner and Biddle, 1995).

It is in this climate that present-day school leaders find themselves as they take on the overwhelming task of reforming a system so entrenched in our society as to be considered next to impossible to reform. To reform the entire educational system in a top-down effort from the national level is a rough road full of landmines. Calls for national standards and increased governmental intervention in schools are on the rise. The responsibility is given to principals to produce results. Accountability for student achievement looms large with the threat of repercussions if satisfactory levels of achievement are not met.

The pressure placed on principals is compounded by other external factors including competition for public education (vouchers), shifting racial and ethnic

populations, alternative schooling options such as charter schools, homeschooling, and virtual schooling, open enrollment, and bilingual education, as well as the societal issues of an aging and indebted population (Glass, 2008). It is difficult to ignore these ever-present influences. However, if principals are to be agents of change in their schools, they must focus on that over which they have some control: themselves. If school leaders are to bring about effective, meaningful change they must bring their own attitudes, motivations, behaviors, and knowledge to bear. Their effectiveness will be determined by their leadership style.

Conclusion

Literature reveals that middle school students have unique needs during these important years of life. The critical juncture between childhood and adulthood should be of particular concern for educators and policy makers. It forms a crucible for principals who hold accountability for the achievement of their students. Research shows that principals make a difference in the outcomes of their schools and certain behaviors have been identified which improve conditions in schools, enhancing the opportunity for student success.

Contingency theories provide a framework for leadership that stipulates different styles or forms of leadership for different situations. The emphasis of such studies is the need for leaders to change their approach to each situation based on the perceived need of constituents. While this is an area in need of further research, evidence for such claims is still sparse (Bolman and Deal, 2008). Research on change facilitator style provides an alternative view of leadership, providing a way of looking at accumulated experiences,

attitudes, and knowledge as a way to determine the prevailing style of leadership a principal possesses and how that style influences student achievement.

The complexity of leadership, including how to move through change processes in order to achieve long and short-range goals, is difficult at best. Combining this with the pressures placed on schools to improve student achievement, only adds to the burden carried by school leaders. This is particularly true at the middle level, where the peculiar needs of young adolescents are factors requiring special consideration. So, while research at all levels of education is important, a focus on schools in the middle is overdue.

CHAPTER 3

RESEARCH METHODOLOGY

As mentioned in the opening chapter of this work, leadership makes a difference in the outcome of any endeavor, whether that leadership is good or bad. This fact becomes extremely evident when analyzed in extreme cases such as the leadership exhibited following the devastation of Hurricane Katrina in 2005, or following the epic tragedy of September 11, 2001. The former was cast as a leadership debacle while the latter was seen as an event that featured heroic leadership. It was failed leadership that caused the downfall of Enron at the end of 2001 and the collapse of many financial institutions that followed. Similarly, it was presence of effective leadership that saved every crewman aboard the *Endurance* in 1915. Leadership permeates all facets of our existence. We lead or we follow. Either way leadership influences us.

While not on the same scale as national governments, large corporations, and epic tragedies, leading a school is fraught with its own kind of peril. As leaders in an institution established to produce an educated populace able to participate in the responsibilities and duties of a free citizenry, principals are under tremendous scrutiny regarding the results of their efforts.

There is a great deal of writing and talk about the importance of principal leadership. Much of it focuses on how principal leadership affects school improvement efforts as well as how principal leadership impacts the work of teachers. Of particular concern is how to develop further understanding of the relationship between principal leadership and student achievement. Principals do not have consistent, direct contact with

students in the classroom, which makes determining how principal leadership impacts student learning problematic.

Researchers are hesitant to attribute improved student outcomes directly to the influence of principal style and behavior. While some research exists connecting principal leadership with student achievement, more is needed to clarify the particular leader behaviors and styles that lead to improved student learning. The Change Facilitator Style (CFS) model using the Change Facilitator Style Questionnaire (CFSQ) is a viable means of investigating this important relationship.

The purpose of this study was to explore relationships between principal leadership and student achievement by replicating a study conducted at the elementary school level in an urban city in the northeast by Hall, Negroni, and George (2006) using Change Facilitator Style (CFS) (Hall and George, 1999) as the theoretical framework. In the original study researchers found a statistically significant relationship between principals' CFS and student achievement. This study centered on the leadership of principals in middle level schools, providing a contrast to the original study, which focused on elementary school leadership.

Research Questions

The following questions guided this study:

1. How do middle school principals vary in CFS?
2. What is the extent of agreement between teacher ratings of the principal's CFS and the principal's self-rating of CFS?

3. What is the relationship between middle school principal's CFS and student achievement?

Context of the Study

The study took place in a mid-size suburban school district in the intermountain west. While not identified as at-risk, as was the district in the original study, this district is one of the lowest in per-pupil expenditure in a state that ranks near the bottom of the list nationally. Doing more with less is the unwritten expectation of the administration and faculties of the schools. The district has faced a great deal of growth over the last 10 years, from 47,096 students in 2000 to 65,735 students in 2010, representing an increase of nearly 40%. In addition to this growth, the district has experienced a 68% increase in ethnic minorities and those living in poverty since 2004, placing a greater responsibility to help sub-groups that cause some schools to fail to make Adequate Yearly Progress (AYP). Special Education numbers, however, have remained steady at 10%.

Participant and Site Selection

The participants in the study were ten of the eleven middle school principals in the designated district. The researcher is a middle school principal in the district and was excluded to avoid bias. Participants were aware of the study and as colleagues of the researcher were agreeable regarding their participation. Each signed an informed consent form agreeing to his involvement in the study.

Permission to conduct the study was obtained from the Director of Research and Development of the selected district (See Appendix B). The researcher was given access to student achievement data as well as permission to conduct the study. Letters of authorization to conduct research were also signed by the principal at each school designating each principal's acceptance of the research protocol, including the survey of teachers and principals regarding CFS of principals. Generic copies of the letters can be seen in Appendices C and D. Original signed copies are kept in the researchers file to maintain anonymity and confidentiality. Finally, before any data collection was conducted, approval to conduct the study was requested and granted by the University of Nevada, Las Vegas (UNLV), Institutional Review Board (IRB) (See Appendix A)

Research Design

This was a correlational research study, which is used to "explain the relationship among variables" (Creswell, 2008). Using this method, associations between variables of Change Facilitator Style and student achievement data were considered.

In an explanatory research study, two variables are required: a dependent variable and an independent variable. In this study, the dependent variable was the student score on the state's 2011 end-of-year Criterion Referenced Tests (CRT). The independent variables were the principals' Change Facilitator Styles (CFS).

The CFSQ Instrument

Hall, George, and Vandenberghe (1996) developed the Change Facilitator Style Questionnaire (CFSQ) over several years from the late 1980's into the early 1990's to determine a school leader's Change Facilitator Style. They developed 77 statements in

both Dutch and English relating to the intervention behaviors principals exhibit when implementing change innovations. After items were re-worded, or rejected based on differing translation connotations and/or cultural views, the survey was given to 657 teachers in the U.S. and 900 teachers in Belgium and The Netherlands. Through data analyses, including Alpha factor analysis, with and without orthogonal rotation, item-scale correlations, and scale inter-correlations, a common set of five items per scale were chosen for the final iteration of the CFSQ (Hall and George, 1999).

The CFSQ contains 30 Likert-type questions relating to six dimension (Social/Informal, Formal/Meaningful, Trust in Others, Administrative Efficiency, Day-to-Day, Vision and Planning) within three clusters (Concern for People, Organizational Efficiency, and Strategic Planning), which, in aggregate, form three possible CFS (Initiator, Manager, and Responder). (See Appendix H) The five questions related to each scale have a "common thread of meaning" (Hall and George, 1999) and are marked with a numerical value (from 1-Never or Not True to 6-Always or Very True) based on the perception of each respondent of the principal's behavior related to each statement in the questionnaire.

The values of the responses related to each scale are added together and a raw score is determined. This sum of responses is not as meaningful as the comparison of these responses to those of other respondents. For this reason, each raw score is converted to a percentile score based on the established norm group. The percentile scores are displayed in a bar graph, which illustrates the CFSQ profile of the principal.

When data analyses were applied to the original CFSQ data, the Alpha coefficients ($\propto$) for the six scales were all very high, ranging from .76 to .88, representing strong internal reliability (Hall and George, 1999). In the earlier first study of the relationship between CFS style of the principal and teacher implementation success, a correlation of r=.74 was found (Hall and George, 1999).

Data Collection

In order to accomplish the purpose of this study, the CFSQ was used to determine the particular style of each subject principal. A survey was given to each principal to determine a self-rating of his style. Each was asked to identify a particular program or innovation in which he is currently leading his faculty and to answer the survey questions with this program or innovation in mind. Subsequently, all faculty members at each school were asked to fill out a CFSQ regarding the leadership facilitating behaviors of their principal related to the same program or innovation. These surveys were collected and processed in order to determine the CF Style of each principal in the study.

Data Analysis

Student achievement data (end of level tests in Math and Language Arts) for 8th grade students who attend each school during both the 2009-2010 and 2010-2011 school years were analyzed and reviewed using an analysis of variance (ANOVA) to identify relationships between CFS and student achievement.

When considering the impact of an independent variable with two or more levels, in this case principals identified as one of three CFS styles, on a dependent variable (student achievement), Analysis of Variance (ANOVA) is an appropriate statistical procedure. In ANOVA, hypotheses are formulated about the means of the groups on the dependent variable. Changes in the dependent variable are presumed to be the results of changes in the independent variable (Hinkle, Wiersma, and Jurs, 2003).

Using ANOVA allows for a comparison of mean variations related to two groups: the subjects within a group (school) receiving the same treatment (principal possessing a designated style); and, all subjects who are randomly assigned to groups and who receive treatments. These components of comparison, known as *with-in groups* variation and *between groups* variation, respectively, are used to test the null hypothesis.

Underlying assumptions relevant to ANOVA include, 1) the observations are random and independent samples from the population; 2) the distributions of the populations from which the samples are selected are normal; and 3) the variances of the distributions in the populations are equal (Hinkle, Wiersma, and Jurs, 2003), as are the assumptions in this study. The null hypothesis for this study was the mean performance across the ten middle schools in the target district is the same regardless of the CFS of the principal.

The dependent variable for this study was the results of the 8th grade end-of-level tests administered by the state. The total scores, as well as sub-test scores, for science, language arts, and mathematics were analyzed. Through analysis of the data,

relationships between principal CFS and student achievement were considered and findings reported.

Limitations of the Study

In order to replicate the original study, the researcher chose to identify a single district and its principals at the middle school level for participation. When the participants for the study were selected, the researcher, who was an active practitioner in the selected district, chose to use a convenience sample due to the fact that his sponsoring university was in another state and access to a sample was best achieved by working within his own geographical area.

Selecting all principals in a single district may not necessarily provide a representative sample of middle school principals in general. In this case, all of the principals in this district are male. As one of the middle school principals in the selected district, the researcher is a colleague of the participant principals, which may produce bias based on the familiarity of the researcher with each of the other principals. However, the knowledge and understanding of the principals and their work provides the researcher with an ability to comment from an insider's perspective.

The researcher was aware of the dilemma that familiarity could create related to ethics and confidentiality. Great caution was exhibited to protect the identity of each principal and to act ethically when commenting on principal behaviors and attitudes, limiting comments to observable behaviors while avoiding judgment.

Three of the schools surveyed had lower than expected survey response rates of 37%, 42%, and 44%. Since the response rate for each of the other schools was 59% or

better, the principals at the three schools in question may not be as accurately portrayed as principals at the other seven schools. The researcher chose to move forward rather than undertake the arduous task of locating teachers who had begun their summer break.

The original study used a 3-member panel of individuals who had worked in the district's central office for several years and had a working knowledge of the leadership approach of each principal. Using their knowledge of day-to-day behaviors of each principal and comparing that knowledge to the formal paragraph definitions of the three CF Styles, the panel came to a consensus of each principal's rating. For the current study, the CFSQ was used exclusively to determine the CF Style of each principal. This may result in less reliability and objectivity since the ratings of a large number of individual teachers were averaged together to determine CF Styles of principals.

Finally, as was the case in the original study, only one school year and one age cohort of students were studied, making it potentially difficult to generalize the findings to a larger population.

CHAPTER 4

RESULTS

Researchers, through evaluation of teachers' reactions when implementing a science innovation, developed the framework for principal leadership style (CFS) used in this study. They discovered that while each teacher received the same materials and professional development, the results were consistent only on a school-to-school basis. With the same implementation deadlines and similar school demographics, they expected similar results across the board. The explanation seemed to be in the individual approaches of the principals. This led to further studies of the way individual principals influenced change movements in their schools. The first study on Change Facilitator Style was the Principal/Teacher Interaction (PTI) Study (Hall, et al., 1980; Hall, et al., 1984; Hord and Huling-Austin, 1986; and Hall, 1988).

Out of these studies came the concept of Change Facilitator Style (CFS) (Hall and Hord, 2011). Studies of CFS revealed three distinct styles: Initiator, Manager, and Responder. (See Appendix H) It confirmed the existence of these three distinct leadership styles for change implementation. The researchers also found that teacher success in change implementation was directly correlated to their principal's CFS (Hall and George, 1999).

The simplest way to describe the approach of each CF Style is to use a metaphor of games (Hall and Hord, 2011). The Initiator is a chess player using a variety of strategies and calculated moves; anticipating future moves and using many pieces that each have their own set of rules. The Manager is a checkers player, with a less

complicated view of the organization. Tactics, rather than strategies, are used to execute moves. Finally, the Responder flips coins with each flip determining the next move. Each event is independent of prior, or future, events.

The purpose of this study was to explore relationships between principal leadership and student achievement by replicating a study conducted at the elementary school level in an urban city in the northeast by Hall, Negroni, and George (2006) using Change Facilitator Style (CFS) (Hall and George, 1999; Hall and Hord, 2011) as the theoretical framework. In the original study, statistically significant relationships were found between principal's CFS and student achievement. While elementary school leadership was the focus of the original study, this study centered on the leadership of middle school principals. The following questions guided the research:

1. How do middle school principals vary in CFS?
2. What is the extent of agreement between teacher ratings of the principal's CFS and the principal's self-rating of CFS?
3. What is the relationship between middle school principal's CFS and student achievement?

This chapter contains a description of the results of this study. The results described include: the process for delivering the surveys and corresponding response rates; a discussion of the results of the surveys; the findings for the research questions that guided this study; and, a summary of the findings.

Delivery Procedures and Response Rates

Prior to delivering copies of the CFSQ to each school, the researcher discussed the dissemination and collection of the surveys with each principal, each of whom was also asked to identify an innovation or major project that was new to their school during the past two years. A separate contact person was designated to oversee the distribution and collection process, eliminating the principal from the loop of contact. This was done to negate any influence the principal might have on teachers as they completed the surveys. The only communication from the principal to his teachers was regarding his support of the study and his consent to be rated by his teachers. Copies of the CFSQ were placed in individual envelopes, along with an Informed Consent form, and the appropriate number for each school was delivered to the designated contact person.

The Informed Consent form included the purpose and scope of the study and provided key information related to teacher participation. After completing the CFSQ, teachers returned the survey, along with a signed copy of the consent form, in a sealed envelope. In order to conduct a self-rating, principals were also provided with a copy of the CFSQ and were asked to sign an Informed Consent form as well. The forms from individual schools were marked with an alphabetical designation (A-J) to ensure teacher responses were applied to the correct principal. All parties were informed that they could cancel their participation at any time.

Anonymity was ensured by the research design, so neither the researcher nor the principal at each school knew which teachers completed surveys. A total of 493 surveys were delivered to 10 schools. The number of questionnaires ranged from the smallest

school with 39 teachers to the largest school with 55 teachers. Of 493 surveys delivered, 329 surveys (66.73%) were returned. One survey was excluded due to lack of completion. Seven others were not processed due to lack of Informed Consent signatures. This made for an adjusted return rate of 65.11% (See Table 2).

School	Number of Teachers	Number of Surveys Returned	Percent Returned	Innovation
A	55	23	41.82%	Flexible Schedule for Remediation
B	47	38	80.85%	Preparing 9th Graders for High School
C	39	37	94.87%	Improving Student Proficiency
D	63	45	71.43%	Learning Outcomes and Common Assessments
E	46	17	36.96	Professional Learning Community/Collaboration
F	48	29	60.42	Remediation of Struggling Students
G	46	39	84.78	Decreasing Failure Rates
H	55	24	43.64	Professional Learning Community/Collaboration
I	50	43	86.00	School-Wide Learning Outcomes
J	44	26	59.09	Development of a 5-Year School Plan
Total	493	321	65.11	

Table 2. Summary of Surveys Returned

The timing of the survey was unfortunate. Final approval of the research protocol was received just prior to the end of the school year, a difficult time to ask teachers to fill out a survey. Initial contact with each school occurred one week before teachers left for summer break. Reminders were difficult to plan and were, therefore, left up to the school contact person to decide based on their working knowledge of the nature and mood of

each staff. In spite of this situation, seven of the schools produced response rates higher than 59%. Five of the return rates exceeded 70%. The other three schools produced return rates from 37% to 44%.

Regarding the data received, the individual who processed the CFSQs, noted:

"A total of 322 questionnaires were received for processing representing 10 junior high schools or middle schools. The greatest number of questionnaires received from one school was 45, the least was 17. One questionnaire was eliminated because only one answer was marked. All other questionnaires were processed.

"The questionnaires were extremely clean and legible. None appeared to be completed in haste. A few respondents changed their minds about a response and these were clearly and unambiguously indicated. Many questionnaires had legibly written comments, indicating that respondents put time into completing the questionnaires. All in all, the questionnaires were filled in completely and legibly.

"Once entered into the computer, checks revealed no repetitious answers on any questionnaires (as when a respondent decides to mark the same answer for all items without reading the questions) nor were any duplicate questionnaires found (as when a respondent copies the responses of someone else)."

Description of the Participants

As a group, the principals of this district have worked in the field of education from 12 to 31 years, an average of 17.1 years. They have worked as school administrators from 6 to 23 years, an average of 11.5 years per principal, leaving an average of 5.6 years per principal for pre-administration service. This is a relatively short period of time to be involved in teaching and other activities prior to acquiring administrative positions. If administration were defined as all supervisory activities beyond the classroom, these principals, as a whole, would be considered career administrators, based on a 30-year career, the number of years required for full retirement (See Table 3).

Principal of School:	Years in Education	Years in Administration	Years in Current Assignment
A	25	16	9
B	12	9	6
C	16	10	2
D	12	8	3
E	13	7	3
F	13	9	1
G	19	13	4
H	13	6	1
I	31	23	8
J	17	14	3
RANGE	12-31	6-23	1-9
AVERAGE	17.1	11.5	4.0

Table 3 Principal's Years of Experience

Using the procedures outlined by Hall and George (1999), each principal was identified as an Initiator, Manager, or Responder based on the ratings of the majority of teachers in each school. For example, if more than 50% of teachers rate a principal as a Manager, then that is the designated style for that principal. If there is no clear majority, then the style is designated to be the lower of the two styles. In other words, if 40% of teachers rate a principal as a Manager and 40% rate him as a Responder, the style designation is Responder.

Research Question 1

1. How do middle school principals vary in CFS?

The principal data were organized according to principal style, listing in order, from highest to lowest, Initiators, Managers, and Responders for ease of analysis and to allow the reader a more user-friendly way of seeing the survey data (See Exhibit A). Once CF Style was determined principals identified within each style were ordered first to last based on the percentage of teachers rating them as that given style. These data were then reviewed to determine the profile of each principal. The following sections are descriptions of each principal's CFS profile.

Introducing the Initiators

Four of the ten principals rated by their teachers for this study were identified as Initiators. The profiles of each of these principals are presented in the sections that follow.

Profile of Principal A

Principal A was rated by 65% of his faculty as an Initiator while the remaining 35% rated him as a Manager. Based on the accepted parameters, Principal A was classified overall as an Initiator (See Figure 1).

The ratings in the dimensions of Social/Informal, Formal/Meaningful, Administrative Efficiency, and Vision and Planning were at or near the top in relation to the scores of the other principals. His ratings in the dimensions of Trust in Others and Day-to-Day were the lowest of any of the participant principals. Comparison of this principal's ratings to those of a stereotypical Initiator as illustrated by Hall and Hord

(2011), reveals a near match, with the only significant difference being the higher rating for Principal A in the Social/Informal dimension.

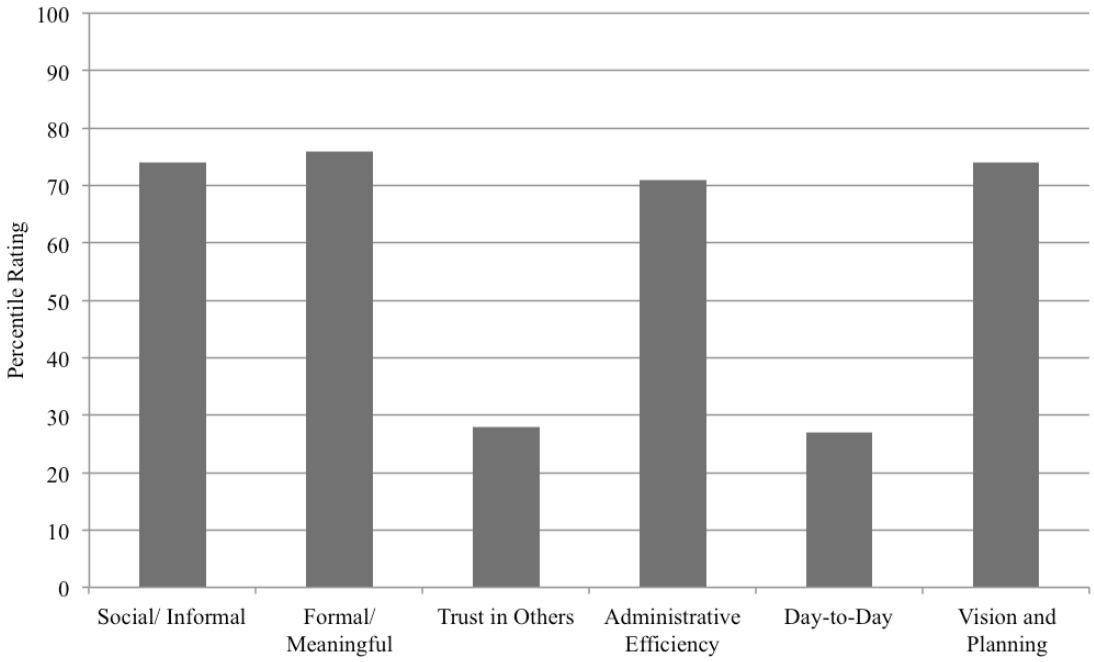

Figure 1. Principal CFS Profile Based on Teacher Ratings: Principal A

Cluster 1: Concern for People

Principal A's percentile rating in the Concern for People Cluster, which includes the dimensions of Social/Informal and Formal/Meaningful, was 74 and 76, respectively (See Figure 1). These numbers are high on the scale suggesting that teachers feel he not only engages in communication related to school tasks, priorities, and other substantive issues, but he also engages in personal, friendly conversations that focus on the feelings and perceptions of his teachers as they implement innovations.

The combination of high Social/Informal and high Formal/Meaningful ratings suggests that Principal A may conduct highly effective conversations that address the concerns and feelings of teachers in a way that is personal and meaningful. The ratings

indicate a unique balance of concern for teachers as they progress through the innovation implementation. In this case, School A was implementing a remediation program for struggling students, resulting in less teacher face-to-face time in front of full classrooms to allow all students an opportunity to meet with teachers in smaller settings to remediate failing grades.

The structure for this program allowed students to self-direct their attendance to any number of intervention/enrichment options. The potential for ambiguity and disruption was high, requiring the principal to balance personal concerns with school goals in order to increase the likelihood of greater implementation success.

Cluster 2: Organizational Efficiency

With percentile ratings in the dimensions of Trust in Others and Administrative Efficiency of 28 and 71, respectively, Principal A exhibits a profile that relies on clearly established procedures and structures. A Low rating in Trust in Others suggests that teachers perceive Principal A as being in charge, fully capable of managing the decision-making and role clarification that is necessary in innovation implementation. The ratings in this cluster indicate that his teachers consider him highly organized and precise on expectations of all members of the school. It is also likely that he identifies resources and makes them readily available.

The ratings indicated in this cluster illustrate the perception that the remediation program has been designed and implemented with a high level of organizational efficiency, allowing teachers to follow clear procedures to make the implementation smoother.

Cluster 3: Strategic Sense

The percentile ratings for this cluster, which includes Day-to-Day and Vision and Planning, were 27 and 74, respectively. The high rating in Vision and Planning indicates that teachers perceive the principal has a long-term plan for the school and that he knows how the innovation will help achieve school-wide goals regarding student learning. They also perceive that he is aware of how his moment-to-moment actions affect the school's long-term plan because he has a clear picture of where the school is going. He is likely to be involved in what is happening with teachers and students. This, in connection with high scores on Formal/Meaningful and Administrative Efficiency, indicates the principal's deep commitment to providing a positive and effective experience for students.

Profile of Principal B

Principal B was rated by 58% of his faculty as an Initiator, while the remaining 42% rated him as Manager. Compared to Principal A, Principal B was rated significantly lower in Social/Informal, slightly lower in Formal/Meaningful, and slightly higher in Trust in Others Administrative Efficiency, Day-to-Day, and Vision and Planning. The bar graph for Principal B is very similar to that of the stereotypical Initiator with the exception of his low rating in the Social/Informal dimension.

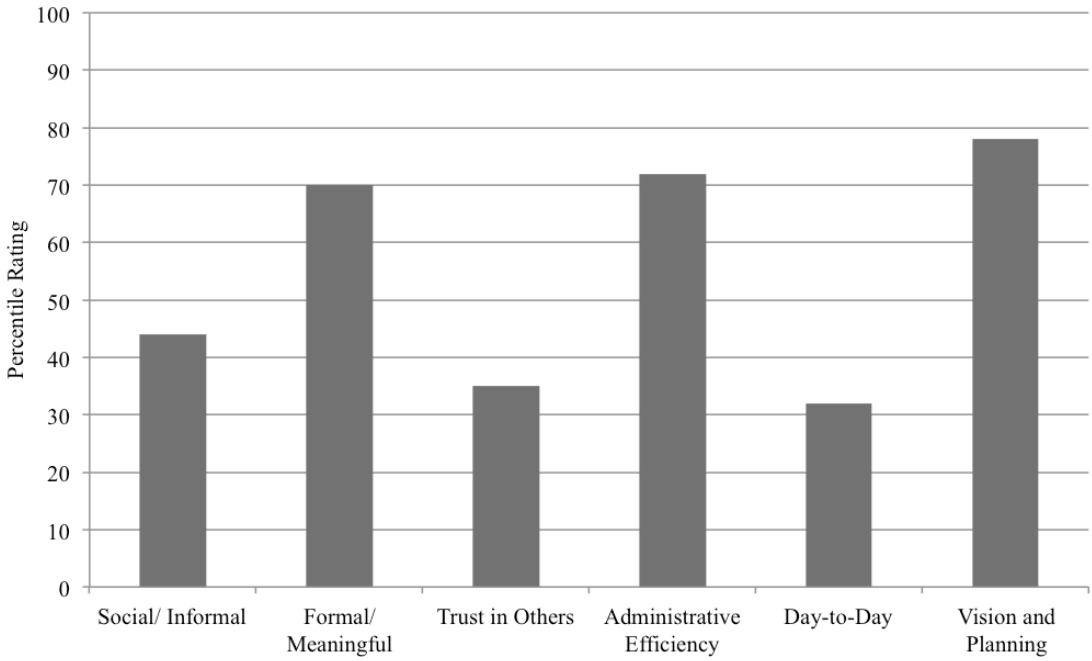

Figure 2. Principal CFS Profile Based on Teacher Ratings: Principal B

Cluster 1: Concern for People

Principal B's percentile rating in the Concern for People Cluster, which includes the dimensions of Social/Informal and Formal/Meaningful, was 44 and 70, respectively (See Figure 2). While most Initiators score high in both Social/Informal and Formal/Meaningful, this principal did not. These scores indicate that teachers feel he engages in communication related to school tasks, priorities, and other substantive issues, but has limited interaction related to personal, friendly conversations that focus on the feelings and perceptions of his teachers as they implement innovations. His Social/Informal score was the lowest of all participant principals.

The low score in Social/Informal combined with high scores in Formal/Meaningful, Administrative Efficiency, and Vision and Planning indicate that conversations with teachers revolve more around the long-range plans and goals of the

school. School B was implementing a plan for high school readiness for 9th grade students housed in a 7-9 setting, which was the likely focus of these conversations.

Cluster 2: Organizational Efficiency

With percentile ratings in the dimensions of Trust in Others and Administrative Efficiency of 35 and 72, respectively, Principal B exhibits a profile that relies on clearly established procedures and structures. The Low Trust in Others rating suggests that teachers perceive Principal B as being in charge, fully capable of managing the decision-making and role clarification that is necessary in innovation implementation. They consider him highly organized and precise on expectations of all members of the school and believe he identifies resources and makes them readily available.

The ratings indicated in this cluster illustrate the perception that the high school readiness plan has been designed and implemented with a high level of organizational efficiency, allowing teachers to follow clear procedures to make the implementation smoother. If the need for new structure arises, Principal B would likely move to ensure they are formally established.

Cluster 3: Strategic Sense

The percentile ratings for this cluster, which includes Day-to-Day and Vision and Planning, were 32 and 78, respectively. The high rating in Vision and Planning indicates that teachers perceive the principal has a long-term plan for the school and that he knows how the high school readiness plan will help achieve school-wide goals regarding student learning and preparation for the future. They also perceive that he is aware how his moment-to-moment actions affect the school's long-term plan because he has a clear

picture of where the school is going. He is likely to be involved in what is happening with teachers and students. This, in connection with high scores on Formal/Meaningful and Administrative Efficiency, suggests that the principal has a deep commitment to providing a positive and effective experience for students.

Profile of Principal C

Principal C was rated by 54% of his faculty as an Initiator, while the remaining 46% rated him as a Manager. Compared to Principals A and B, Principal C was exactly halfway between them in Social/Informal, and very nearly the same in all other dimensions.

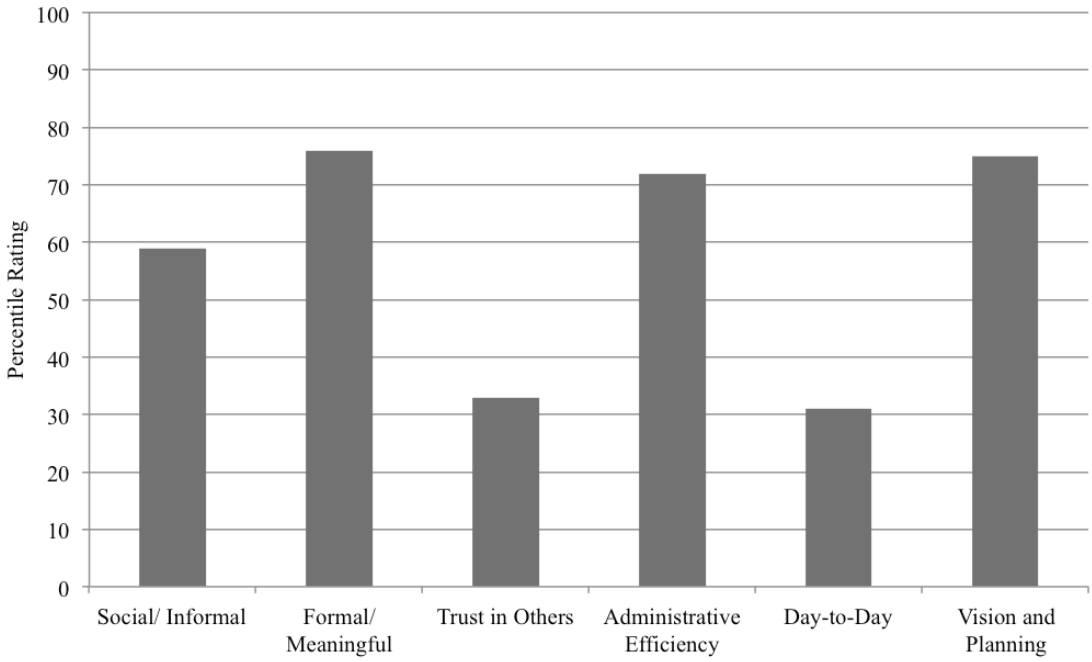

Figure 3. Principal CFS Profile Based on Teacher Ratings: Principal C

Cluster 1: Concern for People

Principal C's percentile rating in the Concern for People Cluster, which includes the dimensions of Social/Informal and Formal/Meaningful, was 59 and 76, respectively (See Figure 3). While not quite as high as Principal A in Social/Informal, Principal C scored high enough to be perceived as more engaging in social settings and would appear to spend more time in personal conversations with teachers than Principal B. These scores indicate that teachers feel he engages in communication related to school tasks, priorities, and other substantive issues, but has limited interaction related to personal, friendly conversations that focus on the feelings and perceptions of his teachers as they implement innovations.

His score in Social/Informal combined with high scores in Formal/Meaningful and Administrative Efficiency and Vision and Planning suggest that conversations with teachers revolve around the long-range plans and goals of the school. School C is working to improve student proficiency. Principal C is very likely exhibiting a focus on what school members are doing related to this current innovation implementation in his conversations and communications.

The combination of higher than average Social/Informal and high Formal/Meaningful ratings indicates that Principal C is likely to engage in highly effective conversations that address the concerns and feelings of teachers in a way that is personal and meaningful. The ratings indicate a balance of concern for teachers as they progress through the innovation implementation.

School C is the only middle school in the district designated as a Title 1 school. While the infusion of funds can be a boon to the school and provide resources unattainable before, the federal regulations and requirements associated with this designation can be burdensome and create a great deal of pressure on administration and staff.

The pressure to perform at a level that increases student proficiency can cause frustration and dissension in a school. The potential for divisiveness and disruption is high. The ability of this principal to balance personal concerns with school goals gives him the likelihood of greater implementation success as members of the school team move forward.

Cluster 2: Organizational Efficiency

With percentile ratings in the dimensions of Trust in Others and Administrative Efficiency of 33 and 72, respectively, Principal C exhibits a profile that relies on clearly established procedures and structures. The Low Trust in Others rating suggests that teachers perceive Principal C as being in charge, fully capable of managing the decision-making and role clarification that is necessary in innovation implementation. They consider him highly organized and precise on expectations of all members of the school. He identifies resources and makes them readily available.

The ratings indicated in this cluster illustrate the perception that the improvement of student proficiency plan has been designed and implemented with a high level of organizational efficiency, allowing teachers to follow clear procedures to make the

implementation smoother. If the need for new structure arises, Principal C would move to ensure they are formally established.

Cluster 3: Strategic Sense

The percentile ratings for this cluster, which includes Day-to-Day and Vision and Planning, were 31 and 75, respectively. The high rating in Vision and Planning indicates that teachers perceive the principal has a long-term plan for the school and that he knows how their efforts will help achieve school-wide goals regarding student learning and proficiency. They also perceive that he is aware how his moment-to-moment actions affect the school's long-term plan because he has a clear picture of where the school is going. He is likely to be involved in what is happening with teachers and students. This, in connection with high scores on Formal/Meaningful and Administrative Efficiency, suggests that the principal has deep commitment to providing a positive and effective experience for students.

Profile of Principal D

Principal D was rated by 51% of his faculty as an Initiator, while the remaining 49% rated him as a Manager. It is important to note that there is a nearly 50-50 split in teachers' perception of this principal's style. This was reflected in the percentile rankings for each dimension.

Compared to the other three Initiator principals, Principal D scored lower than Principals A and C, but higher than Principal B in Social/Informal, and higher than all of them in Day-to-Day. His scores in Formal/Meaningful, Administrative Efficiency and

Vision and Planning are lower than the other three principals. His score in Trust in Others is second lowest, only higher than Principal A.

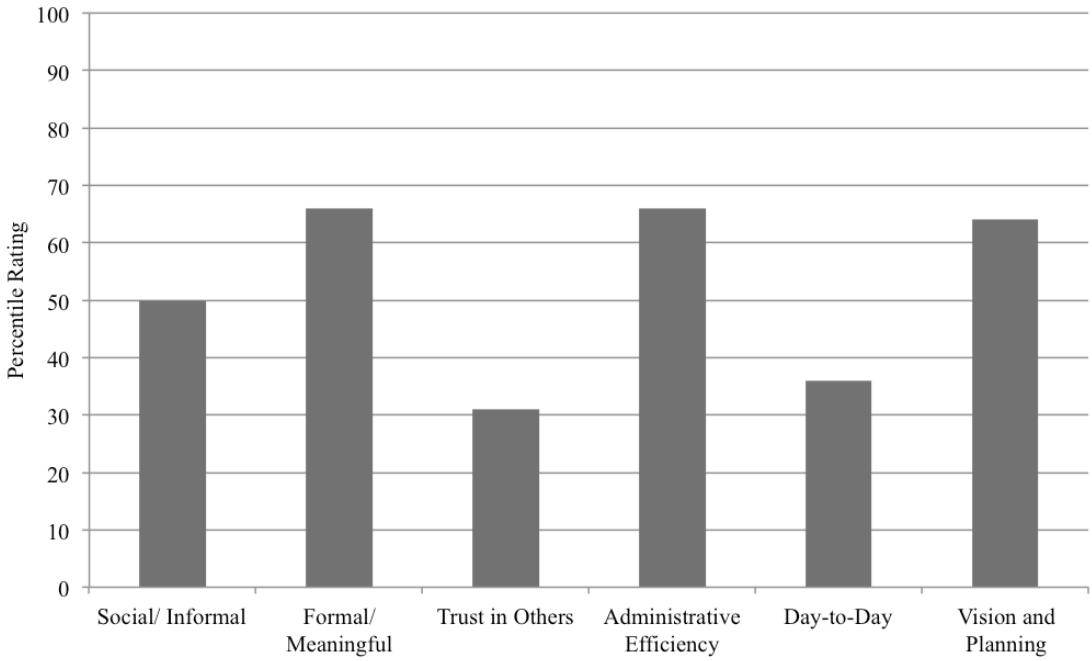

Figure 4. Principal CFS Profile Based on Teacher Ratings: Principal D

Cluster 1: Concern for People

Principal D's percentile rating in the Concern for People Cluster, which includes the dimensions of Social/Informal and Formal/Meaningful, was 50 and 66, respectively (See Figure 4). While most Initiators score high in both Social/Informal and Formal/Meaningful, this principal did not. These scores indicate that teachers feel he engages in communication related to school tasks, priorities, and other substantive issues, but has limited interaction related to personal, friendly conversations that focus on the feelings and perceptions of his teachers as they implement innovations. The Social/Informal score was the second lowest among participant principals.

The average score in Social/Informal combined with relatively high scores in Formal/Meaningful, Administrative Efficiency, and Vision and Planning indicate that conversations with teachers revolve more around the long-range plans and goals of the school. School D is implementing a plan to establish intended learning outcomes and common assessments for each teacher and department in the school. Principal D may be exhibiting a focus on what school members are doing related to this current innovation implementation in his conversations and communications.

Cluster 2: Organizational Efficiency

With percentile ratings in the dimensions of Trust in Others and Administrative Efficiency of 31 and 66, respectively, Principal D exhibits a profile that relies on clearly established procedures and structures. The Low Trust in Others rating suggests that teachers perceive Principal D as being in charge, fully capable of managing the decision-making and role clarification that is necessary in innovation implementation. They consider him highly organized and precise on expectations of all members of the school. He identifies resources and makes them readily available.

The ratings indicated in this cluster illustrate the perception that the development of intended learning outcomes and common assessments has been designed and implemented with a high level of organizational efficiency, allowing teachers to follow clear procedures to make the implementation smoother. If the need for new structure arises, Principal D would likely move to ensure they are formally established.

Cluster 3: Strategic Sense

The percentile ratings for this cluster, which includes Day-to-Day and Vision and Planning, were 36 and 64, respectively. The relatively high rating in Vision and Planning indicates that teachers perceive the principal has a long-term plan for the school and that he knows how developing intended learning outcomes and common assessments will help achieve school-wide goals regarding student learning and assessment of that learning. They also perceive that he is aware how his moment-to-moment actions affect the school's long-term plan because he has a good picture of where the school is going. He is likely to be involved in what is happening with teachers and students. This, in connection with high scores on Formal/Meaningful and Administrative Efficiency, suggests that the principal has a commitment to providing a positive and effective experience for students.

Initiators as a Group

These four principals share the common pattern that defines the stereotypical Initiator (See Figure 5). In the Concern for People cluster, with the exception of Principal B, they all have average to above average scores in the Social/Informal, while rating highly in Formal/Meaningful. This indicates that they each are seen as active in communicating with their staff about the specifics of their particular innovations while also carrying on personally meaningful conversations such as addressing the personal concerns of their teachers related to the innovation they are implementing. They likely convey strong expectations for themselves and for their teachers.

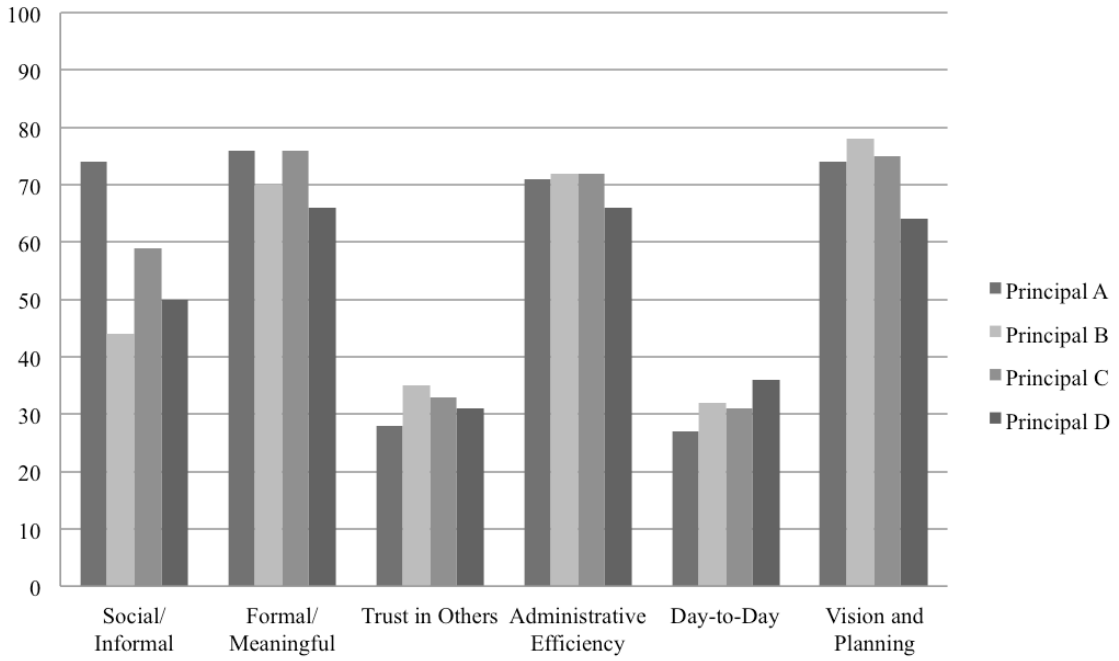

Figure 5. Comparison of Initiators based on Teacher Ratings

The ratings in the Organizational Efficiency cluster are also consistent with Initiator patterns. Trust in Others scores were low while Administrative Efficiency scores were high. These principals are able to maintain a grasp on the big picture and marshal resources to make their teachers jobs smoother and easier. They delegate responsibility to those they have confidence in.

The ratings in the Strategic Sense cluster are as consistent with the established Initiator CFS profile. Day-to-Day scores are low while Vision and Planning scores are high. These principals have a long-term vision and understand how they integrate their day-to-day activities to move toward that vision. They constantly monitor the progress of their schools and place resources carefully. Their focus is on the work at hand.

Averaging the scores of each principal in each of the dimensions of the three clusters reveals the average Initiator in this school district. He has a Social/Informal

rating of 57; a Formal/Meaningful rating of 70; a Trust in Others rating of 32; an Administrative Efficiency rating of 70; a Day-to-Day rating of 32; and, a Vision and Planning rating of 73. This profile is very close to the stereotypical profile of an Initiator principal. Principal C is the nearest principal to this average.

The majority of the participant principals' teachers perceive them as Initiators, but to varying degrees, reinforcing the idea that all principals are not the same. Even though they have similar tendencies and carry out their jobs in much the same way, each principal will have to use their unique set of skills, abilities, and experiences to produce a positive outcome for students.

Meeting the Managers

According to their teacher ratings, five of the ten principals were identified as Managers. Unlike the Initiator principals, each Manager principal received ratings that reflected all three styles, including that of Responder. The profiles of each of these principals are presented here.

Profile of Principal E

Principal E was rated by 65% of his faculty as a Manager. Of the remaining teachers, 29% rated him as an Initiator and 6% rated him as a Responder, which categorizes Principal E as a Manager. With a relatively high score in Social/Informal (68), second only to Principal A, and scores ranging from 44 to 64 in the other dimensions, Principal E's profile is slightly more exaggerated than the stereotypical Manager profile.

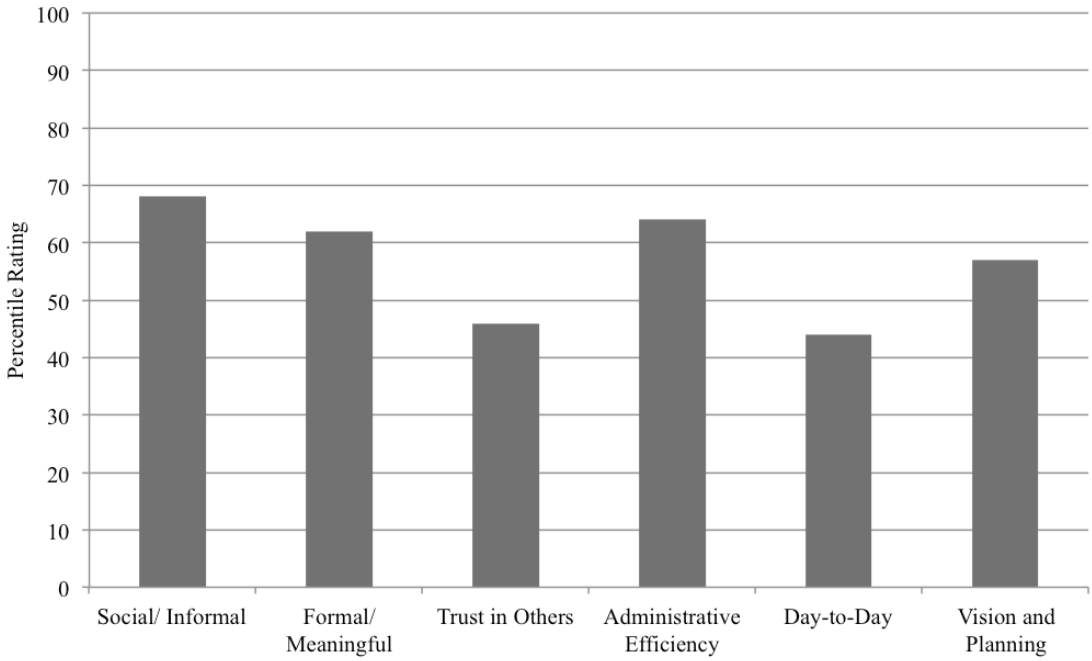

Figure 6. Principal CFS Profile Based on Teacher Ratings: Principal E

Cluster 1: Concern for People

Principal E's percentile rating in the Concern for People Cluster, which includes the dimensions of Social/Informal and Formal/Meaningful, was 68 and 62, respectively (See Figure 6). These scores indicate that, compared to the other middle school principals in this district, he probably engages in less communication related to school tasks, priorities, and other substantive issues, but has more frequent interactions that are more personal and friendly focusing on the feelings and perceptions of his teachers as they implement innovations. His Social/Informal score was the second highest of all study principals, while his Formal/Meaningful score was third lowest.

The higher score in Social/Informal combined with moderate scores in Formal/Meaningful, Administrative Efficiency, and Vision and Planning and lower than average scores in Trust in Others and Day-to-Day indicate that conversations with

teachers revolve more around the long-range plans and goals of the school. School E is working on implementing a Professional Learning Community (PLC) model, which emphasizes teacher collaboration to enhance student learning. Principal E is likely to be exhibiting a focus on what school members are doing related to this current innovation implementation in his conversations and communications. School E is recognized in the district as a high functioning school with good results on end of year tests. It is possible that Principal E does not see the need to emphasize Formal/Meaningful communications since the school is in a positive trend. He has been at the school for three years, taking over for a principal that was well established and had developed a firm set of rules and procedures.

Cluster 2: Organizational Efficiency

The ratings for Principal E in the dimensions of Trust in Others and Administrative Efficiency were 46 and 64, respectively. While the higher rating in Administrative Efficiency indicates that he is more likely to be focused on activities that provide resources and direction to help the school run smoothly, the moderate score in Trust in Others indicates he is seen as sharing decision-making responsibilities and is willing to allow systems and procedures to evolve with each encounter.

The ratings indicated in this cluster illustrate the perception that the transition to a PLC model, emphasizing teacher collaboration, has been designed and implemented with a focus on necessary resources and organization of activities. Principal E is likely to support his teachers and works to ensure that they understand the implications of the model and how it will affect their work.

Cluster 3: Strategic Sense

The percentile ratings for this cluster, which includes Day-to-Day and Vision and Planning, were 44 and 57, respectively. The moderate scores suggest that teachers perceive that the principal has a long-term plan for the school and that he knows how a PLC model will help achieve school-wide goals regarding student learning and success. They may also perceive that he will protect them from excessive demands as the implementation process moves forward.

Profile of Principal F

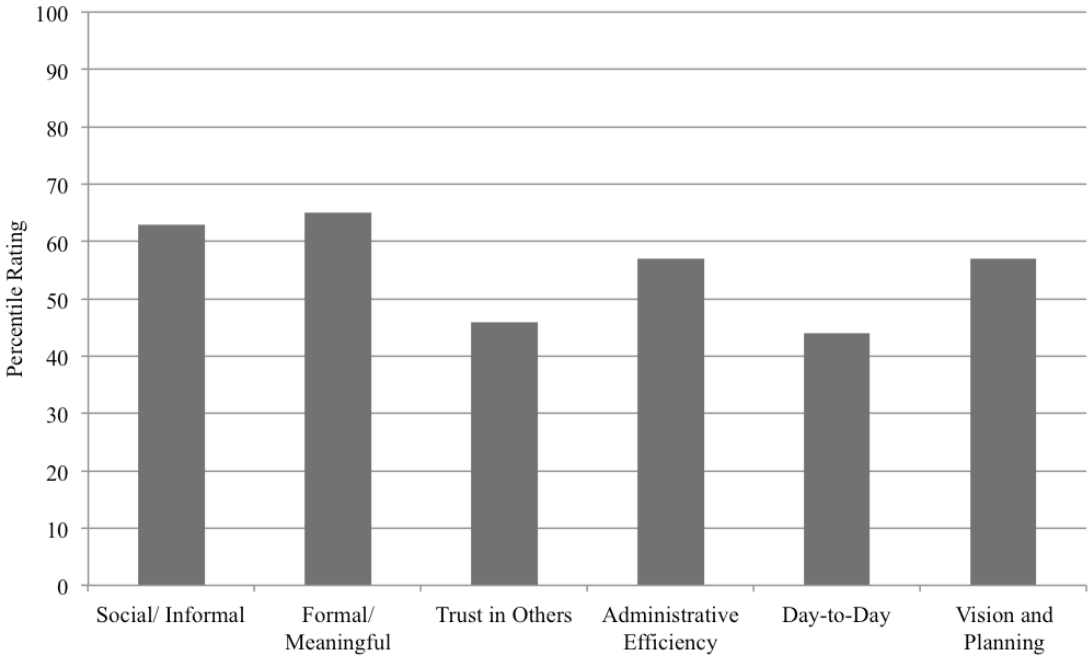

Figure 7. Principal CFS Profile Based on Teacher Ratings: Principal F

Principal F was rated by 59% of his faculty as a Manager. Of the remaining teachers, 28% rated him as an Initiator and 14% as a Responder, which categorizes Principal F as a Manager. With a relatively high score in Social/Informal (63), third only

to Principals A and C, and scores ranging from 44 to 65 in the other dimensions, Principal F's profile is slightly more exaggerated than the stereotypical Manager profile.

Cluster 1: Concern for People

Principal F's percentile rating in the Concern for People Cluster, which includes the dimensions of Social/Informal and Formal/Meaningful, was 63 and 65, respectively (See Figure 7). These scores indicate that, compared to the other middle school principals in this district, he probably engages in less communication related to school tasks, priorities, and other substantive issues, but has more frequent interactions that are personal and friendly focusing on the feelings and perceptions of his teachers as they implement innovations. Yet, both scores being above average indicates that he initiates both kinds of conversations often.

The moderate scores in Social/Informal, Formal/Meaningful, Administrative Efficiency, and Vision and Planning and lower than average scores in Trust in Others and Day-to-Day indicate that conversations with teachers revolve more around the long-range plans and goals of the school. School F is working on implementing a remediation program in the school to provide a safety net for struggling students. Principal F is likely to be exhibiting a focus on what school members are doing related to this current innovation implementation in his conversations and communications. School F is recognized in the district as one of the highest functioning schools with excellent results on end of year tests. It is possible that Principal F is focused on managing the school since the school is in a positive trend.

Cluster 2: Organizational Efficiency

The ratings for Principal F in the dimensions of Trust in Others and Administrative Efficiency were 46 and 57, respectively. While the higher rating in Administrative Efficiency indicates that he is more likely to be focused on activities that provide resources and direction to help the school run smoothly, the moderate score in Trust in Others indicates he may also share decision-making responsibilities and have a tendency to allow systems and procedures to evolve with each encounter.

The ratings indicated in this cluster illustrate the perception that the remediation plan for students has been designed and implemented with a focus on necessary resources and organization of activities. Principal F likely supports his teachers and works to ensure that they understand the implications of the plan and how it will affect their work and the success of students.

Cluster 3: Strategic Sense

The percentile ratings for this cluster, which includes Day-to-Day and Vision and Planning, were 44 and 57, respectively, which match the scores of Principal E in this same cluster. The moderate scores in both Day-to-Day and Vision and Planning indicate that teachers perceive the principal has a long-term plan for the school and that he knows how a remediation plan will help achieve school-wide goals regarding student learning and success. They also perceive that he will protect them from excessive demands as the implementation process moves forward.

Profile of Principal G

Principal G was rated by 51% of his faculty as a Manager. Of the remaining teachers, 41% rated him as an Initiator and 8% as a Responder, categorizing Principal G as a Manager. With an above average score in Formal/Meaningful (63) and scores ranging from 36 to 62 in the other dimensions, Principal G's profile is much more exaggerated than the stereotypical Manager profile. The anomaly is found in the discussion of Cluster 2 below.

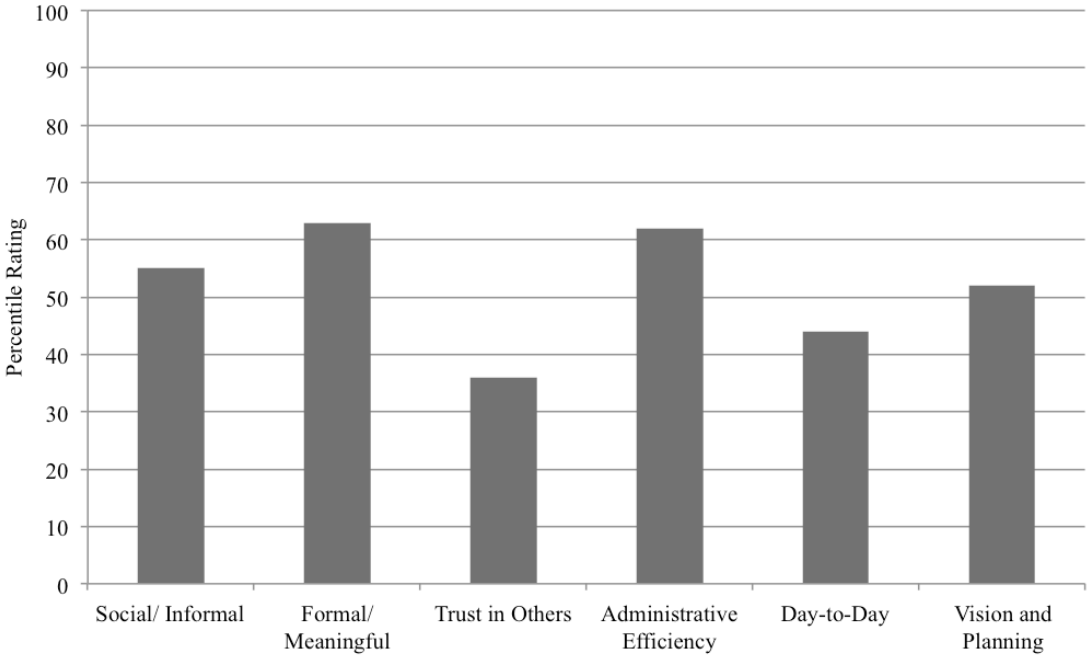

Figure 8. Principal CFS Profile Based on Teacher Ratings: Principal G

Cluster 1: Concern for People

Principal G's percentile rating in the Concern for People Cluster, which includes the dimensions of Social/Informal and Formal/Meaningful, was 55 and 63, respectively (See Figure 8). These scores indicate that he probably engages in more communication

related to school tasks, priorities, and other substantive issues, but has less frequent interactions that are more personal and friendly focusing on the feelings and perceptions of his teachers as they implement innovations.

The moderate scores in Social/Informal, Formal/Meaningful, Administrative Efficiency, and Vision and Planning and lower than average scores in Trust in Others and Day-to-Day indicate that conversations with teachers revolve more around the long-range plans and goals of the school. School G is working on decreasing failure rates among students in the school. Principal G is very likely exhibiting a focus on what school members are doing related to this current innovation implementation in his conversations and communications.

Cluster 2: Organizational Efficiency

With percentile ratings in the dimensions of Trust in Others and Administrative Efficiency of 36 and 62, respectively, Principal G exhibits a profile in this cluster that resembles that of Principal D, an Initiator. He most likely relies on clearly established procedures and structures. A Low Trust in Others score indicates that teachers perceive Principal G as being in charge, fully capable of managing the decision-making and role clarification that is necessary in innovation implementation. They consider him highly organized and precise on expectations of all members of the school. He identifies resources and makes them readily available.

The ratings indicated in this cluster illustrate the perception that the development of a plan to reduce the failure rate among students has been designed and implemented with a high level of organizational efficiency, allowing teachers to follow clear

procedures to make the implementation smoother. If the need for new structure arises, Principal G would likely move to ensure they are formally established.

Cluster 3: Strategic Sense

The percentile ratings for this cluster, which includes Day-to-Day and Vision and Planning, were 44 and 52, respectively, which are very similar to Principals E and F in this same cluster. The moderate scores in both Day-to-Day and Vision and Planning indicate that teachers perceive the principal has a long-term plan for the school and that he knows how a remediation plan will help achieve school-wide goals regarding student learning and success. They also perceive that he will protect them from excessive demands as the implementation process moves forward.

Profile of Principal H

Principal H was rated by 50% of his faculty as a Manager. Of the remaining teachers, 42% rated him as an Initiator and 8% rated him as a Responder. These percentages are nearly identical to the percentages for Principal G, categorizing Principal H as a Manager. With a high score in Formal/Meaningful (70) and scores ranging from 32 to 66 in the other dimensions, Principal H's profile is much more exaggerated than the stereotypical Manager profile. In fact, if the values for the percentiles were slightly higher, the profile represented in the bar graph would look very much like an Initiator.

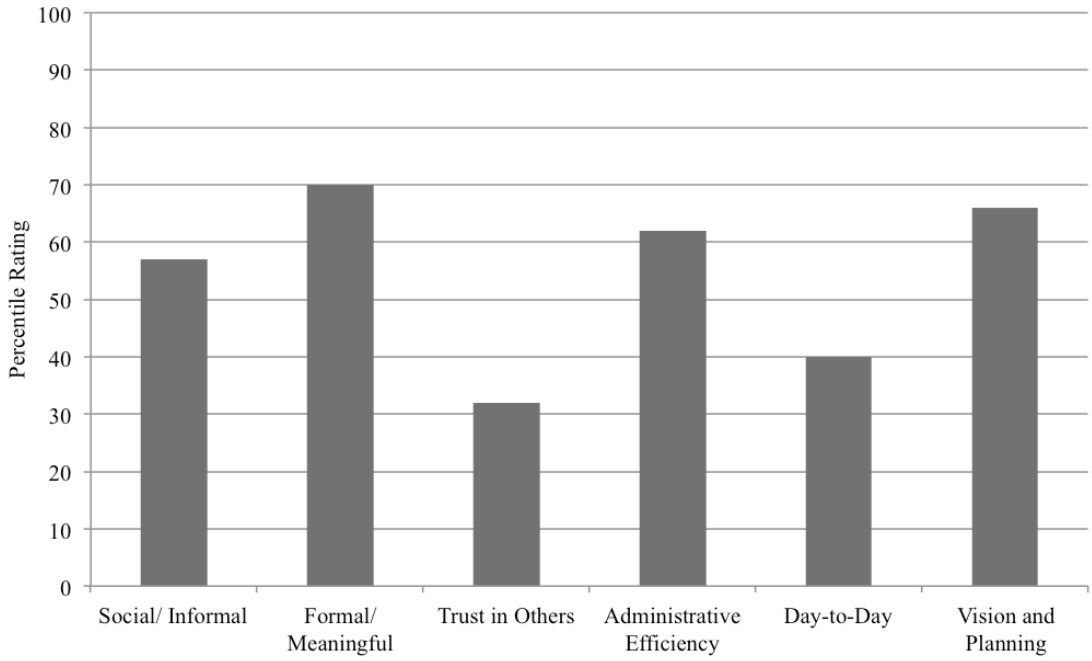

Figure 9. Principal CFS Profile Based on Teacher Ratings: Principal H

Cluster 1: Concern for People

Principal H's percentile rating in the Concern for People Cluster, which includes the dimensions of Social/Informal and Formal/Meaningful, was 57 and 70, respectively (See Figure 9). These scores indicate that teachers perceive that he engages in communication related to school tasks, priorities, and other substantive issues, while also engaging in interactions related to personal, friendly conversations that focus on the feelings and perceptions of his teachers as they implement innovations. The Formal/Meaningful score was the third highest of all participant principals.

The above average score in Social/Informal combined with relatively high scores in Formal/Meaningful, Administrative Efficiency, and Vision and Planning indicate that conversations with teachers revolve around the long-range plans and goals of the school. School H is working on implementing a Professional Learning Community (PLC) model,

which emphasizes teacher collaboration to enhance student learning. Principal H is very likely exhibiting a focus on what school members are doing related to this current innovation implementation in his conversations and communications.

Cluster 2: Organizational Efficiency

With percentile ratings in the dimensions of Trust in Others and Administrative Efficiency of 32 and 62, respectively, Principal H exhibits a profile in this cluster that resembles that of Principals D and G. He most likely relies on clearly established procedures and structures. A Low Trust in Others score indicates that teachers perceive Principal H as being in charge, fully capable of managing the decision-making and role clarification that is necessary in innovation implementation. They consider him highly organized and precise on expectations of all members of the school. He identifies resources and makes them readily available.

The ratings indicated in this cluster illustrate the perception that the development of a plan to implement a PLC model, emphasizing teacher collaboration to enhance student learning, has been designed and implemented with a high level of organizational efficiency, allowing teachers to follow clear procedures to make the implementation smoother. If the need for new structure arises, Principal H would move to ensure they are formally established.

Cluster 3: Strategic Sense

The percentile ratings for this cluster, which includes Day-to-Day and Vision and Planning, were 40 and 66, respectively, which were more exaggerated than the ratings for the previous three Managers. The relatively low score in Day-to-Day and the higher

rating in Vision and Planning indicate that teachers perceive the principal has a long-term plan for the school and that he knows how transition to a PLC emphasizing teacher collaboration will help achieve school-wide goals regarding student learning and success. They also perceive that he will protect them from excessive demands as the implementation process moves forward.

Profile of Principal I

Principal I was rated by 49% of his faculty as a Manager and 49% as an Initiator. The remaining 2% of teachers rated him as a Responder. Without a clear majority, his style is identified as the lower of the two. In this case, Principal I is a Manager.

The percentage of teachers rating Principal I as a Manager was the lowest of the five Managers. Even so, among the five Manager principals, the percentage rating him as an Initiator was the highest and the percentage rating him as a Responder was the lowest. This explains why, other than the moderate scores in the Concern for People cluster, the scores in clusters 2 and 3 resemble that of Initiators. With moderate scores in both Social/Informal (51) and Formal/Meaningful (59) and scores ranging from 29 to 72 in the other dimensions, Principal I's profile is much more exaggerated than the stereotypical Manager profile. In fact, if the values for the percentiles were slightly higher, the profile represented in the bar graph would look very much like an Initiator. Principal I produced the highest average classification rating among Managers at 1.4, higher, even, than Principal D, an Initiator.

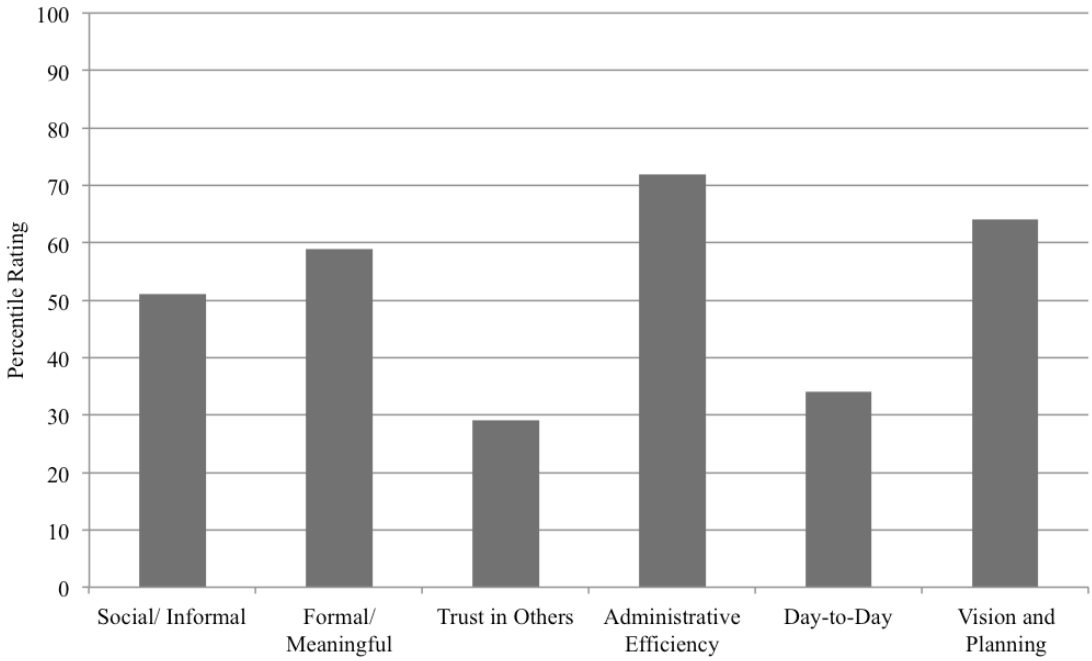

Figure 10. Principal CFS Profile Based on Teacher Ratings: Principal I

Cluster 1: Concern for People

Principal I's percentile rating in the Concern for People Cluster, which includes the dimensions of Social/Informal and Formal/Meaningful, was 51 and 59, respectively)See Figure 10). These scores indicate that he probably engages in more communication related to school tasks, priorities, and other substantive issues, but has less frequent interactions that are more personal and friendly focusing on the feelings and perceptions of his teachers as they implement innovations. His Social/Informal score was third lowest of all participant principals while his Formal/Meaningful score was second lowest.

In spite of his average scores in this cluster, high scores in Administrative Efficiency, and Vision and Planning indicate that conversations with teachers revolve around the long-range plans and goals of the school. School I is working on developing school-wide learning outcomes. Principal I is very likely exhibiting a focus on what

school members are doing related to this current innovation implementation in his conversations and communications.

Cluster 2: Organizational Efficiency

With percentile ratings in the dimensions of Trust in Others and Administrative Efficiency of 29 and 72, respectively, Principal I exhibits a profile in this cluster that resembles that of the Initiator principals. He most likely relies on clearly established procedures and structures. A Low Trust in Others score suggests that teachers perceive Principal I as being in charge, fully capable of managing the decision-making and role clarification that is necessary in innovation implementation. They consider him highly organized and precise on expectations of all members of the school. He identifies resources and makes them readily available.

The ratings indicated in this cluster illustrate the perception that the development of school-wide learning outcomes has been designed and implemented with a high level of organizational efficiency, allowing teachers to follow clear procedures to make the implementation smoother.

Cluster 3: Strategic Sense

The percentile ratings for this cluster, which includes Day-to-Day and Vision and Planning, were 34 and 64, respectively, which were more exaggerated than the ratings for the first three Managers and more closely resemble Principal D, an Initiator. The relatively low score in Day-to-Day and the higher rating in Vision and Planning indicate that teachers perceive the principal has a long-term plan for the school and that he knows how developing school-wide learning outcomes will help achieve school-wide goals

regarding student learning and success. They also perceive that he will protect them from excessive demands as the implementation process moves forward.

Managers as a Group

The five Manager principals share a common pattern that is more exaggerated than the stereotypical Manager (See Figure 11). Within the Concern for people cluster, with the exception of Principals E and F, they all have average scores in the Social/Informal while rating above average in Formal/Meaningful. This suggests that each principal is likely to communicate with their staffs about the specifics of their particular innovations while also carrying on personally meaningful conversations from day-to-day, addressing the personal concerns of their teachers related to the innovation they are implementing. Their conversations lend support to teachers regarding innovations and they seek to understand their concerns.

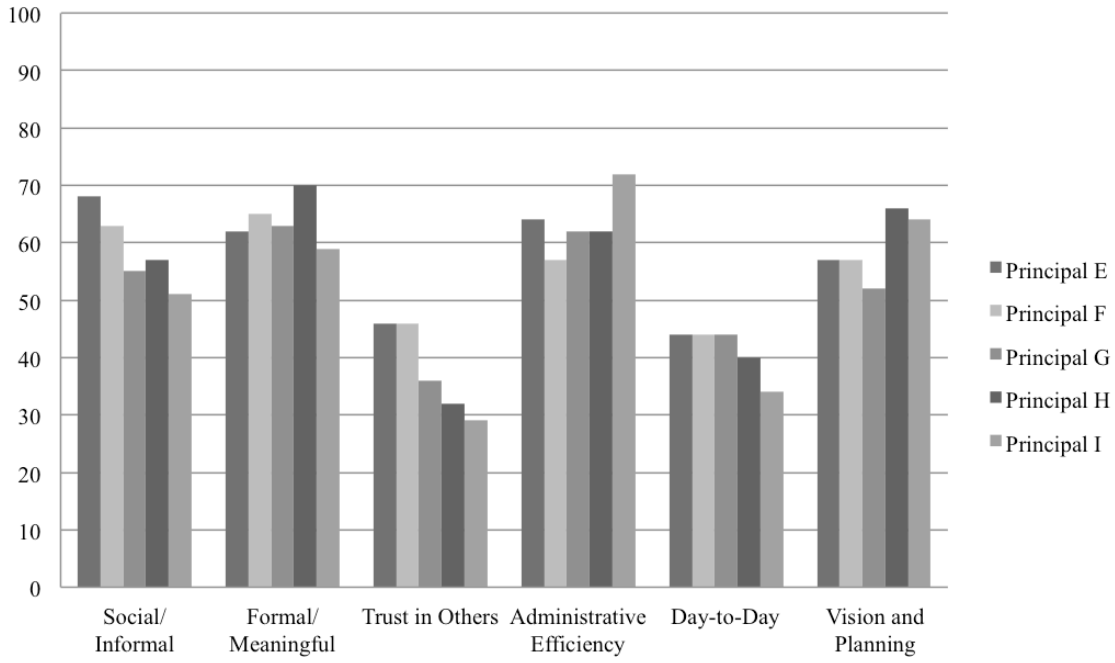

Figure 11. Comparison of Managers based on Teacher Ratings

The ratings in the Organizational Efficiency cluster are also consistent with Manager patterns. Trust in Others scores are somewhat below average while Administrative Efficiency scores are slightly above average.

The ratings in the Strategic Sense cluster are as consistent as the other two clusters. Day-to-Day scores are below average while Vision and Planning scores are above average. Combining the ratings shows that the average Manager in this school district has a Social/Informal rating of 59; a Formal/Meaningful rating of 64; a Trust in Others rating of 38; an Administrative Efficiency rating of 63; a Day-to-Day rating of 40; and, a Vision and Planning rating of 59. The overall group profile matches closely the stereotypical profile of a Manager principal. Principal H, who has been an administrator for six years, just one year at his current school, is the nearest principal to this average.

Reviewing the Responder

Profile of Principal J

Principal J was the only one of the ten participant principals ranked as a Responder. His teachers were split in thirds concerning their perceptions of his style with 31% rating him as an Initiator, 35% as a Manager, and 35% as a Responder. With no clear majority in any category, Principal J is classified as a Responder.

Principal J is the only one of the ten participant principals who garnered a significant percentage of teachers rating the principals as a Responder. The next highest percentage was Principal F at 14%. All others were single digit percentages. His classification average was lowest of all participant principals at -0.2.

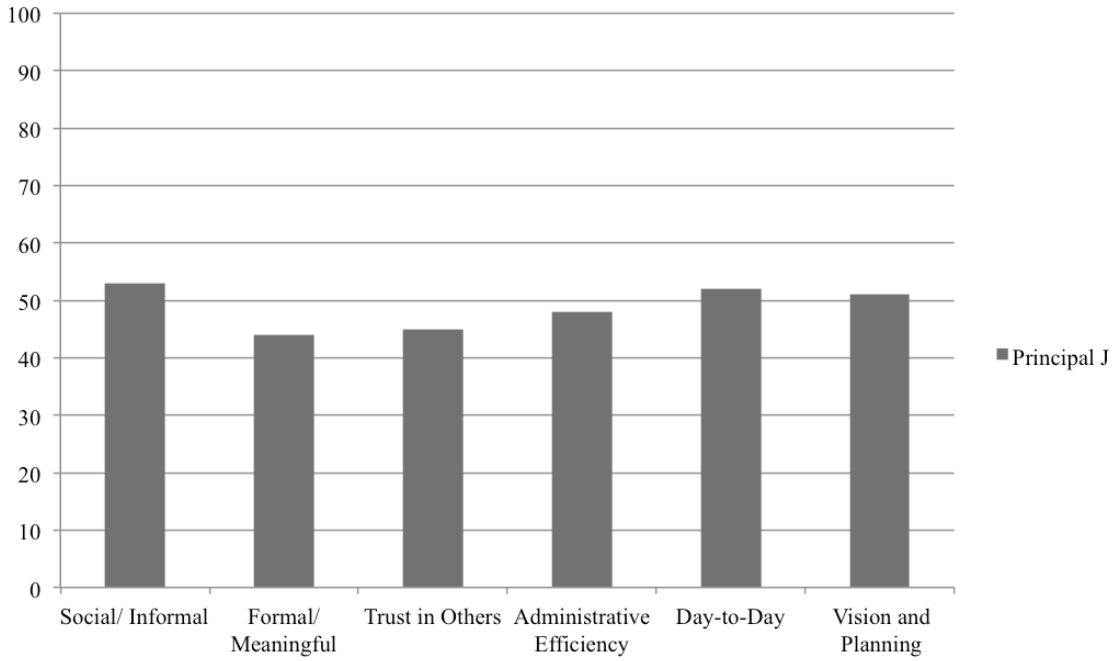

Figure 12. Principal CFS Profile Based on Teacher Ratings: Principal J

Cluster 1: Concern for People

Percentile ratings for Principal J in the Concern for People cluster, which includes Social/Informal and Formal/Meaningful, were 53 and 44, respectively (See Figure 12). While his Social/Informal score is average and slightly higher than one of the Initiator (B) and one of the Manager (I) principals, his Formal/Meaningful score is below average and significantly lower than all of the other principals, which ranged from 59 to 76.

School J has been working on development and implementation of a 5-year plan for providing a guaranteed and viable curriculum through a PLC model with teacher collaboration at the center. Scores for Principal J in this cluster indicate that teachers perceive the principal deals less frequently with substantive issues related to the 5-year plan than he does on more social conversations related to teacher perceptions and feelings about the plan.

Cluster 2: Organizational Efficiency

Percentile ratings for Principal J in this cluster, which includes Trust in Others and Administrative Efficiency, were 45 and 48, respectively. His score in Trust in Others was below average and third highest among participant principals. More than the other middle school principals in the district, he relies on others to carry the work of the school forward. His score in Administrative Efficiency was also below average, and significantly lower than the other principals, whose scores ranged from 57 to 72. His teachers perceive that guidelines, procedures and rules are not as clearly delineated as other principals in the district.

The ratings indicated in this cluster illustrate the perception that the development of the 5-year plan has been designed and implemented without a high level of organizational efficiency, which would allow teachers to follow clear procedures to make the development and implementation of the plan smoother. Resources and schedules may be hard to come by and teachers may have to work harder to locate necessary information.

Cluster 3: Strategic Sense

The percentile scores in this cluster for Principal J, which includes Day-to-Day and Vision and Planning, were 52 and 51, respectively. While both scores were average, his score in the former dimension was the highest of all participant principals while his score in the latter was the lowest.

Both scores leaning toward the middle suggest that teachers perceive Principal J as having neither a strong tendency toward creating a clear picture of where the school is

heading, nor a total lack of vision or focus. Compared to the other principals, he more likely fails to connect long-term plans to moment-to-moment actions and decisions.

Summary of Principal J

The overall profile of Principal J resembles that of the stereotypical Manager except for the lower than expected ratings. Responder profiles exhibit high-low, high-low, high-low patterns. A closer look at the profile for Principal J reveals a less exaggerated Responder profile, more flat across all six dimensions.

Principal J had the lowest and highest ratings in four of the six dimensions. The dimensions in which he was lowest were Formal/Meaningful and Vision and Planning and the dimensions in which he was highest were Trust in Others and Day-to-Day. This, too, indicates a perception that would tend toward a Responder profile.

Teachers at School J were decidedly split in their perception of the overall approach of Principal J to implementing innovations. Such a division may indicate that he lacks consistency with regard to communicating his vision and goals for the school and how he identifies and allocates resources. Different people have access to more or less of the necessary information and resources, depending on the relationship they have with the principal.

A New Approach to Evaluating CFS-Change Facilitator Style Composite Rating

In the original study, an expert panel was used to classify the leadership style of each participant principal. The principal style was placed on a continuum from 0-100, quantifying the principals' CF Style. For this study, since the CFSQ was used to

determine SF Style, a new way to quantify the CF Style for use in statistical analyses had to be determined.

One of the established analyses of CFSQ data is to use a classification function to estimate the overall CF Style (Hall & George, 1999). In this analysis the scores for each of the six dimensions/scales of an individual's CFSQ ratings were compared to a normative overall profile that is characteristic of each of the three CF Styles (Responder, Manager, and Initiator). When there are multiple CFSQ respondents a procedure is needed to summarize and/or reflect the number or percentage of individual ratings associated with each CF Style.

In one school there could be a relatively high consensus across teachers in regard to a principal's CF Style. In other schools there will likely be one group of teachers who perceive the principal overall as one style, while another group's ratings would be indicative of one of the other two CF Styles. As was found in this study, in many cases there will be some ratings indicative of each of three styles.

For some study questions it is useful to conduct analyses that are based in a holistic estimate of CF Style. A new analysis procedure for combining individual overall ratings is proposed herein. This procedure combines the individual CFSQ classification function ratings into a number between 0 and 100 (Hall and Hord, 2011). This Composite Rating score is assumed to be equivalent to the long established Consensus CFS Rating, which ranges from 0 - 100. Along this continuum the archetype Responder would be placed at the 30 point, the Manager at the 60 point, and the Initiator at the 90 point.

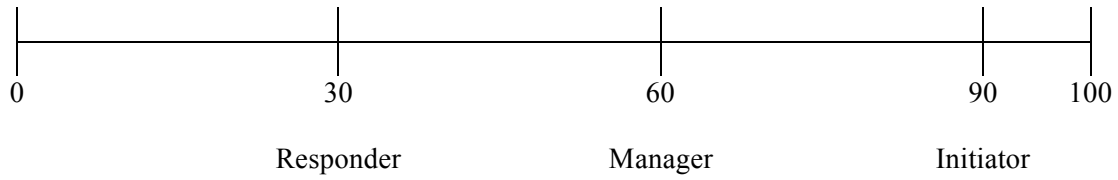

Figure 13. A Continuum of Change Facilitator Styles

In this analysis the CFS Composite Rating (CFS-CR) can be related to the established CF Style Continuum (30-60-90) that has been used by expert panels in other studies (See for example Hall, et al. 2006 & Lewis, 2011). The CFS-CR also affords the opportunity to rank principals in terms of CFS and test associations with other data such as test scores. This formula provides a way to use the depth of CFSQ data to estimate the overall CF Style.

Values for the composite rating are determined by entering, in decimal form, the percentage of teachers rating principals in the specific styles into the following formula: CR= 30R + 60M + 90I (R= % Responder; M= % Manager; I= % Initiator) This procedure was done for the middle school principals in this study (See Table 4).

Using 75 as the demarcation between Initiator and Manager and 45 as the demarcation between Manager and Responder, each of the principals fell into the category in which they were identified previously, with the exception of the lone Responder, whose CFS-CR rating fell into the Manager range (See Figure 14).

	Style Percentage			
	R	M	I	CR
Initiators				
Principal A	0	.35	.65	79.5
Principal B	0	.42	.58	77.4
Principal C	0	.46	.54	76.2
Principal D	0	.49	.51	75.3
Managers				
Principal E	.06	.65	.29	66.9
Principal F	.14	.59	.28	64.8
Principal G	.08	.51	.41	69.9
Principal H	.08	.50	.42	70.2
Principal I	.02	.49	.49	74.1
Responders				
Principal J	.35	.35	.31	59.4

Table 4. Change Facilitator Style- Composite Rating (CFS-CR)

The result of these calculations provided an interesting opportunity to look at the ratings as identified by highest percentage of teachers versus their Composite Rating. For example, the researcher noticed that the first three Managers as identified by highest percentage of teachers were actually lower than the last two in CFS-CR. This allowed us to consider the fact that while Principals E and F have higher percentages of teachers rating them as Managers, Principals G, H, and I have higher percentages of teachers rating them as Initiators, representing a more accurate placement of these principals on

the CF Style Continuum.

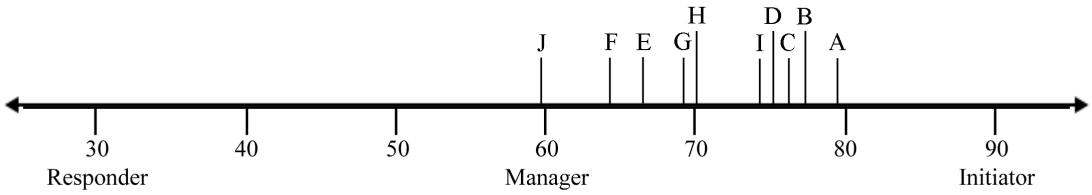

Figure 14. CFS-CR Ratings of Study Principals on a Continuum of CF Styles

Research Question 2

2. What is the extent of agreement between teacher ratings of the principal's CFS and the principal's self-rating of CFS?

Reflection is a powerful process. The CFSQ provides principals an opportunity to reflect on their interactions with teachers as they rate their level of involvement in the six dimensions of Change Facilitator Style. The CFSQ was developed to reveal the opinion of teachers related to the behaviors of principals and their perceived intents. The CFSQ can also be used for self-assessment and reflection. In this study the researcher asked each principal to fill out the CFSQ as they perceived themselves in their leadership roles related to a particular innovation or major project being implemented currently in their schools. This process was illuminating as comparisons were made.

Teachers are direct observers of the principal's day-to-day activities and interactions. When teachers complete the CFSQ, they reveal their perceptions of what their principals do to affect change in their schools. As a principal completes a CFSQ, he reveals what is important to him as he interacts with the school community, especially with teachers. In essence it becomes a revelation of personal intent rather than evidence of actual behavior.

The following sections address the self-rating of each principal and a comparison of those ratings with the overall teacher ratings discussed in previous sections.

Principal A Self-Rating and Comparison

According to the profile revealed by his self-rating, Principal A is a Responder. His percentile rankings in the dimensions of Social/Informal, Trust in Others, and Day-to-Day were extremely high, 97, 99, and 85, respectively. Conversely, his percentile ratings in the dimensions of Formal/Meaningful, Administrative Efficiency, and Vision and Planning were extremely low, 28, 9, and 26, respectively. These scores illustrate an overall pattern of behavior that indicates an extreme tendency toward behaviors that are classically responsive rather than proactive.

A very high score in Social/Informal (97), along with a low score in Formal/Meaningful (28), indicates that the principal perceives his interactions with teachers as almost entirely friendly, conversational, and concerned with feelings and perceptions, with an underlying goal of gaining acceptance. This is contrary to the perceptions of teachers illustrated in the teacher survey profile where scores in these dimensions were 74 and 76, respectively. These ratings indicate that teachers perceive that the principal not only engages in conversations that are friendly and caring, but also engages in conversations that provide support and direction while encouraging improved teaching and learning.

Principal A's self ratings of a percentile score of 99 in Trust in Others, along with a 9 in Administrative Efficiency, indicates a tendency to leave decision-making, allocation of resources, and organization to others, approaching problem-solving and

innovation implementation in a disorganized fashion. This is contrary to teachers' perceptions, which rated him 28 and 71, respectively. These scores reveal a perception that he is very efficient in his approach and deeply engaged in the process of decision-making and resource allocation.

Principal A's self ratings of a percentile rating of 85 in Day-to-Day, along with a rating of 26 in Vision and Planning, indicates a lack of vision, knowledge of programs and innovations, and solutions to problems. Contrasting this perception are the ratings provided by the teacher profile, which are 27 and 74, respectively. These ratings indicate the perception that Principal A knows where the school is headed and has a clear understanding of what the school needs to do to connect current activities to long-range goals.

The comparison of Principal A's self-rating profile to that of his teachers' profile provides a dramatic contrast (See Figure 15). The profiles are diametrically opposite and a comparison poses an interesting challenge to the researcher. Further study is merited to try to understand how the perceptions of a principal and his teachers can be so different. The fact that the principal has been in service to the school in an administrative capacity, either as the principal or as an assistant principal, for 14 of the last 16 years may shed light on how the teachers feel the school has progressed over the course of his tenure. In the meantime, the principal may feel so comfortable in his position that he sees himself as able to step back and allow the progress of the school to move forward without his constant guidance or supervision.

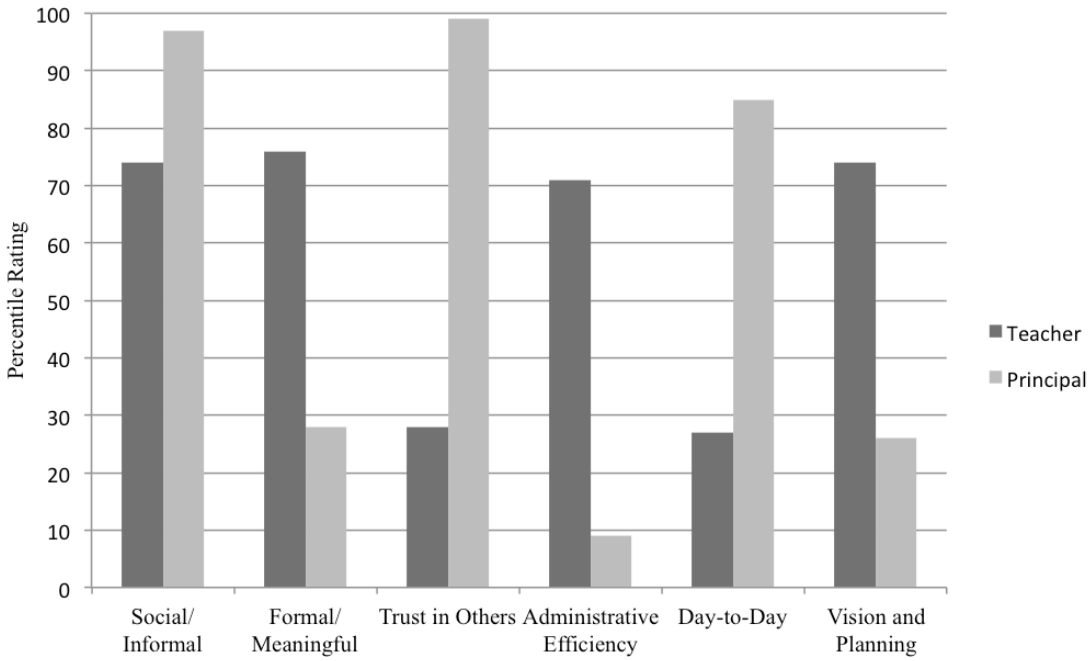

Figure 15. Comparison of Teacher Ratings and Principal Self-Rating, School A.

Principal B Self-Rating and Comparison

According to the profile revealed by his self-rating, Principal B is a Manager. His scores in Formal/Meaningful, Trust in Others, Administrative Efficiency, and Vision and Planning were 56, 66, 50, and 42, respectively. He rated himself extremely low in Social/Informal (16) and very high in Day-to-Day (84). His classification value is -0.9, placing him on the lower end of the Manager range.

Principal B rated himself lower than did his teachers in the Concern for People cluster. Ratings of 16 in Social/Informal and 56 in Formal/Meaningful indicate that the principal perceives his interactions with teachers as professional with little interaction that is solely personal or friendly. This does not mean that he does not care for his teachers. Rather, he sees himself as dealing with teacher concerns in a way that is personally meaningful. Teachers, on the other hand, rated him 44 in Social/Informal and

70 in Formal/Meaningful. The collective perception is that Principal B is more involved in both dimensions than he considers himself.

In the clusters of Organizational Efficiency and Strategic Sense, a contrast exists between the Principal B's self-rating and the teachers' ratings. Within the Organizational Efficiency cluster, ratings of 66 in Trust in Others and 50 in Administrative Efficiency indicate that the principal relies on both responsive behaviors toward the situations that face him and initiation of actions regarding the current innovation. In contrast to this, his teachers rated him 35 in Trust in Others and 72 in Administrative Efficiency indicating a perception that he is much more involved in establishing clear procedures and protocols that provide the opportunity for more effective and efficient use of time and resources.

Within the Strategic Sense cluster, ratings of 85 in Day-to-Day and 42 in Vision and Planning indicate that Principal B perceives himself as more focused on what lies directly in front of him and less on activities related to long-term goals and plans. In comparison, his teachers rated him 32 in Day-to-Day and 78 in Vision and Planning, indicating their perception that he is very knowledgeable about teaching and learning and accomplishes daily tasks with the long-range vision of the school in mind.

A comparison of Principal B's self-rating and his teachers' ratings reveal an interesting contrast (See Figure 16). The principal rates his behaviors as those of a Manager while his teachers perceive them as those of an Initiator. This school has become a model for teacher collaboration and improved student achievement. Parent involvement through a School Community Council (SCC) has also increased. The

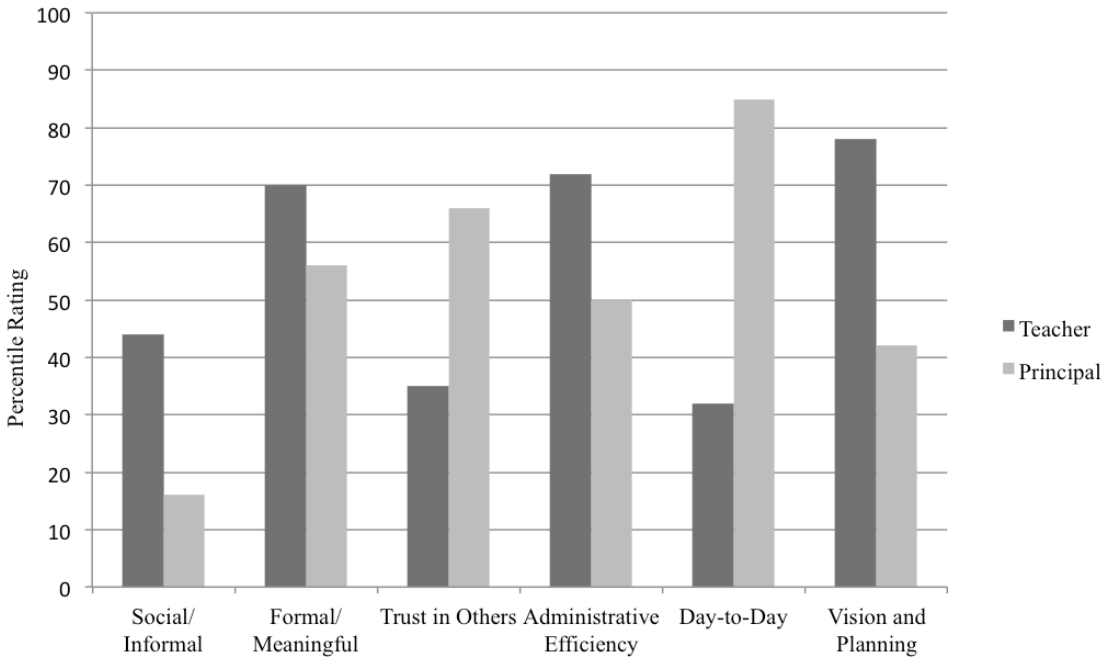

Figure 16. Comparison of Teacher Ratings and Principal Self-Rating, School B.

principal may view himself as an overseer to this work while teachers may be responding to what they perceives high involvement on his part in moving the work of the school forward.

Principal C Self-Rating and Comparison

According to the profile revealed by his self-rating, Principal C is a Manager. His scores in Social/Informal, Formal Meaningful, Trust in Others, Administrative Efficiency, and Vision and Planning were 62, 75, 81, 79, and 84. His score in Day-to-Day was extremely low at 19.

Principal C rated himself quite similarly to his teachers in Concern for People cluster (See Figure 17). The ratings indicate an agreement on perceptions related to the interactions, formal and informal, between the principal and his teachers. Higher scores

in the Formal/Meaningful dimension for the principal and teachers (76, 75) indicate a

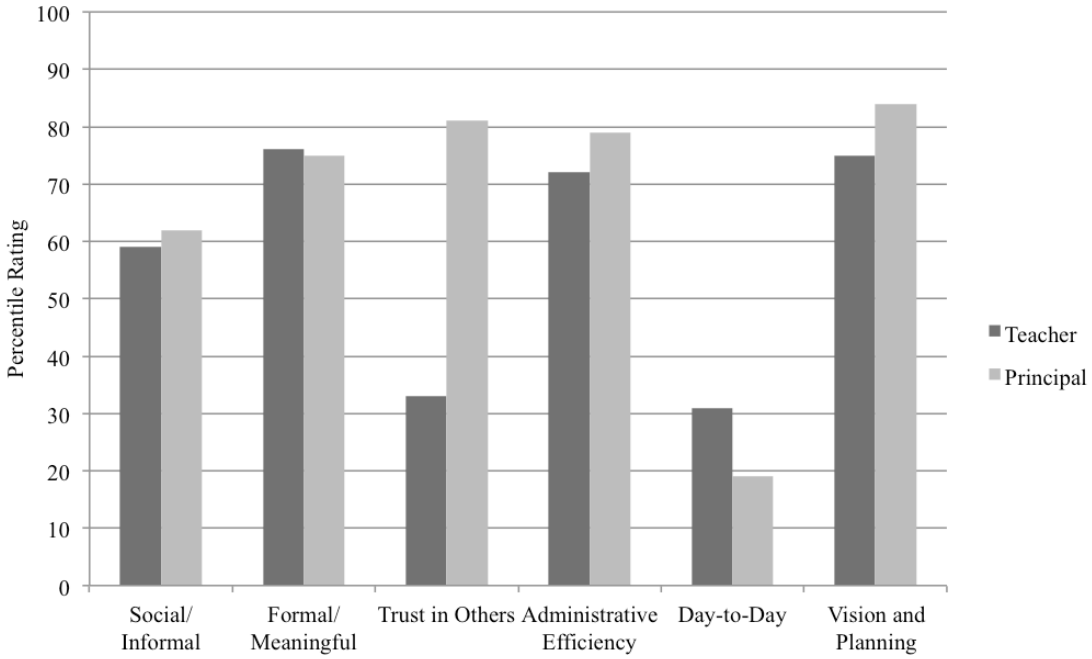

Figure 17. Comparison of Teacher Ratings and Principal Self-Rating, School C.

consensus that conversations in the school are productive, supportive, task-oriented, and focused on the long-range plans of the school.

Also in agreement were the scores related to Administrative Efficiency (72, 79) in the Organizational Efficiency cluster and for Vision and Planning (75, 84) in the Strategic Sense cluster. This agreement indicates that Principal C and his teachers feel that the operation of the school promotes strong organization, procedural clarity, and critical support, which allows the school to move forward efficiently in pursuit of its vision and goals. The scores indicate a perception that the principal has a knowledge of teaching and curriculum and maintains a clear vision of what is necessary to connect day-to-day activities to the long-range goal of the school.

The two dimensions in which there was less agreement are in the Trust in Others dimension in the Organizational Efficiency cluster and the Day-to-Day dimension in the Strategic Sense cluster. The difference in the former dimension was the most dramatic. Teacher ratings were 33, while Principal C's rating was 81, meaning teachers perceive him as highly organized, decisive, and effective in making decisions, while he does not perceive himself in this way. This difference may indicate that this principal has moved the school in the direction of more self-determination. He may rely more on teachers to help in problem identification, resource allocation, and decision-making.

Principal D Self-Rating and Comparison

According to the profile revealed by his self-rating, Principal D is a Manager. His scores in ratings in Social/Informal, Formal/Meaningful, Administrative Efficiency, and Vision and Planning were high at 87, 75, 71, and 72. His scores in Trust in Others and Day-to-Day were low at 21 and 26. His profile resembles that of an Initiator and he might have been classified as an Initiator if he had rated himself slightly higher in the first grouping or slightly lower in the second grouping. His classification value was 1.5, right at the top of the Manager classification range, which is -1.5 to 1.5.

Principal D came the closest of all ten principals to matching the profile indicated by his teacher's ratings (See Figure 18). While the ratings of teachers and the principal were quite different in Social/Informal (50, 87), all others were within ten points and revealed a similar profile. This similarity indicates a consistency in the perceptions of how the principal is leading the school. It is also interesting to note that Principal D's classification function score (1.5) was nearly identical to his teachers' average

classification function score (1.3) and was only one of two principals whose classification function score exceeded that of his teachers.

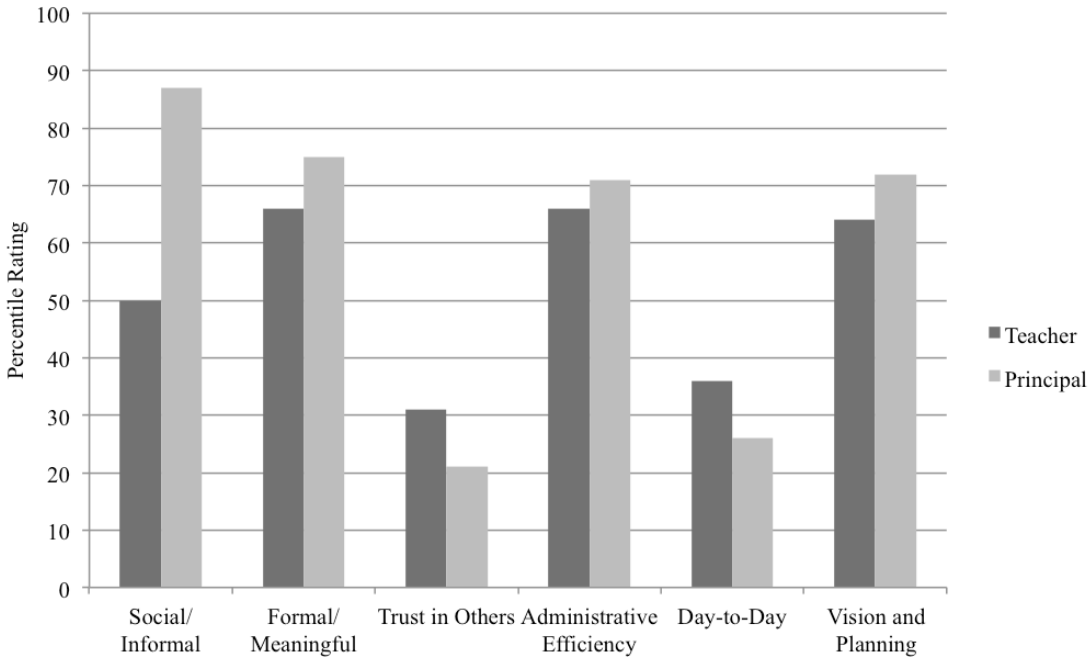

Figure 18. Comparison of Teacher Ratings and Principal Self-Rating, School D.

Principal E Self-Rating and Comparison

According to the profile revealed by his self-rating, Principal E is a Manager. His scores in Social/Informal, Formal/Meaningful, Administrative Efficiency, and Vision and Planning were 81, 66, 60, and 72, respectively. Trust in Others and Day-to-Day were low at 28 and 33, respectively.

Principal E was one of four principals whose ratings agreed with that of his teachers in Social/Informal, Formal/Meaningful, Administrative Efficiency, and Vision and Planning, 68, 62, 64, and 57, respectively, compared to 81, 66, 60, and 72 from his teachers (See Figure 19). Also consistent were lower scores in Trust in Others and Day-

to-Day. Overall, principal and teacher ratings were consistent. Principal E is one of two principals whose classification function score (1.1) was higher than that of his teachers (0.4).

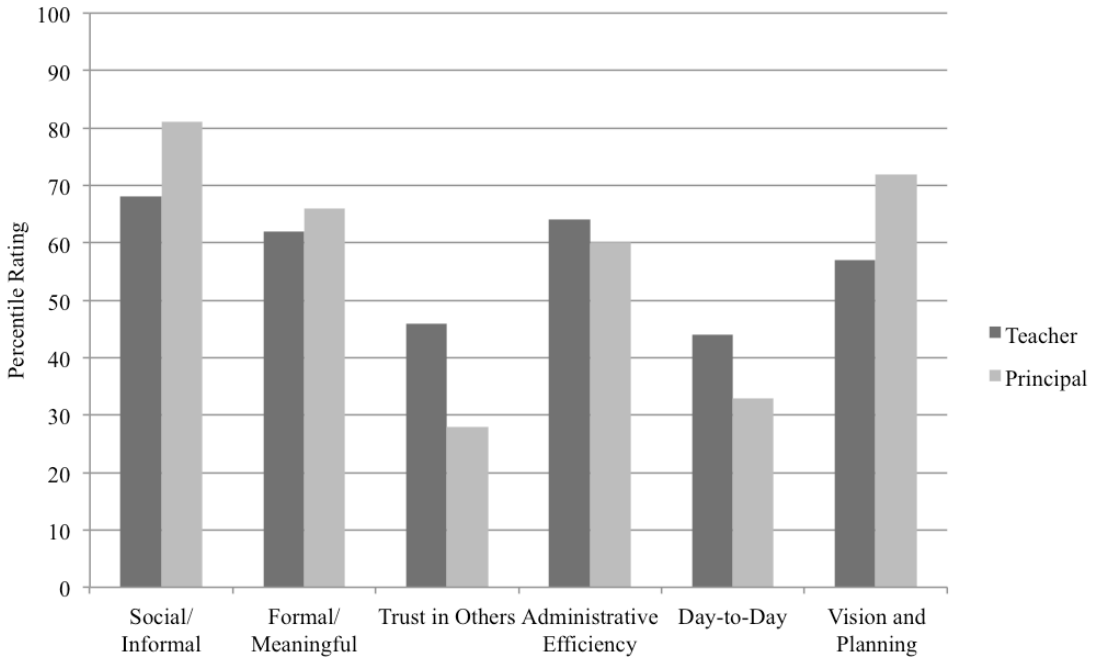

Figure 19. Comparison of Teacher Ratings and Principal Self-Rating, School E.

Principal F Self-Rating and Comparison

According to the profile revealed by his self-rating, Principal F is a Manager. His ratings in Social/Informal, Trust in Others, and Day-to-Day were 62, 77, and 50, respectively, compared to teacher scores of 63, 46, and 44. His scores in Formal/Meaningful, Administrative Efficiency, and Vision and Planning were lower at 36, 31, and 26, respectively, compared to teacher scores of 65, 57, and 57.

Although Principal F was one of four whose ratings agreed with his teachers, his scores were at opposite ends of the Manager range (See Figure 20). While similar in

Social/Informal and Day-to-Day, his scores were farther apart in the remaining four dimensions. There is less congruence in the scores than would be expected. This may be due to the fact that he is a new principal at the school.

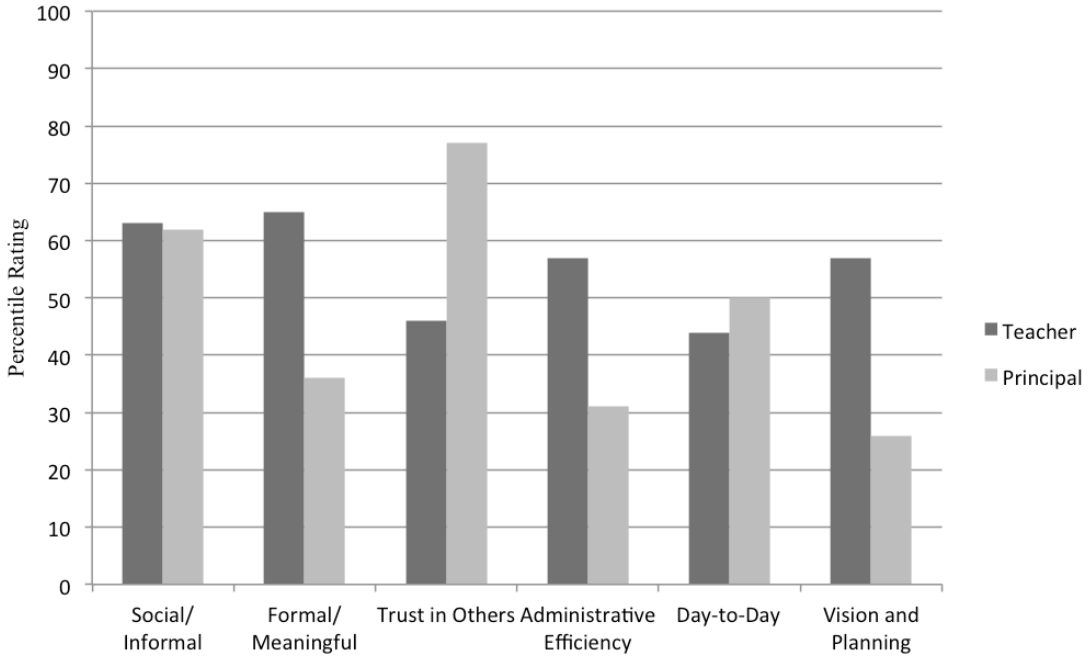

Figure 20. Comparison of Teacher Ratings and Principal Self-Rating, School F.

Principal G Self-Rating and Comparison

According to the profile revealed by his self-rating, Principal G is a Manager. His ratings in Social/Informal, Trust in Others, Administrative Efficiency, and Day-to-Day were 43, 49, 40, and 57, respectively. His ratings in Formal/Meaningful and Vision and Planning were lower at 36 and 26, respectively.

Principal G is one of four principals whose teachers rated him the same style as his self-rating (See Figure 21). His teachers' scores placed him higher in the Manager range.

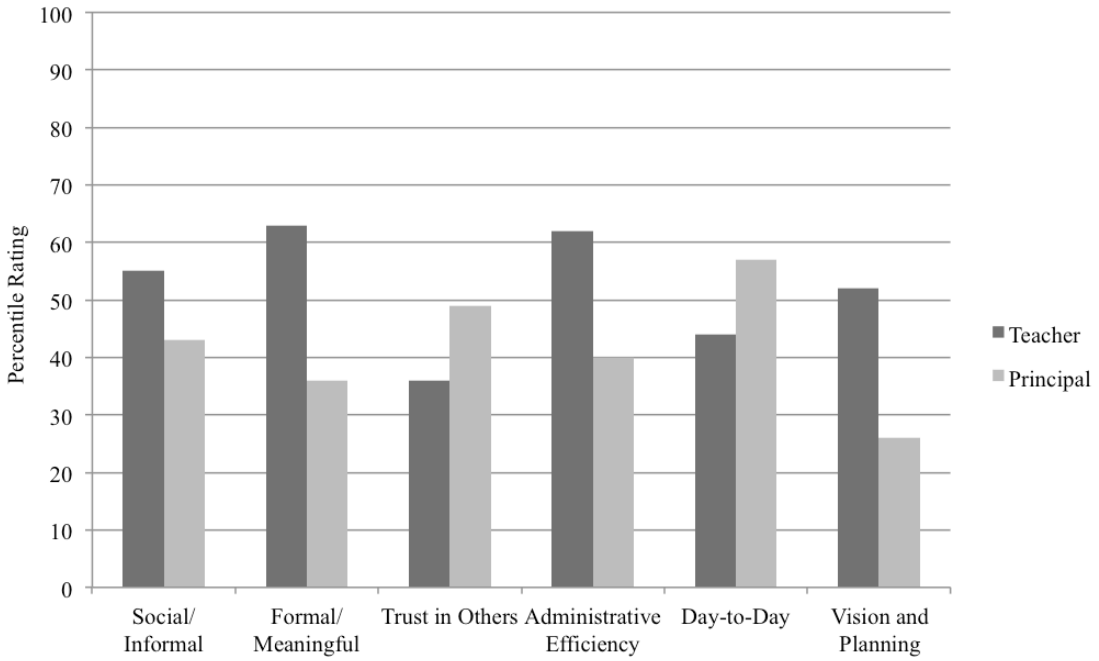

Figure 21. Comparison of Teacher Ratings and Principal Self-Rating, School G.

Principal H Self-Rating and Comparison

According to the profile revealed by his self-rating, Principal H is a Manager. His ratings in Social/Informal, Formal/Meaningful, Trust in Others, Administrative Efficiency, and Vision and Planning were 62, 56, 42, 40, and 42, respectively. His rating in Day-to-Day was higher at 76.

Principal H is one of four principals whose teachers rated him the same style as his self-rating (See Figure 22). His teachers' scores placed him higher in the Manager range.

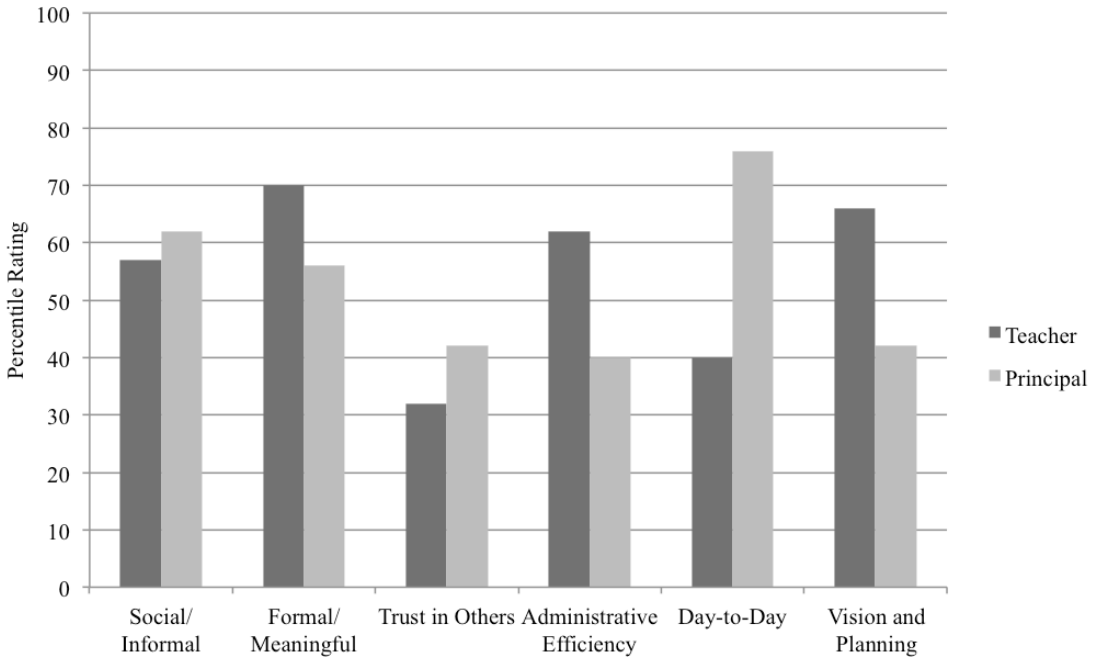

Figure 22. Comparison of Teacher Ratings and Principal Self-Rating, School H.

Principal I Self-Rating and Comparison

According to the profile revealed by his self-rating, Principal I is a Responder. His scores in Social/Informal, Trust in Others, and Day-to-Day were high at 52, 71, and 76 respectively. His ratings in Formal/Meaningful, Administrative Efficiency, and Vision and Planning were low at 36, and 19, respectively. His classification value was -1.6.

What is interesting about this comparison is that it is reminiscent of the discussion of Principal A, who rated himself as a Responder while his teachers rated him an Initiator (See Figure 23). If one more teacher had rated Principal I as an Initiator his style designations would have been the same as Principal A. The differences in scores in each dimension, while not as dramatic as Principal A, would have been equally puzzling. Principal I is the longest tenured principal in the district middle schools and had been at his school since it was built in 2003.

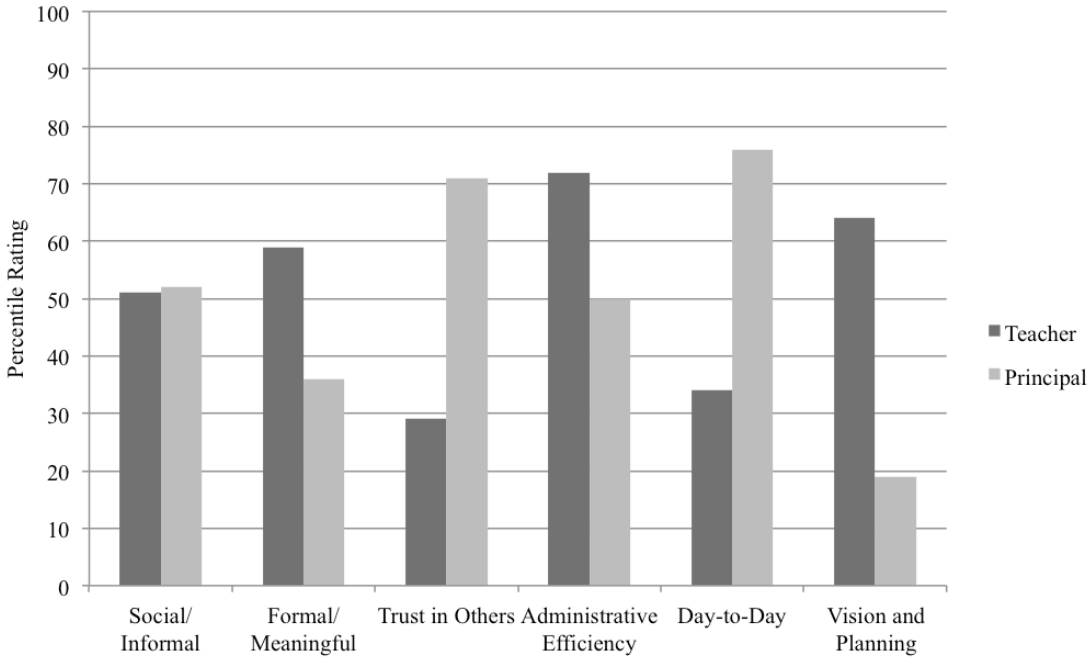

Figure 23 . Comparison of Teacher Ratings and Principal Self-Rating, School I.

Principal J Self-Rating and Comparison

According to the profile revealed by his self-rating, Principal J is a Manager. His ratings in Social/Informal, Administrative Efficiency, Day-to-Day, and Vision and Planning were 43, 50, 69, and 53, respectively. His ratings in Formal/Meaningful and Trust in Others were higher at 75 and 71, respectively.

Principal J's teachers were decidedly split in their assessment of his style with approximately one-third of them rating him in each of the three categories (See Figure 24). While their scores in the six categories were similar in three (Social/Informal, Administrative Efficiency, and Vision and Planning, they were also significantly different in the other three (Formal/Meaningful, Trust in Others, and Day-to-Day). Using the CFS-CR procedure, Principal J was rate as Manager, which likely places him more accurately into a specific style.

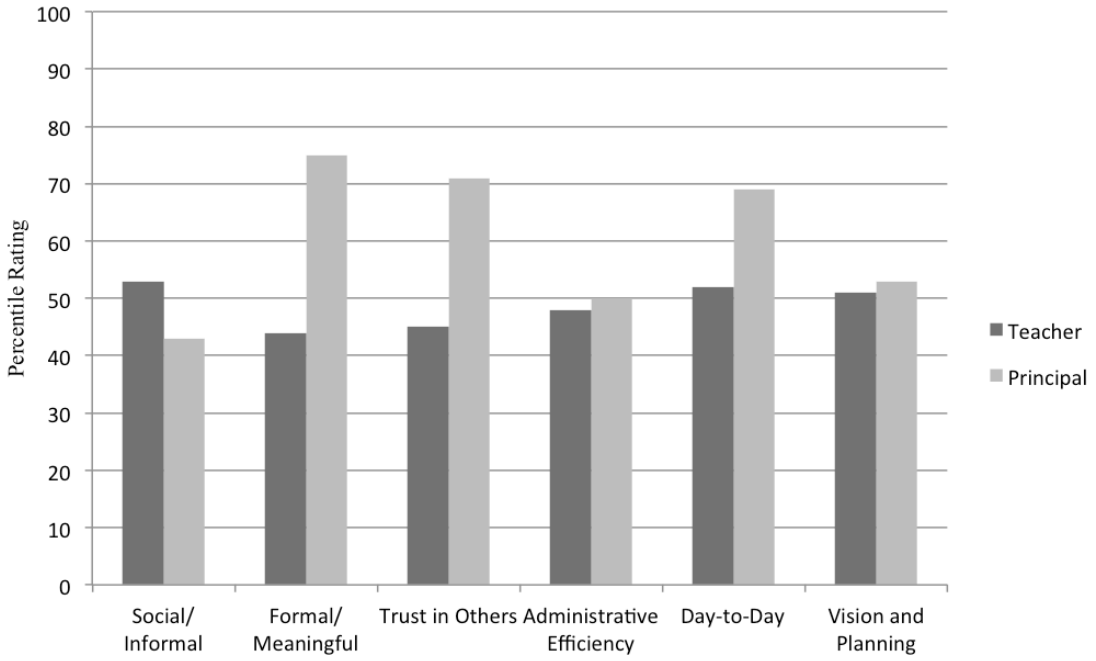

Figure 24. Comparison of Teacher Ratings and Principal Self-Rating, School J.

Summary

As noted in previous sections, their teachers rated Principals A, B, C, and D as Initiators, Principals E, F, G, H, and I as Managers, and Principal J as a Responder. Results of the CFSQ completed by each principal revealed that 8 of the 10 principals rated themselves as Managers, two as Responders. No principal rated himself as an Initiator (See Exhibit A). Only 4 of 10 schools, E, F, G, and H, found agreement between teacher ratings and principal self-ratings.

Research Question 3

3. What is the relationship between middle school principal's CFS and student achievement?

In the two previous sections, discussions dealt strictly with the data collected from teachers and principals regarding the CFS of the ten subject principals. This section

addresses the third study question, which addresses the relationships of principal CFS and student achievement.

When considering the impact of an independent variable with two or more levels, in this case principals identified as one of three CFS styles, on a dependent variable (student achievement), Analysis of Variance (ANOVA) is an appropriate statistical procedure. In ANOVA, hypotheses are formulated about the means of the groups on the dependent variable. Changes in the dependent variable are presumed to be the results of changes in the independent variable (Hinkle, Wiersma, and Jurs, 2003).

Using ANOVA allows for a comparison of mean variations related to two groups: the subjects within a group (school) receiving the same treatment (principal with a certain style); and, all subjects who are randomly assigned to groups and who receive treatments. These components of comparison, known as *with-in groups* variation and *between groups* variation are used to test the null hypothesis.

Underlying assumptions relevant to ANOVA include, 1) the observations are random and independent samples from the population; 2) the distributions of the populations from which the samples are selected are normal; and 3) the variances of the distributions in the populations are equal (Hinkle, Wiersma, and Jurs, 2003). Such are the assumptions in this study. The null hypothesis for this study was that the mean performance across the ten middle schools in the target district is the same regardless of the CFS of the principal.

ANOVA was computed to test this hypothesis at the .05 level of significance. Values were generated for the three areas assessed by CRT tests in the state: science,

language arts, and math. ANOVA uses two calculations of the mean variances to test the null hypothesis. The sum of squares of the mean deviations for each component is calculated first. This serves as the measure of central tendency in the least squares sense (Hinkle, Wiersma, and Jurs, 2003). Then, degrees of freedom are calculated. The formula for degrees of freedom for between-group variance is K-1 where K is the number of groups (schools) in the study. The formula for within-groups variance is N-K, where N is the total number of observations (students with CRT scores).

Using Statistical Package for the Social Sciences (SPSS) software, summary tables for ANOVA were generated for each set of CRT data (See Table 5). ANOVA revealed the F value for each set of data. This is the value derived when the sums of squares are divided by the degrees of freedom for both with-in groups and between-groups variations. This provides a mean square for each component. The mean square of between groups variation is then divided by the mean square of the within-groups

		Sum of Squares	df	Mean Square	F	Sig.
Science	Between Groups	16014.178	9	1779.353	18.426	.000
	Within Groups	346961.562	3593	96.566		
	Total	362975.741	3602			
Language Arts	Between Groups	10095.815	9	1121.757	13.381	.000
	Within Groups	301219.304	3593	83.835		
	Total	311315.119	3602			
Math	Between Groups	20000.537	9	2222.282	24.384	.000
	Within Groups	302933.190	3324	91.135		
	Total	322933.726	3333			

Table 5. ANOVA, Grade 8 Scaled Score for Three Subjects

variation to produce an F ratio, named after R. A. Fisher. The test statistics (F ratios) for science, language arts, and math were 18.426, 13.381, and 24.384, respectively.

Using a table of critical F values, a critical value for the parameters of these data sets was determined at the .05 level of significance. For these data sets:

$F(9, 3593)=1.88$

Each of the three F values exceeded the critical value. This was confirmed in the ANOVA summary tables, which produced significance levels less than .05.

Because the critical F value was exceeded in each of the ANOVA, the null hypothesis was rejected and the assumption that significant differences existed between at least one pair of schools was accepted. When the result of ANOVA leads to rejection of the null hypothesis, post hoc multiple-comparison tests are conducted to determine which means differ significantly. For that reason, post hoc multiple comparison tests were conducted to determine whether the differences were between pairs of means or between more complex combinations of means (Hinkle, Wiersma, and Jurs, 2003).

Post Hoc Multiple-Comparison Tests

Following the ANOVA and the rejection of the null hypothesis, two other tests were conducted to check for equality of variances and equality of means. The first, a test of homogeneity of variances using the Levene's statistic, revealed significance values less than .05 for all three data sets (See Table 6) This led to a rejection of the assumption that equal variances existed.

	Levene Statistic	df1	df2	Sig.
Science	7.184	9	3593	.000
Language Arts	2.885	9	3593	.002
Math	3.601	9	3324	.000

Table 6. Test of Homogeneity, Grade 8 Scaled Score

The second, a test of the equality of means using the Welch statistic (See Table 7), revealed significance scores less than .05 for all three data sets, leading to a rejection of the assumption of equality of means. For this study, two additional post hoc tests were chosen for potential use. Had the variance tests shown equal variance, Tukey's Honestly Significant Difference (HSD) test would have been the test of choice. However, due to unequal variances, the Tamhane T2 procedure was selected and utilized. Tests such as this are used to carry out pairwise comparisons of the group means while controlling for the familywise error (FWE) rate. It allows us to compare means using one test versus conducting 45 individual t-tests, which only guarantees not to exceed Alpha for each individual comparison. Using a multiple-comparison test allows us to compare the family of means while not exceeding Alpha.

		Statistic[a]	df1	df2	Sig.
Science	Welch	20.782	9	1345.070	.000
Language Arts	Welch	14.650	9	1349.496	.000
Math	Welch	21.403	9	1241.003	.000

Table 7. Robust Tests of Equality of Means, Grade 8 Scaled Score
Note: Asymptotically F distributed.

Results of the Tamhane T2 Test

The Tamhane T2 multiple comparison method revealed a number of statistically significant differences between the means of specific schools (See Exhibit B). When schools were compared pairwise, a positive value indicated a mean significantly higher than the school to which it was being compared. A negative value indicated the opposite case. The following sections will address those differences, by style groupings, in the three test subsets of language arts, math, and science.

Language Arts Results

School	# Overall Comparisons		# Significant Comparisons	
	Positive	Negative	Positive	Negative
A	2	7	0	2
B	7	2	2	0
C	6	3	1	0
D	3	6	1	2
E	5	4	1	1
F	8	1	4	0
G	4	5	1	1
H	0	9	0	7
I	9	0	6	0
J	1	8	0	3

Table 8. Number of Positive and Negative Mean Comparisons: Language Arts

Values generated by the Tamhane T2 test for language arts are found in Exhibit B. Reviewing overall differences revealed School A had seven negative and two positive mean comparisons, while School B had a reversal of that comparison (See Table 8). School C had 6 positive and 3 negative comparisons, while School D experienced the opposite. Among those comparisons, however, Initiator-led schools had no more than three significant differences among their means.

The most significant differences were found among the Manager-led schools. The overall comparisons included School E with five positive and four negative; school F with eight positive and one negative; School G with four positive and 5 negative; School H with nine negative; and, School I with nine positive. Schools E and F each had two significant differences with one positive and one negative, while School F had four significant differences with four positive and 1 negative. Schools H and I exhibited the most dramatic differences as School H had seven significant negative comparisons, while School I had six significant positive comparisons.

School J, the only Responder-led school, had one positive and eight negative comparisons, three of which were significant negative comparisons.

Computing the mean average for each style grouping provided another way to look at how they compared to one another (See Table 9). The overall mean for the group in language arts was 173.95. Based on this analysis, Manager-led schools had higher mean averages in language arts than Initiator-led by .46 percent and Responder-led by 2.5 percent.

School	LA Mean	Mean Average	Style
A	172.97		
B	174.78		
C	174.45		
D	173.32		
		173.88	Initiator
E	174.41		
F	175.73		
G	173.96		
H	170.96		
I	176.66		
		174.34	Manager
J	171.84		
		171.84	Responder

Table 9. Mean Averages of Language Arts by Style Type

A plot graph of means also provided information that was used to make assumptions about each style group. Plotting the individual school means (See Figure 25) showed how they varied from one another and indicated the range of averages from school to school, considering them by CF Style. Initiator-led schools showed less variability, ranging 1.81 percent from 173.32 to 174.78. Manager-led schools displayed greater fluctuation, ranging from 170.96 to 176.66, a range of 5.7 percent. With only one Responder, the comparison was made relative to individual means, where he was second lowest at 171.84.

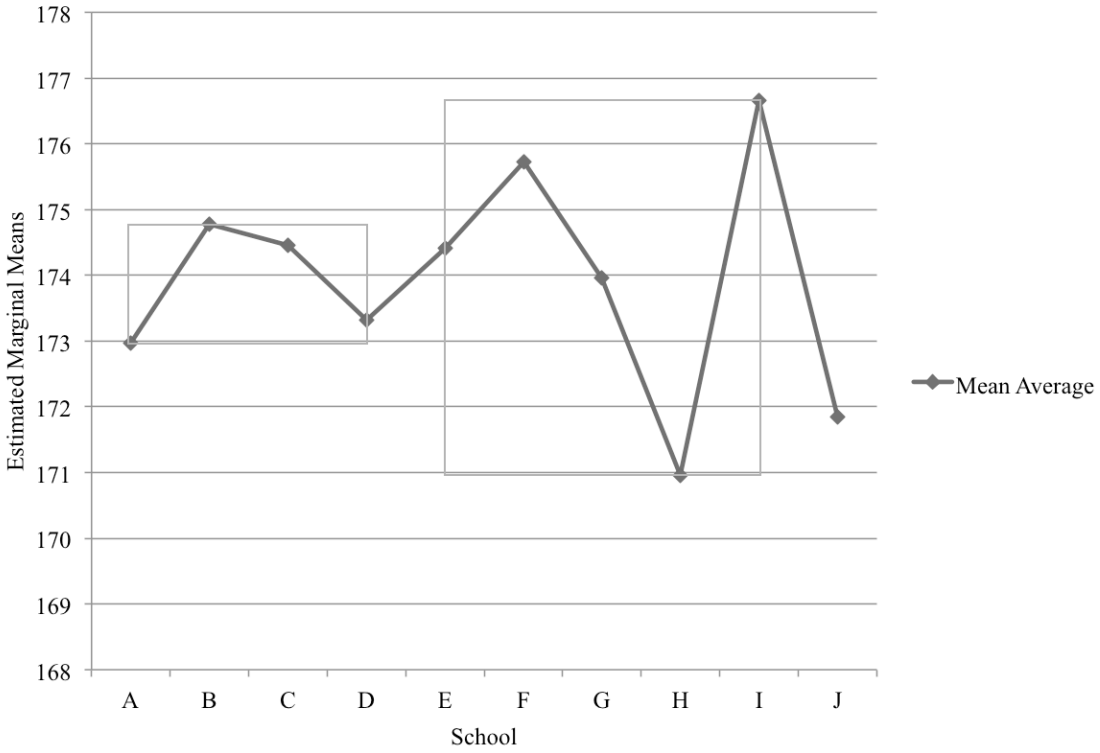

Figure 25. Mean Average Comparison Plot Graph: Language Arts

Math Results

Reviewing overall differences revealed School A had six negative and three positive mean comparisons, while School B had a reversal of that comparison (See Table 10). School C had one positive and eight negative comparisons, while School D had four positive and five negative. The Initiator-led schools had from four to six significant differences among their means.

School	# Overall Comparisons		# Significant Comparisons	
	Positive	Negative	Positive	Negative
A	3	6	1	3
B	6	3	2	2
C	1	8	0	6
D	4	5	2	3
E	9	0	8	0
F	7	2	5	1
G	5	4	2	2
H	2	7	0	3
I	8	1	7	0
J	0	9	0	7

Table 10. Number of Positive and Negative Mean Comparisons: Math

The most significant differences were found among the Manager-led schools. The overall comparisons included School E with nine positive and zero negative; school F with seven positive and two negative; School G with five positive and four negative; School H with two positive and seven negative; and, School I with eight positive and one negative. A large number of significant positive comparisons were found in the Manager-led schools. Schools E, F, and I had eight, five, and seven, respectively. School G had four significant differences with two positive and two negative. Schools H had three significant negative comparisons.

School J, the only Responder-led school, had zero positive and nine negative comparisons, seven of which were significant negative comparisons.

Computing the mean average for each style grouping provided another way to look at how they compared to one another (See Table 11). The overall mean for the group in math was 168.74.

School	LA Mean	Mean Average	Style
A	167.70		
B	169.06		
C	165.17		
D	168.09		
		167.51	Initiator
E	173.41		
F	170.68		
G	168.62		
H	167.01		
I	171.50		
		170.24	Manager
J	164.33		
		164.33	Responder

Table 11. Mean Averages of Math by Style Type

Manager-led schools in this district had a higher mean average in math than Initiator-led by 2.73 percent and Responder-led by 5.91 percent.

A plot graph of means also provided information that was used to make assumptions about each style group. Plotting the individual school means (See Figure 26) showed how they varied from one another and indicated the range of averages from school to school, considering them by CF Style. Initiator-led schools showed less

variability, ranging 3.89 percent from 165.17 to 169.06. Manager-led schools displayed greater fluctuation, ranging from 167.01 to 173.41, a range of 6.4 percent. With only one Responder, the comparison was made relative to individual means, where he was lowest at 164.33.

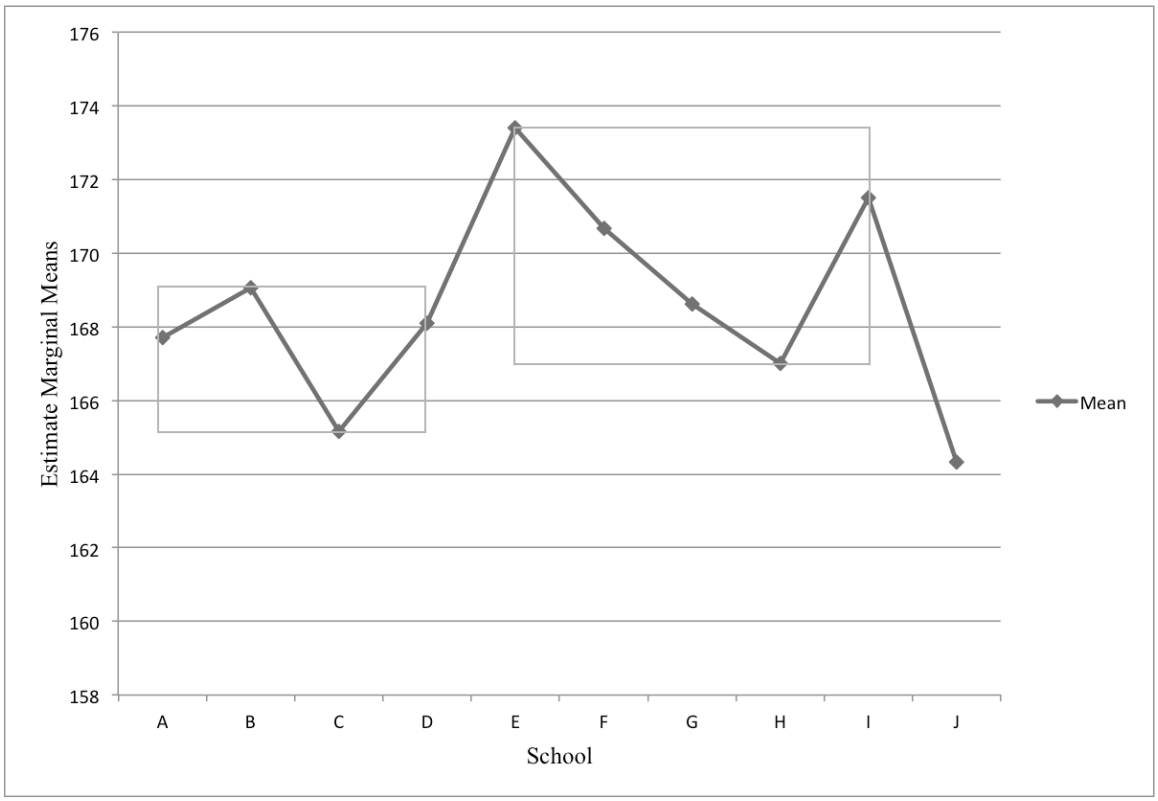

Figure 26. Mean Average Comparison Plot Graph: Math

Science Results

Reviewing overall differences revealed School A had seven negative and two positive mean comparisons, while School B had three positive and six negative (See Table 12). School C had one positive and eight negative comparisons, while School D seven positive and two negative. The Initiator-led schools had two or three significant differences among their means.

School	# Overall Comparisons		# Significant Comparisons	
	Positive	Negative	Positive	Negative
A	2	7	0	2
B	3	6	0	2
C	1	8	0	2
D	7	2	1	2
E	5	4	1	2
F	9	0	8	0
G	6	3	1	1
H	0	9	0	5
I	8	1	7	0
J	4	5	0	2

Table 12. Number of Positive and Negative Mean Comparisons: Science

The most significant differences were found among the Manager-led schools. The overall comparisons included School E with five positive and four negative; school F with nine positive and zero negative; School G with six positive and three negative; School H with zero positive and nine negative; and, School I with eight positive and one negative. Schools F and I each had a large number of significant differences with eight and seven, respectively, all of which were positive. School E had three significant differences with one positive and two negative. School G had two significant differences with one positive and one negative, while School H had five significant differences with all five being negative.

School J, the only Responder-led school, had four positive and five negative comparisons, two of which were significant negative comparisons.

Computing the mean average for each style grouping provided another way to look at how they compared to one another (See Table 13). The overall mean for the group in science was 168.23.

Manager-led schools in this district had a higher mean average in science than Initiator-led by 1.63 percent and Responder-led by 1.6 percent. The mean averages in science were less variable than in math and language arts.

School	LA Mean	Mean Average	Style
A	166.79		
B	166.97		
C	166.60		
D	168.70		
		167.27	Initiator
E	167.77		
F	172.43		
G	168.46		
H	165.12		
I	170.73		
		168.90	Manager
J	167.30		
		167.30	Responder

Table 13. Mean Averages of Science by Style Type

A plot graph of means also provided information that was used to make assumptions about each style group. Plotting the individual school means (See Figure 27) showed how they varied from one another and indicated the range of averages from school to school, considering them by CF Style. Initiator-led schools show less variability, ranging 2.1 percent from 166.60 to 168.70. Manager-led schools displayed greater fluctuation, ranging from 165.12 to 172.43, a range of 7.31 percent, the largest range in all three sub-test areas. With only one Responder, the comparison was made relative to individual means, where he was in the middle at 167.30.

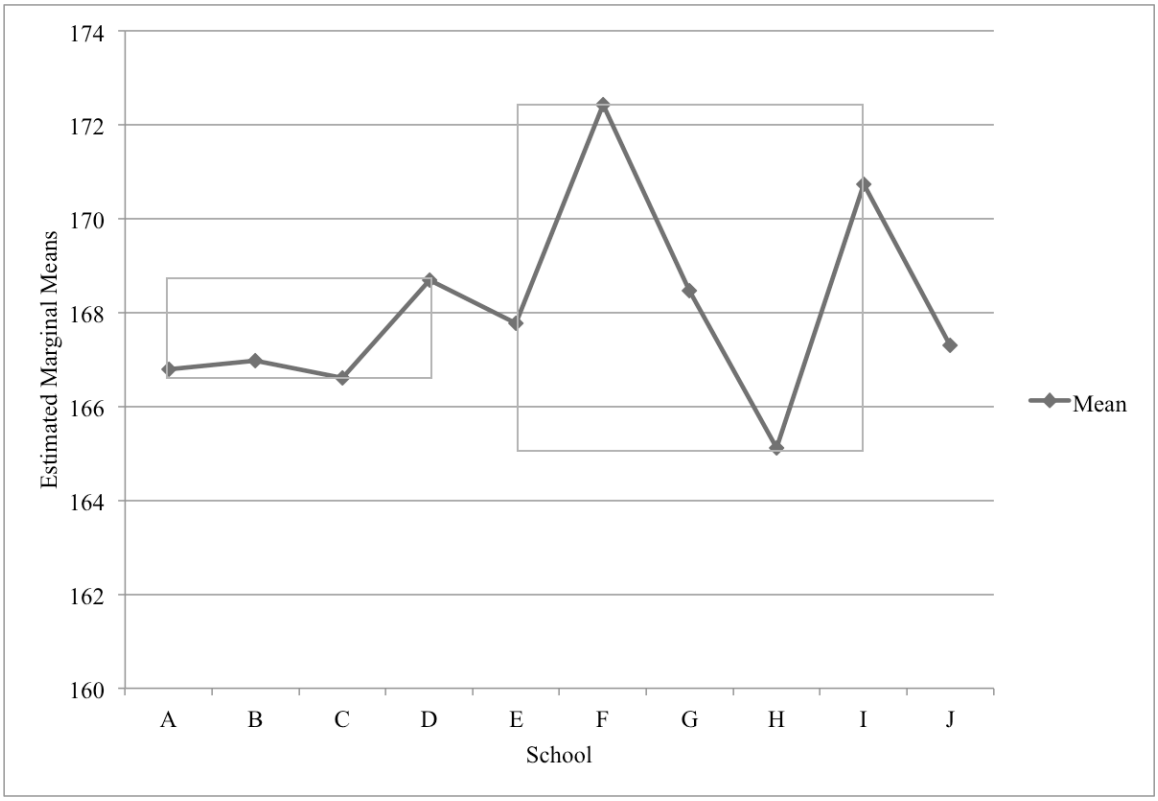

Figure 27. Mean Average Comparison Plot Graph: Science

Progress Score Comparisons

In order to view this information more longitudinally, average school-wide progress scores for each sub-test were compared in order to identify trends at each school. Progress scores are determined by establishing a value for students who show an increase, decline or stasis in test scores from one year to the next. These scores became available in the state in 2006, providing anywhere from two to five years of comparative data prior to principal assignments at their respective schools at all but three sites. Principals A, B, and I began service at their schools prior to 2006, providing no data for such a comparison. However, trends were still observed during their tenure at their respective schools (See Exhibit C). When reading the figures it is important to note that the math test was changed in 2009, causing a temporary, but significant dip in progress scores at each school. The dip and subsequent increase in scores the following year was consistent across all schools.

Initiator-led schools where principals began their tenure before 2006 (A and B), showed steady increases in their progress scores in language arts and math, with the exception of the year noted above. Science scores revealed a flatter line or, in the case of School A, an up trend followed by a downtrend.

Schools C and D, where principals began their tenure after 2006, exhibited flat or slight trending before their arrival, but sharp increases in the years after they began leading the school. School C showed the most dramatic increase across all three sub-tests. School D showed increase in progress in language arts and math, but not in science.

Four of five Manager principals began their tenure after 2006. School I, the only Manager-led school where the principal started before 2006, showed up and down trends ending on up trends in all but science. Schools E and G showed down trends in each sub-test after their arrival. Both came up again to levels attained prior to their arrival, in language arts and math, but not in science. Schools F and H, which received new principals in 20011, experienced a decrease in progress scores in language arts and math. School F's score fell in science while School H's score was about the same.

School J, the only Responder-led school, experienced decreases in all three sub-tests and remained relatively flat until the principal's last year when it experienced an increase in all three areas.

Progress Scores and Demographics

One last piece of information considered for this study was the demographics of the ten middle schools (See Exhibit D). Among the Initiator-led schools, B and C were the most highly impacted in the four categories of percent low socio-economic status (SES), percent minority, percent English Language Deficient (ELD), and percent Special Education (SPED) with School C ranking highest in three of four categories (32.6% minority, 20.8% ELD, and 52.7% low SES). School B ranked second in percent minority (26.3) and percent low SES (47.6) and third in percent ELD (8.2) and percent SPED (11.1).

Among Manager-led schools, School G was second highest in the district in percent ELD (13.7) and third in both percent low SES (39.2) and percent minority (25.0). The Responder-led school was second in percent SPED at 11.2%.

Schools F and I were least impacted by these factors with percentages, respectively, in the four categories of 3.6% and 4.0% minority, 11.6% and 10.6% low SES, .8% and .6% ELD, and 6.6% and 5.7% SPED. These schools have consistently scored in the top 5% of schools in the state on CRT tests in math and language arts, limiting their ability to show progress due to already high student achievement.

Noting the demographics of these schools establishes an understanding of the task faced by administrators as they attempt to move their schools through necessary changes to improve student achievement. What may seem easy for schools such as F and I may actually pose a different set of problems faced by schools such as B and C. Taking this into account, it appears that in spite of difficult demographics, schools with Initiator principals were able to promote sustained, consistent progress, while Manager and Responder-led schools promoted growth based on the diversity, or lack thereof, of their demographics.

CHAPTER 5

ANALYSIS OF FINDINGS, IMPLICATIONS, AND CONCLUSIONS

This chapter includes a discussion of the findings presented in Chapter 4 and includes sections related to limitations and implications of the study, recommendations for future research, and conclusions.

Limitations of the Study

There are several limitations that need to be kept in mind when considering findings and possible implications of this study. The university program chosen by the researcher was a distance of 400 miles from his place of residence. Due to the elimination of the degreed program and subsequent deadlines for finishing research studies, the researcher chose to use a purposeful sample of schools within close proximity to his workplace. The researcher works within the target district and is one of the middle school principals within the target population. There can be no assumption that the findings of this study can be generalized to the larger population.

Potential bias also exists where the researcher is a member of the target population and has intimate knowledge of the leadership experiences of the principals who participated in the study. The researcher is aware of the dilemma that familiarity can create related to ethics and confidentiality. Great caution was exhibited to protect the identity of each principal and to act ethically when commenting on principal behaviors and attitudes, limiting comments to observable behaviors while avoiding judgment.

Three of the schools surveyed had lower than expected survey response rates of 37%, 42%, and 44%. Since the response rate for each of the other schools was 59% or better, the principals at the three schools in question may not be as accurately portrayed as principals at the other seven schools. The researcher chose to move forward rather than undertake the arduous task of locating teachers who had begun their summer break.

The study that was replicated used a 3-member panel of individuals who had worked in the district's central office for several years and had a working knowledge of the leadership approach of each principal. Using their knowledge of day-to-day behaviors of each principal and comparing that knowledge to the formal paragraph definitions of the three CF Styles, the panel came to a consensus of each principal's rating. For this study, the CFSQ was used exclusively to determine the CF Style of each principal. This may result in less reliability and less objectivity since the ratings of individual teachers were averaged together to determine the CF Styles of principals.

Design and Description of the Study

The purpose of this study was to explore relationships between principal leadership and student achievement by replicating a study conducted at the elementary school level in an urban city in the northeast United States by Hall, Negroni, and George (2006) using Change Facilitator Style (CFS) (Hall and George, 1999; Hall and Hord, 2011) as the theoretical framework. In the original study, researchers found statistically significant relationships between principal's CFS and student achievement. This study was conducted at the middle school level in a suburban school district in the intermountain west.

The following questions guided this study:

1. How do middle school principals vary in CFS?
2. What is the extent of agreement between teacher ratings of the principal's CFS and the principal's self-rating of CFS?
3. What is the relationship between middle school principals' CFS and student achievement?

These three questions provide the framework for a discussion of the findings.

Ten of eleven middle school principals were invited to participate in this study, representing all but one of the middle school principals in the target district. The researcher is the 11th principal in the target district, and excluded himself from the study in order to reduce bias. All ten principals and their teachers were included in the study and surveyed using the CFSQ.

Each principal was surveyed concerning his or her own Change Facilitator Style (CFS) using the Change Facilitator Style Questionnaire (CFSQ). Also, teachers at each school were given an opportunity to fill out a CFSQ in order to ascertain their assessment of the CFS of their principal. Using the CFSQ data, each principal was designated as one of the three CFS styles (Initiator, Manager, and Responder) identified by Hall and Hord (2011).

In order to quantify the style results for use in the statistical analysis, the researcher developed a formula, which included style constants. These constants, when matched with percentages of teachers who rated their principal as a certain style, provided an overall Change Facilitator Style Composite Rating (CFS-CR). The results of

the CFSQs submitted by teachers and principals provided the basis for answering the first two research questions and, along with the data provided by the CFS-CR, provided the necessary information to answer the third and most important question.

How Do Middle School Principals Vary in CFS?

The findings document that for this set of middle school principals each CFS was represented. According to the results of the CFSQs submitted by teachers at the schools of the 10 subject principals, using the majority rules protocol, four principals were rated as Initiators, five were rated as Managers, and one was rated as a Responder. These data provide documentation of each of the overall CFS being exhibited. The more detailed analyses using the Six Dimensions of CFS documented there was variation among same-style principals.

Within the Initiator style group, the percentages of teachers rating each principal as an Initiator ranged from 51% to 65%. The remainder of their teachers rated them as a Manager. No Initiator principal received Responder ratings from their teachers. Classification function values (CLF), which are derived from a mathematical formula providing a single value for style (Hall and George, 1999), ranged from 1.3 to 1.7. The expected CLF for Initiators is above 1.5, -1.5 to 1.5 for Managers , and below -1.5 for Responders. The CLF for each principal in this study was an average for all teachers submitting a CFSQ. If the CLF was used exclusively, only one principal (1.7) would be rated clearly as an Initiator, two (1.5) would be borderline, and one (1.3) would be rated as a Manager.

Within the Manager style group, the percentages of teachers rating each principal as a Manager ranged from 49% to 65%. CLF ranged from 0.4 to 1.4, all values falling into the Manager range. Each of these principals received ratings in all three styles.

With only one principal rated as a Responder, it was not possible to consider ranges related to percentage of teachers rating him or classification function values. This provides limited opportunity to discuss findings related to Responder principals other than that which has already been discussed in Chapter 4. This seems to be consistent other studies (Hall, et. al, 2006; Lewis, 2011) as Responder principals are scarce. A tentative conclusion based on the prior discussion is that Responder principals are least effective in promoting consistent, sustained progress.

Implications of the CFS-CR Formula

When the CFS-CR formula was inserted into the analysis one significant change occurred. Using the style continuum with style constants of 30 (Responder), 60 (Manager), and 90 (Initiator), with demarcations between the styles at 45 (Responder to Manager) and 75 (Manager to Initiator), percentages of teachers rating their principals in the three styles were entered into the following formula: CFS-CR=30R+60M+90I, where R=% Responder; M=% Manager; and I=% Initiator, entered in decimal form.

The results provided confirmation of the findings related to the Initiators. The CFS-CR scores ranged from 75.3 to 79.5 and fell in the order of highest percentage to the lowest as determined by teacher ratings. All ratings fell within the expected range for Initiators (75-100).

The results also confirmed that each Manager was rated within the expected range for Managers (45-75). The scores ranged from 64.8 to 74.1. These scores, however, did not fall in the order that was provided by teacher percentages; rather, the order was nearly reversed. This was due to the fact that principals who received the lowest percentages of teachers rating them as Managers also received a higher percentage of teachers rating them as Initiators. This finding highlights the value of the CFS-CR formula.

Another finding related to the CFS-CR is related to the lone Responder principal. Even though he was rated by the highest percentage of teachers as a Responder, the percentages were close enough to change his assigned style when using the CFS-CR formula. With a CFS-CR score of 59.4, this principal fell into the expected range of a Manager, which is supported also by a CLF of -0.2.

In conclusion, these findings highlight the diversity of principal CF styles and the complexity of leadership. In this study, as indicated by the differences in how teachers viewed their principals, no principal was unanimously viewed as being of one style. In all but the four Initiator cases, subsets of teachers in each school viewed their principals as being characteristic of each of the three CF Styles.

It appears that when an Initiator is leading a school, there is more consistency in the teacher ratings. Based on survey results, there seems to be clarity of vision related to the principal's style when a principal exhibits Initiator tendencies. Managers tend to be viewed in different ways, depending on the experience of the teacher with that principal, supported by the array of style designations given by individual teachers. There seems to

be an utter lack of clarity when it comes to the Responder. In this case, the Responder principal received equal ratings in all three areas. Combined with the consistently low test score comparisons, it suggests that Responder principals are unable to provide clear and discernable direction to his teachers regarding purpose.

What is the Extent of Agreement Between Teacher Ratings of the Principal's CFS and the Principal's Self-Rating of CFS?

Of the four principals who were rated by their teachers as Initiators, none rated themselves as that same style. The greatest extent of agreement came within the Manager group where four out of five principals also rated themselves as Managers. If we take into account the case argued above related to the lone Responder who, through the CFS-CR, was rated as a Manager, that number went to five. That means that in 50% of the cases there was overall agreement.

In the remaining cases, except for the highest rated Initiator, principals rated themselves one style below where their teachers rated them. Principal A, the one exception, rated himself as a Responder, with a CLF of -4.3. His rating was so dramatically different that it provides an interesting topic for further study, which will be discussed in a subsequent section. The consistency of ratings below their teacher's rating suggests that principals may be more conservative in how they view their behaviors, not allowing themselves to consider the extremes of each CFSQ statement.

The second study question was asked to determine the value of using either the teachers' CFSQ data or the principals' CFSQ data exclusively to determine style and to explore consistency, or lack thereof, between the two assessment methods. With nine out

of ten classification function values falling in the Manager range (-1.1 to 1.5) and the Initiator principal scoring a -4.3 in CLF, the results did not provide clear differentiation. Therefore, caution should be applied when considering using solely one source of data to assess principal style.

What is the Relationship Between Middle School Principals' CFS and Student Achievement?

The concept of Change Facilitator Style (CFS) allows us to address the ways principals influence the change process at individual schools leading, hopefully, to increased student progress, success, and achievement as well as to greater satisfaction for teachers. Determining the CF Style of a principal and comparing various factors, including student test scores, progress, and demographics, provided a filter through which analysis of these factors was conducted.

The results of Tamhane's T2 multi-comparison test suggests that Schools E (math only), F, and I, all Manager-led schools, outperformed all of the other schools on three sub-tests in a significant way. The mean averages of Manager-led schools for all three sub-tests, due to the overall performance of these schools, was greater than Initiator-led and Responder-led schools, suggesting that, at least in this case, Manager style principals produce greater student achievement. However, several of the Manager-led schools also underperformed in relation to the other schools, in a significant way, particularly School H. A closer look at other factors suggests there are other ways to view the influence of principals.

If the findings from future studies are similar it would appear that placing Manager principals in schools that need improvement in math scores is an effective way to sustain school success and student achievement, as shown through comparison of trends in student progress scores.

However, Initiator-led schools showed greater progress overall in spite of the fact that two of them lead schools that are more highly impacted by risk factors than others. Reviewing the plot graphs of means shows a smaller range of differences between Initiators than between Managers. Initiators appear, as a group, to show more consistency, revealing a more deeply rooted system of support for the change process in their schools.

The findings of the original study (Hall, et. al, 2006) as well as findings from a replication of that study (Lewis, 2011) suggested that Manager-led schools perform better on end-of-level math tests. Based only on test data, the findings of this study would seem to support this assertion. The average means for Manager-led schools was much higher than the others. Also supporting this finding is the number of significant positive differences between means as determined by Tamhane's T2 test, where Initiators tallied five for an average of 1.2/Initiator principal, while Managers tallied 23 for an average of 4.6/Manager principal.

The comparison for science was similar. This may be due to the fact that science and math are similar in some ways. Initiator-led schools tallied one significant positive comparison for an average of .25/school, while Manager-led schools tallied 17 for an

average of 3.4/school. However, it should be noted that al but two of the significant positive comparisons came from two of the five schools.

The findings related to language arts are less definitive. Initiator-led schools tallied 18 positive significant differences between means for an average of 4.5/principal, whereas the Manager-led schools tallied 27 for an average of 5.4/principal, suggesting that the influence of Initiator and Manager principals in the area of language arts may be more consistent than in math.

Implications for the Field

The findings of this study add to the limited body of knowledge that exists related to principal leadership and the possible influence it has on student achievement. Understanding gleaned from studies such as this can help in developing connections between what principals do and the student learning outcomes realized from those efforts. At the same time, as Hallinger and Heck (1996) emphasized, the relationships between principal leadership and student learning are indirect. It appears from this study, as well as the two earlier studies (Hall, Negroni, and George (2006); Lewis (2011)) that there can be strong relationships between principal CF Style and student test scores. The cross study findings are particularly strong for mathematics.

Principals at all levels of schooling are having their feet held to the fire in a climate of increased accountability through high-stakes testing. This was the first study of its kind with the middle school principal as its primary focus. If similar findings are found in future studies a number of implications could be considered. For example, district administration and faculty of leadership preparation programs could use

knowledge of principal CFS to improve preparation and placement of principals. CFS assessment can be used to aid principals in understanding their own leadership style. Another implication of the CFS construct is that while leadership does matter in general, each principal's individual leadership style matters more.

Implications for School District Leaders

Faced with the daunting task of hiring effective leaders for today's schools, district leadership must be able to ascertain the potential influence each candidate possesses in relation to each school needing a new principal. Having an effective protocol for that assessment is not only helpful, it is crucial.

The CF Style concept and the CFSQ instrument provide a potentially useful framework and protocol that could be used in assigning principals to schools. Consideration could be made about how to best match CFS with what a particular school needs to accomplish in terms of improving student achievement. Introducing the three CF Styles and the six dimensions of the CFS model to school district leaders and training them on the application of these concepts could allow them to more effectively prepare their principals for the rigors and complexity of change facilitation. This could improve the climate and culture within schools necessary to improve the likelihood of success. Understanding CFS also could be of help in customizing support and coaching of each principal.

It can be argued that while this works for principals with prior experience, new principals who have never lead a school would not have the requisite experience to have teacher survey data using the CFSQ. However, if those in preparatory leadership

positions are given sole, specific leadership opportunities within their schools, this could be mitigated.

Identifying the needs of schools prior to assigning new leadership places district leaders on solid ground to make appropriate decisions related to principal assignment. Creating a pool of applicants based on leadership style could improve on the notion of creating a pool of good leaders who might or might not be the best option for a specific school.

Recognizing the value of sustained leadership in any school is important for district leaders as they consider changes in principals. Change does not happen overnight and the process can take many years to play out. The need for frequent change is rendered unnecessary if initial choices are appropriate and effective.

Implications for Leader Preparation Programs

Self-knowledge and self-awareness are key components of any education program. An effective program will lead students to an understanding of their abilities and potential success in their chosen field. Leader preparation programs should give future school leaders a way to assess their knowledge, attitudes, beliefs, skills, and tendencies in order to better understand how they might function in leading school improvement efforts.

Discussions of CF Style could be an important element of leader preparation. Using the paragraph definitions of CF Style, future leaders could begin to understand how their own style might affect the schools they may someday lead. It becomes even

more crucial when we consider the weight that has been placed on the shoulders of principals to accept greater responsibility for school outputs.

Recommendations for Future Research

This study is a replication of prior research conducted in 2006 in Hartford, Connecticut at the elementary school level. It is also based in the second study that was conducted by Lewis (2011). The current study was conducted at the middle school level in a different part of the country, in a suburban school district. As with any replication, it gives another view of the research topic and expands the opportunity to consider implications of the findings in a different light. It also points out other potential studies that might be considered for future research. This section will address a few of those possibilities.

Replications and Extensions

The first study replicating the Hartford study (Lewis, 2011) was conducted at the elementary school level in a large, urban school district in the southwestern United States. Lewis' findings were consistent with those from the original study. Repeating replications at different levels, including more secondary schools, would provide an opportunity to consider multiple inputs and lead to more definitive understanding of the effect of principal leadership on student achievement.

The Hartford study used ANCOVA as the statistical procedure to analyze student and principal data. However, both replications of this study used ANOVA, to analyze the data. Future efforts should find a way to return to the original data analysis procedure when replicating the study.

Exploring Teacher vs. Principal Ratings

Some of the data from the CFSQ revealed interesting results and patterns. Several of these provide an opportunity to look more closely at principal leadership style and how it is assessed. His teachers, for example, rated principal A as an Initiator, while he rated himself as a Responder. The two styles are so dramatically different that it deserves consideration for research around the perception principals have about their own leadership as opposed to the frame of reference used by teachers to rate their principals.

Another option related to rating principal style comes from the data related to Principal J. His teachers were nearly split in thirds regarding his CF Style. Again, looking at the frame of reference, or filter, teachers use to assess principals would provide deeper insight into how and why teachers evaluate aspects of principal leadership, leading to a better understanding of the CF Style concept.

Selecting Schools Based on Test Scores

Reversing the order of data collection provides another option around CF Style. Identifying schools displaying positive trends for student progress or achievement, as well as those displaying negative trends, and then assessing the CF Style of the principal would provide an opportunity to identify patterns related to principal style and school success. Such a study could be done in schools at both the elementary and secondary level.

Conclusion

Definitions of leadership and interpretations regarding what makes an effective leader are as many and varied as the number of people who discuss it. Attempting to grasp and hold onto a consistent picture of leadership was a great challenge for the researcher, who, as a school administrator for 21 years, had developed his own set of ideas on what it takes to effectively lead a school. However, stepping outside of his role as the principal of a middle school and participating in study of principal leadership has helped him develop a new concept of what is important in leading schools through the change process and clarified the potential of that leadership to influence student achievement.

The researcher assumed that for most people the path through leadership is a collection of experiences that formulate individual tendencies, attitudes, and behaviors, without a clear understanding of how or why their leadership style influenced their organization. The collective work around Change Facilitator Style has illuminated the future path for this researcher. Having the opportunity to work directly with one of the seminal researchers of the CFS model provided a rewarding research experience and allowed the researcher access to understandings of change and leadership that he would not have had, otherwise.

It is the hope of this researcher that the information gleaned from this study and others like it, past and future, will lead to greater success for schools as they move forward in their goals of improving student achievement. In a climate of increased accountability and with the subsequent pressure to raise test scores, principals find

themselves in the crosshairs. How they lead the implementation of new curriculum approaches is critical and underscores the need to continue to research leadership and its influence on the ultimate goal of student success.

EXHIBIT A

COMPLETE CFSQ DATA

School		I	M	R	Concern for People		Organizational Efficiency		Strategic Sense		Classification Function
					Social/ Informal	Formal/ Meaningful	Trust in Others	Administrative Efficiency	Day-to-Day	Vision and Planning	
A	T	65%	35%	0%	74	76	28	71	27	74	1.5
	P	0	0	1	97	28	99	9	85	26	-4.3
B	T	58%	42%	0%	44	70	35	72	32	78	1.7
	P	0	1	0	16	56	66	50	85	42	-0.9
C	T	54%	46%	0%	59	76	33	72	31	75	1.5
	P	0	1	0	62	75	81	79	19	84	0.9
D	T	51%	49%	0%	50	66	31	66	36	64	1.3
	P	0	1	0	87	75	21	71	26	72	1.5
E	T	29%	65%	6%	68	62	46	64	44	57	0.4
	P	0	1	0	81	66	28	60	33	72	1.1
F	T	28%	59%	14%	63	65	46	57	44	57	0.4
	P	0	1	0	62	36	77	31	50	26	-1.1
G	T	41%	51%	8%	55	63	36	62	44	52	0.7
	P	0	1	0	43	36	49	40	57	26	-0.3
H	T	42%	50%	8%	57	70	32	62	40	66	1.1
	P	0	1	0	62	56	42	40	76	42	-0.7
I	T	49%	49%	2%	51	59	29	72	34	64	1.4
	P	0	0	1	52	36	71	50	76	19	-1.6
J	T	31%	35%	35%	53	44	45	48	52	51	-0.2
	P	0	1	0	43	75	71	50	69	53	-0.6

Exhibit A. Complete CFSQ Data
Note: T = Teacher; P = Principal; I=Initiator; M= Manager; R= Responder

EXHIBIT B

TAMHANE T2 MULTIPLE COMPARISON TEST RESULTS

Language Arts						
(I) USOE School #	(J) USOE School #	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
A	B	-1.81	.711	.399	-4.13	.52
	C	-1.49	.803	.951	-4.11	1.14
	D	-.35	.599	1.000	-2.30	1.61
	E	-1.44	.688	.818	-3.69	.81
	F	-2.76*	.643	.001	-4.86	-.66
	G	-.99	.736	1.000	-3.39	1.42
	H	2.01	.644	.082	-.10	4.11
	I	-3.69*	.605	.000	-5.67	-1.72
	J	1.12	.775	.999	-1.41	3.66
B	A	1.81	.711	.399	-.52	4.13
	C	.32	.847	1.000	-2.45	3.10
	D	1.46	.658	.706	-.69	3.61
	E	.37	.740	1.000	-2.05	2.79
	F	-.95	.698	1.000	-3.23	1.33
	G	.82	.784	1.000	-1.74	3.38
	H	3.82*	.699	.000	1.53	6.10
	I	-1.88	.663	.190	-4.05	.28
	J	2.93*	.821	.017	.25	5.62
C	A	1.49	.803	.951	-1.14	4.11
	B	-.32	.847	1.000	-3.10	2.45
	D	1.14	.756	.998	-1.34	3.61
	E	.05	.828	1.000	-2.66	2.76

	F	-1.28	.791	.994	-3.87	1.31
	G	.50	.868	1.000	-2.34	3.34
	H	3.49*	.792	.001	.90	6.08
	I	-2.21	.760	.162	-4.70	.29
	J	2.61	.901	.164	-.34	5.56
D	A	.35	.599	1.000	-1.61	2.30
	B	-1.46	.658	.706	-3.61	.69
	C	-1.14	.756	.998	-3.61	1.34
	E	-1.09	.633	.982	-3.16	.98
	F	-2.41*	.583	.002	-4.32	-.51
	G	-.64	.684	1.000	-2.88	1.60
	H	2.36*	.584	.003	.45	4.26
	I	-3.34*	.541	.000	-5.11	-1.58
	J	1.47	.726	.863	-.91	3.85
E	A	1.44	.688	.818	-.81	3.69
	B	-.37	.740	1.000	-2.79	2.05
	C	-.05	.828	1.000	-2.76	2.66
	D	1.09	.633	.982	-.98	3.16
	F	-1.32	.674	.900	-3.53	.88
	G	.45	.764	1.000	-2.05	2.95
	H	3.44*	.675	.000	1.24	5.65
	I	-2.25*	.638	.020	-4.34	-.17
	J	2.56	.801	.064	-.06	5.18
F	A	2.76*	.643	.001	.66	4.86
	B	.95	.698	1.000	-1.33	3.23
	C	1.28	.791	.994	-1.31	3.87
	D	2.41*	.583	.002	.51	4.32
	E	1.32	.674	.900	-.88	3.53

	G	1.77	.723	.480	-.59	4.14
	H	4.77*	.629	.000	2.72	6.82
	I	-.93	.589	.996	-2.85	.99
	J	3.89*	.762	.000	1.39	6.38
G	A	.99	.736	1.000	-1.42	3.39
	B	-.82	.784	1.000	-3.38	1.74
	C	-.50	.868	1.000	-3.34	2.34
	D	.64	.684	1.000	-1.60	2.88
	E	-.45	.764	1.000	-2.95	2.05
	F	-1.77	.723	.480	-4.14	.59
	H	3.00*	.724	.002	.63	5.36
	I	-2.70*	.689	.004	-4.96	-.45
	J	2.11	.842	.431	-.64	4.87
H	A	-2.01	.644	.082	-4.11	.10
	B	-3.82*	.699	.000	-6.10	-1.53
	C	-3.49*	.792	.001	-6.08	-.90
	D	-2.36*	.584	.003	-4.26	-.45
	E	-3.44*	.675	.000	-5.65	-1.24
	F	-4.77*	.629	.000	-6.82	-2.72
	G	-3.00*	.724	.002	-5.36	-.63
	I	-5.70*	.590	.000	-7.62	-3.77
	J	-.88	.763	1.000	-3.38	1.62
I	A	3.69*	.605	.000	1.72	5.67
	B	1.88	.663	.190	-.28	4.05
	C	2.21	.760	.162	-.29	4.70
	D	3.34*	.541	.000	1.58	5.11
	E	2.25*	.638	.020	.17	4.34
	F	.93	.589	.996	-.99	2.85

	G	2.70*	.689	.004	.45	4.96
	H	5.70*	.590	.000	3.77	7.62
	J	4.81*	.731	.000	2.42	7.21
J	A	-1.12	.775	.999	-3.66	1.41
	B	-2.93*	.821	.017	-5.62	-.25
	C	-2.61	.901	.164	-5.56	.34
	D	-1.47	.726	.863	-3.85	.91
	E	-2.56	.801	.064	-5.18	.06
	F	-3.89*	.762	.000	-6.38	-1.39
	G	-2.11	.842	.431	-4.87	.64
	H	.88	.763	1.000	-1.62	3.38
	I	-4.81*	.731	.000	-7.21	-2.42

Table E1: Tamhane T2 Multiple Comparison Test; Dependent Variable: Language Arts; Grade 8 Scaled Score
Based on observed means.
The error term is Mean Square(Error) = 83.835.
*. The mean difference is significant at the .05 level.

Math						
(I) USOE School #	(J) USOE School #	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
A	B	-1.36	.721	.939	-3.71	1.00
	C	2.53	.834	.108	-.20	5.26
	D	-.38	.609	1.000	-2.37	1.61
	E	-5.71*	.771	.000	-8.23	-3.19
	F	-2.98*	.675	.001	-5.18	-.77
	G	-.92	.824	1.000	-3.62	1.78
	H	.70	.654	1.000	-1.44	2.83
	I	-3.80*	.704	.000	-6.10	-1.50

	J	3.38*	.895	.008	.44	6.31
B	A	1.36	.721	.939	-1.00	3.71
	C	3.89*	.862	.000	1.07	6.71
	D	.97	.647	.998	-1.14	3.09
	E	-4.35*	.801	.000	-6.97	-1.73
	F	-1.62	.709	.644	-3.93	.70
	G	.44	.852	1.000	-2.35	3.22
	H	2.05	.689	.126	-.20	4.31
	I	-2.44*	.737	.043	-4.85	-.03
	J	4.73*	.921	.000	1.72	7.75
C	A	-2.53	.834	.108	-5.26	.20
	B	-3.89*	.862	.000	-6.71	-1.07
	D	-2.91*	.771	.008	-5.44	-.39
	E	-8.24*	.904	.000	-11.20	-5.28
	F	-5.51*	.824	.000	-8.20	-2.81
	G	-3.45*	.949	.014	-6.56	-.34
	H	-1.84	.807	.655	-4.48	.81
	I	-6.33*	.848	.000	-9.10	-3.55
	J	.84	1.012	1.000	-2.47	4.16
D	A	.38	.609	1.000	-1.61	2.37
	B	-.97	.647	.998	-3.09	1.14
	C	2.91*	.771	.008	.39	5.44
	E	-5.33*	.703	.000	-7.63	-3.03
	F	-2.59*	.595	.001	-4.54	-.65
	G	-.54	.760	1.000	-3.03	1.95
	H	1.08	.571	.936	-.79	2.94
	I	-3.41*	.628	.000	-5.47	-1.36
	J	3.76*	.837	.000	1.01	6.51

E	A	5.71*	.771	.000	3.19	8.23
	B	4.35*	.801	.000	1.73	6.97
	C	8.24*	.904	.000	5.28	11.20
	D	5.33*	.703	.000	3.03	7.63
	F	2.73*	.760	.016	.25	5.22
	G	4.79*	.895	.000	1.86	7.72
	H	6.41*	.742	.000	3.98	8.83
	I	1.91	.786	.499	-.66	4.48
	J	9.09*	.961	.000	5.94	12.23
F	A	2.98*	.675	.001	.77	5.18
	B	1.62	.709	.644	-.70	3.93
	C	5.51*	.824	.000	2.81	8.20
	D	2.59*	.595	.001	.65	4.54
	E	-2.73*	.760	.016	-5.22	-.25
	G	2.06	.813	.414	-.61	4.72
	H	3.67*	.640	.000	1.58	5.76
	I	-.82	.691	1.000	-3.08	1.44
	J	6.35*	.886	.000	3.45	9.26
G	A	.92	.824	1.000	-1.78	3.62
	B	-.44	.852	1.000	-3.22	2.35
	C	3.45*	.949	.014	.34	6.56
	D	.54	.760	1.000	-1.95	3.03
	E	-4.79*	.895	.000	-7.72	-1.86
	F	-2.06	.813	.414	-4.72	.61
	H	1.62	.796	.860	-.99	4.22
	I	-2.88*	.837	.029	-5.62	-.14
	J	4.30*	1.004	.001	1.01	7.58
H	A	-.70	.654	1.000	-2.83	1.44

	B	-2.05	.689	.126	-4.31	.20
	C	1.84	.807	.655	-.81	4.48
	D	-1.08	.571	.936	-2.94	.79
	E	-6.41*	.742	.000	-8.83	-3.98
	F	-3.67*	.640	.000	-5.76	-1.58
	G	-1.62	.796	.860	-4.22	.99
	I	-4.49*	.671	.000	-6.69	-2.30
	J	2.68	.870	.095	-.17	5.53
I	A	3.80*	.704	.000	1.50	6.10
	B	2.44*	.737	.043	.03	4.85
	C	6.33*	.848	.000	3.55	9.10
	D	3.41*	.628	.000	1.36	5.47
	E	-1.91	.786	.499	-4.48	.66
	F	.82	.691	1.000	-1.44	3.08
	G	2.88*	.837	.029	.14	5.62
	H	4.49*	.671	.000	2.30	6.69
	J	7.17*	.908	.000	4.20	10.15
J	A	-3.38*	.895	.008	-6.31	-.44
	B	-4.73*	.921	.000	-7.75	-1.72
	C	-.84	1.012	1.000	-4.16	2.47
	D	-3.76*	.837	.000	-6.51	-1.01
	E	-9.09*	.961	.000	-12.23	-5.94
	F	-6.35*	.886	.000	-9.26	-3.45
	G	-4.30*	1.004	.001	-7.58	-1.01
	H	-2.68	.870	.095	-5.53	.17
	I	-7.17*	.908	.000	-10.15	-4.20

Table E2: Tamhane T2 Multiple Comparison Test; Dependent Variable: Math, Grade 8 Scaled Score

Based on observed means. The error term is Mean Square(Error) = 91.135.

*. The mean difference is significant at the .05 level

Science						
(I) USOE School #	(J) USOE School #	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
A	B	-.18	.730	1.000	-2.56	2.21
	C	.19	.885	1.000	-2.71	3.09
	D	-1.91	.604	.070	-3.88	.06
	E	-.98	.713	1.000	-3.31	1.35
	F	-5.64*	.628	.000	-7.69	-3.58
	G	-1.67	.772	.762	-4.19	.86
	H	1.67	.680	.475	-.55	3.89
	I	-3.94*	.595	.000	-5.88	-2.00
	J	-.51	.830	1.000	-3.23	2.21
B	A	.18	.730	1.000	-2.21	2.56
	C	.37	.957	1.000	-2.76	3.50
	D	-1.73	.705	.473	-4.04	.57
	E	-.80	.800	1.000	-3.42	1.81
	F	-5.46*	.726	.000	-7.83	-3.09
	G	-1.49	.853	.978	-4.28	1.30
	H	1.85	.771	.533	-.67	4.37
	I	-3.76*	.697	.000	-6.04	-1.48
	J	-.33	.906	1.000	-3.30	2.63
C	A	-.19	.885	1.000	-3.09	2.71
	B	-.37	.957	1.000	-3.50	2.76
	D	-2.10	.865	.506	-4.94	.73
	E	-1.17	.944	1.000	-4.26	1.92
	F	-5.83*	.882	.000	-8.72	-2.94

	G	-1.86	.989	.942	-5.09	1.38
	H	1.48	.920	.994	-1.53	4.49
	I	-4.13*	.858	.000	-6.94	-1.31
	J	-.70	1.035	1.000	-4.09	2.69
D	A	1.91	.604	.070	-.06	3.88
	B	1.73	.705	.473	-.57	4.04
	C	2.10	.865	.506	-.73	4.94
	E	.93	.688	1.000	-1.32	3.18
	F	-3.72*	.600	.000	-5.68	-1.77
	G	.25	.749	1.000	-2.20	2.70
	H	3.58*	.654	.000	1.45	5.72
	I	-2.03*	.564	.016	-3.87	-.18
	J	1.40	.809	.981	-1.25	4.05
E	A	.98	.713	1.000	-1.35	3.31
	B	.80	.800	1.000	-1.81	3.42
	C	1.17	.944	1.000	-1.92	4.26
	D	-.93	.688	1.000	-3.18	1.32
	F	-4.65*	.709	.000	-6.97	-2.34
	G	-.68	.839	1.000	-3.43	2.06
	H	2.65*	.756	.021	.18	5.12
	I	-2.96*	.680	.001	-5.18	-.73
	J	.47	.893	1.000	-2.45	3.40
F	A	5.64*	.628	.000	3.58	7.69
	B	5.46*	.726	.000	3.09	7.83
	C	5.83*	.882	.000	2.94	8.72
	D	3.72*	.600	.000	1.77	5.68
	E	4.65*	.709	.000	2.34	6.97
	G	3.97*	.769	.000	1.46	6.48

	H	7.31*	.676	.000	5.10	9.52
	I	1.70	.590	.168	-.23	3.63
	J	5.13*	.827	.000	2.42	7.84
G	A	1.67	.772	.762	-.86	4.19
	B	1.49	.853	.978	-1.30	4.28
	C	1.86	.989	.942	-1.38	5.09
	D	-.25	.749	1.000	-2.70	2.20
	E	.68	.839	1.000	-2.06	3.43
	F	-3.97*	.769	.000	-6.48	-1.46
	H	3.34*	.812	.002	.68	5.99
	I	-2.27	.741	.098	-4.70	.15
	J	1.16	.941	1.000	-1.92	4.24
H	A	-1.67	.680	.475	-3.89	.55
	B	-1.85	.771	.533	-4.37	.67
	C	-1.48	.920	.994	-4.49	1.53
	D	-3.58*	.654	.000	-5.72	-1.45
	E	-2.65*	.756	.021	-5.12	-.18
	F	-7.31*	.676	.000	-9.52	-5.10
	G	-3.34*	.812	.002	-5.99	-.68
	I	-5.61*	.645	.000	-7.72	-3.50
	J	-2.18	.867	.425	-5.02	.66
I	A	3.94*	.595	.000	2.00	5.88
	B	3.76*	.697	.000	1.48	6.04
	C	4.13*	.858	.000	1.31	6.94
	D	2.03*	.564	.016	.18	3.87
	E	2.96*	.680	.001	.73	5.18
	F	-1.70	.590	.168	-3.63	.23
	G	2.27	.741	.098	-.15	4.70

	H	5.61*	.645	.000	3.50	7.72
	J	3.43*	.802	.001	.80	6.06
J	A	.51	.830	1.000	-2.21	3.23
	B	.33	.906	1.000	-2.63	3.30
	C	.70	1.035	1.000	-2.69	4.09
	D	-1.40	.809	.981	-4.05	1.25
	E	-.47	.893	1.000	-3.40	2.45
	F	-5.13*	.827	.000	-7.84	-2.42
	G	-1.16	.941	1.000	-4.24	1.92
	H	2.18	.867	.425	-.66	5.02
	I	-3.43*	.802	.001	-6.06	-.80

Table E3: Tamhane T2 Multiple Comparison Test; Dependent Variable: Science; Grade 8 Scaled Score

Based on observed means.

The error term is Mean Square(Error) = 96.566.

*. The mean difference is significant at the .05 level.

EXHIBIT C

Note: Shaded areas represent years prior to the principal's tenure at each school. No shading indicates the principal began tenure prior to 2006.

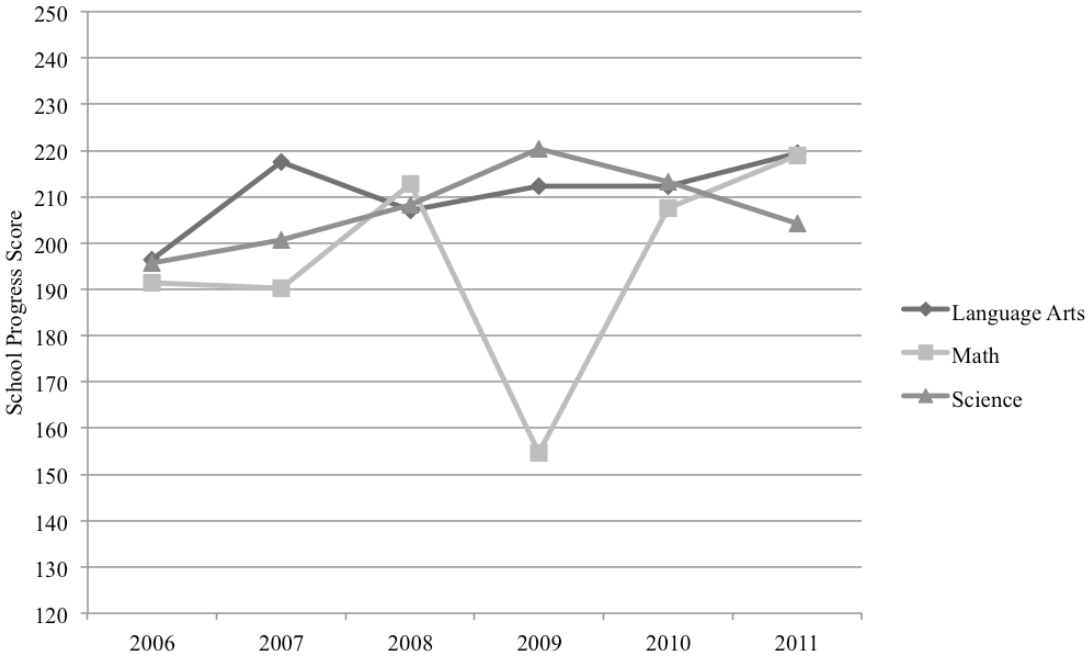

Exhibit C1. Progress Test Scores for School A.

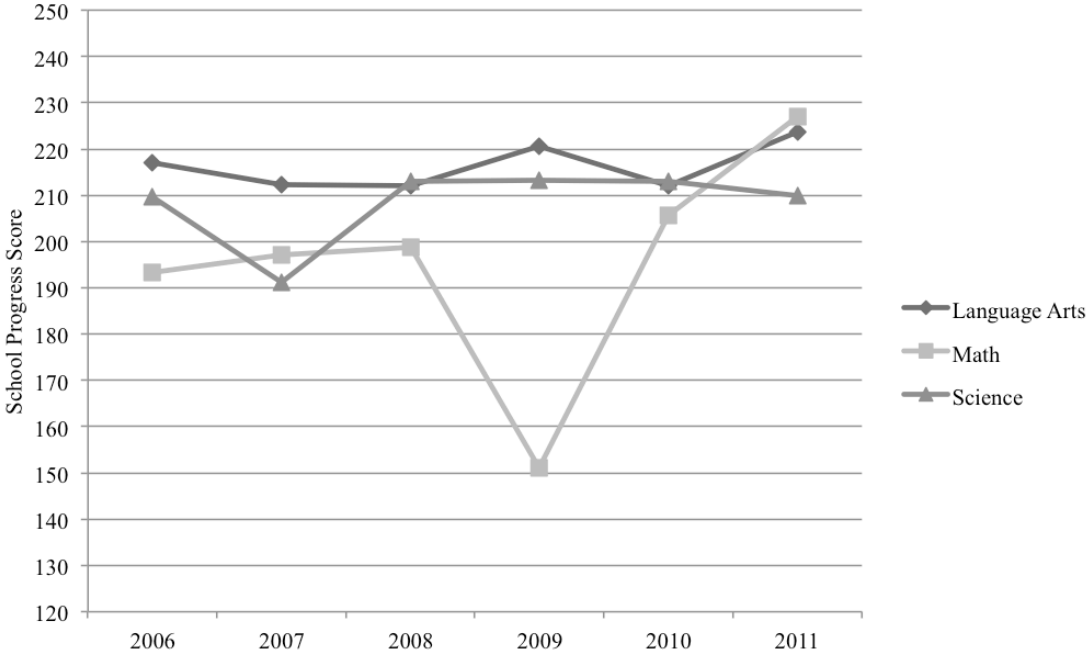

Exhibit C2. Progress Test Scores for School B.

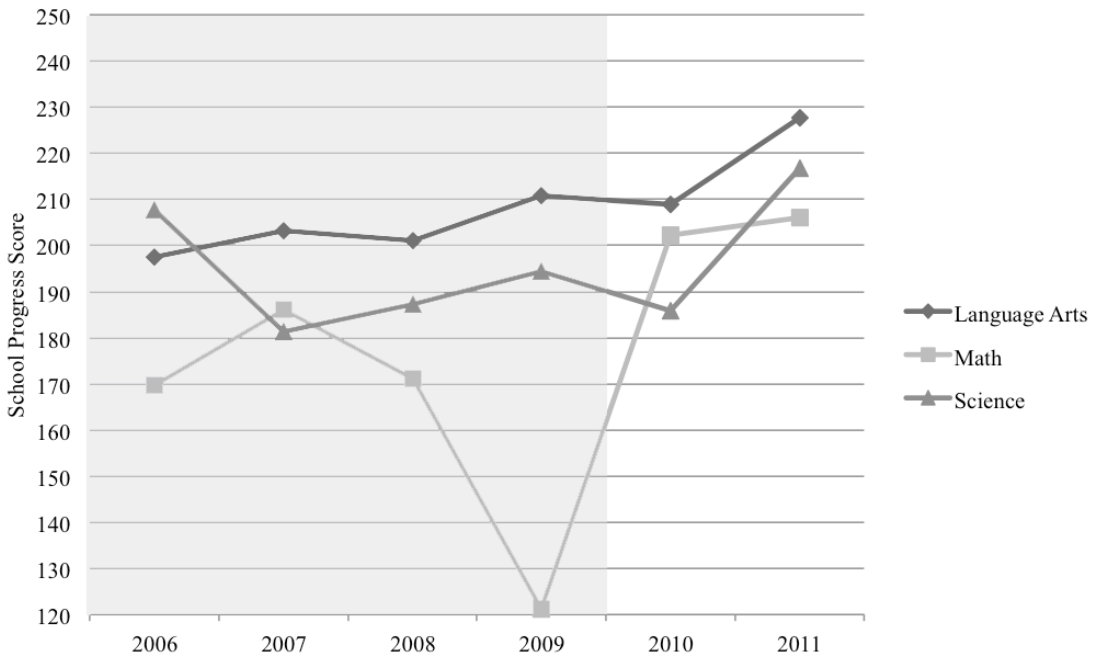

Exhibit C3: Progress Test Scores for School C.

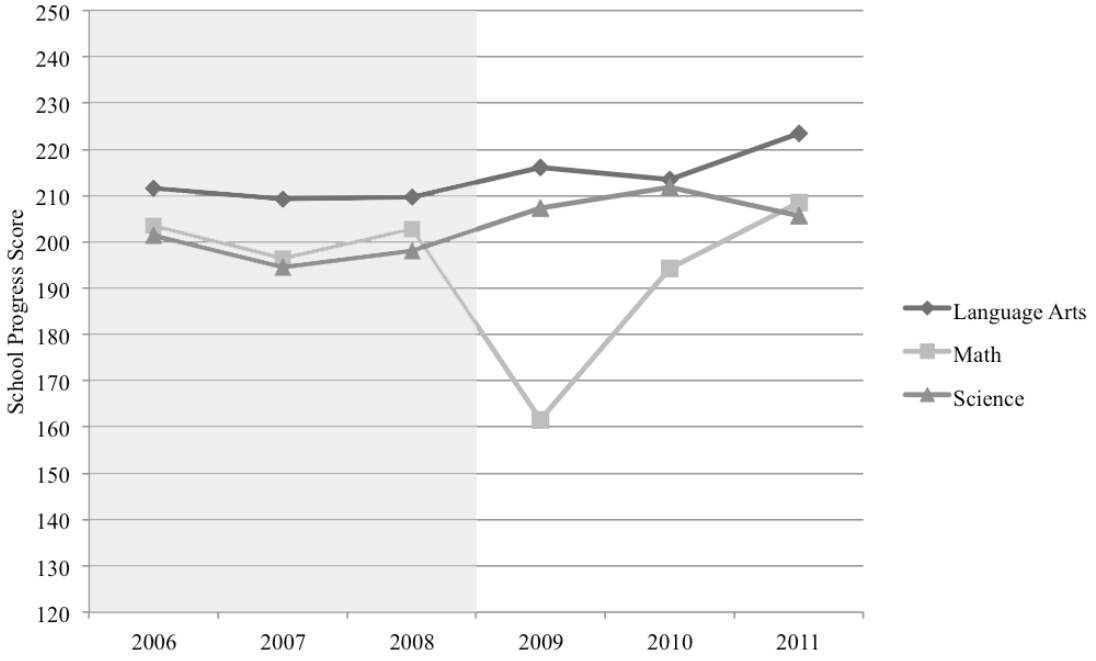

Exhibit C4. Progress Test Scores for School D.

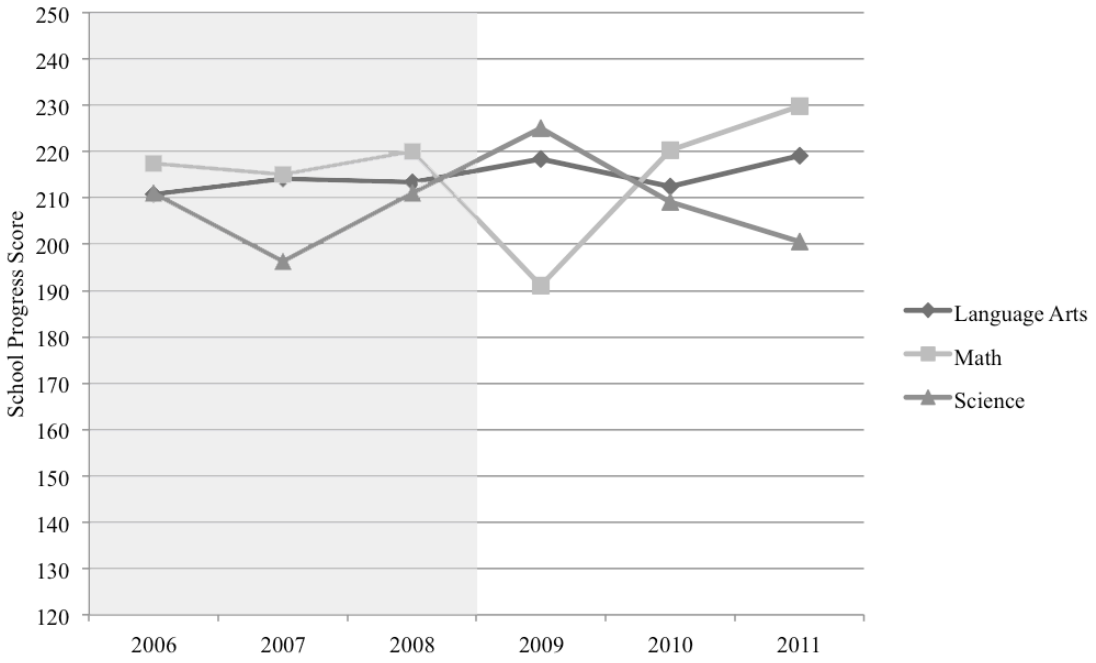

Exhibit C5. Progress Test Scores for School E.

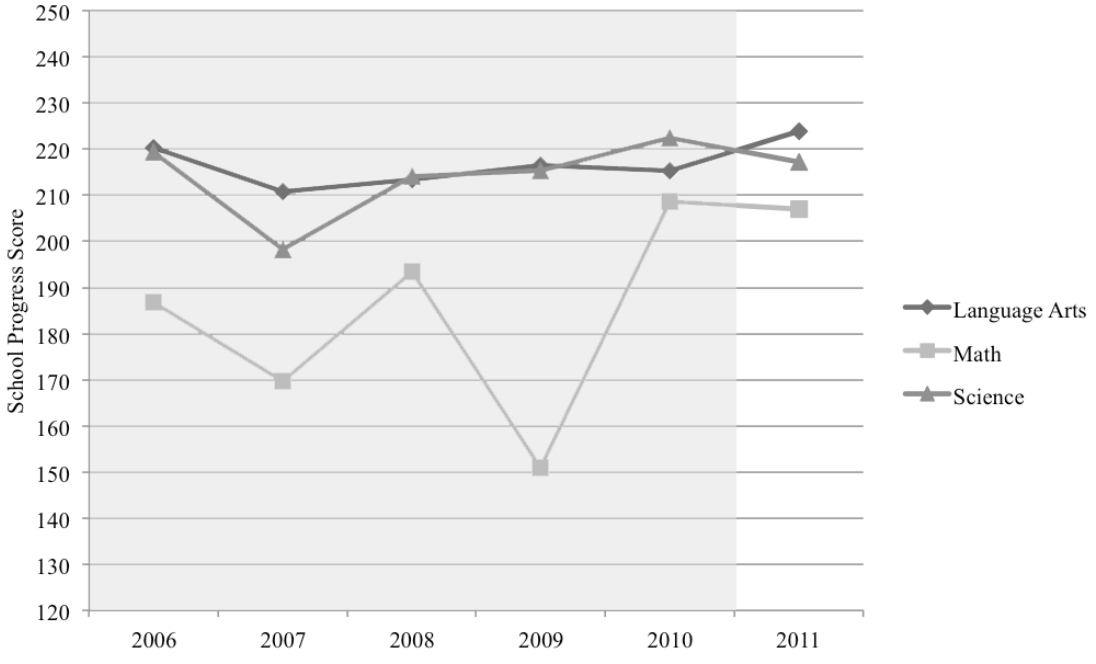

Exhibit C6. Progress Test Scores for School F.

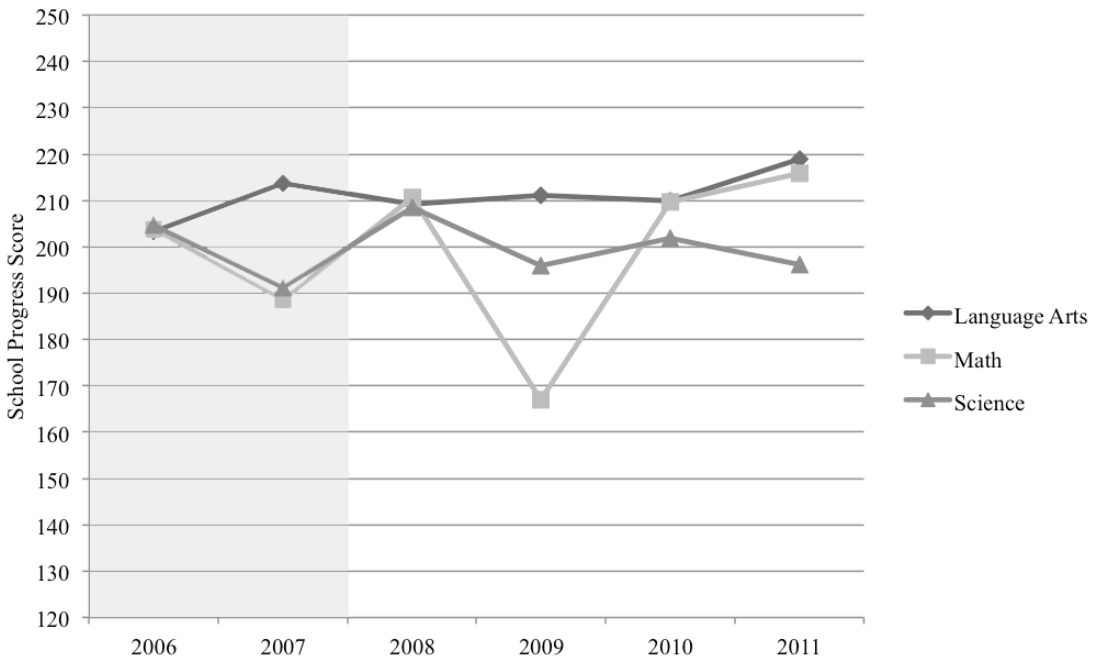

Exhibit C7. Progress Test Scores for School G.

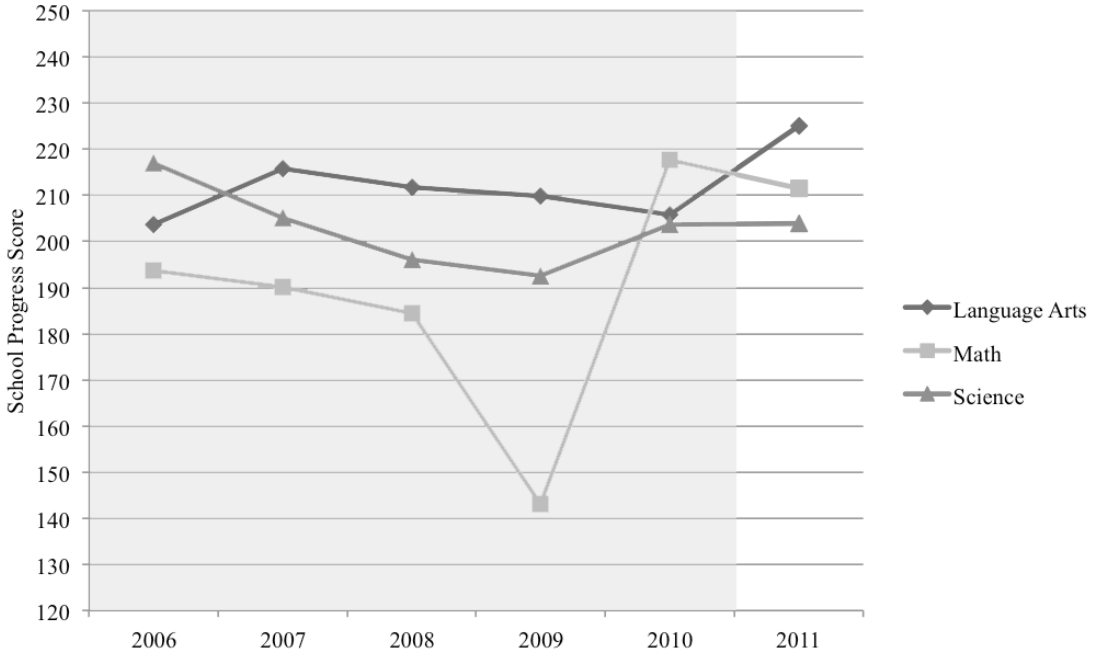

Exhibit C8. Progress Test Scores for School H.

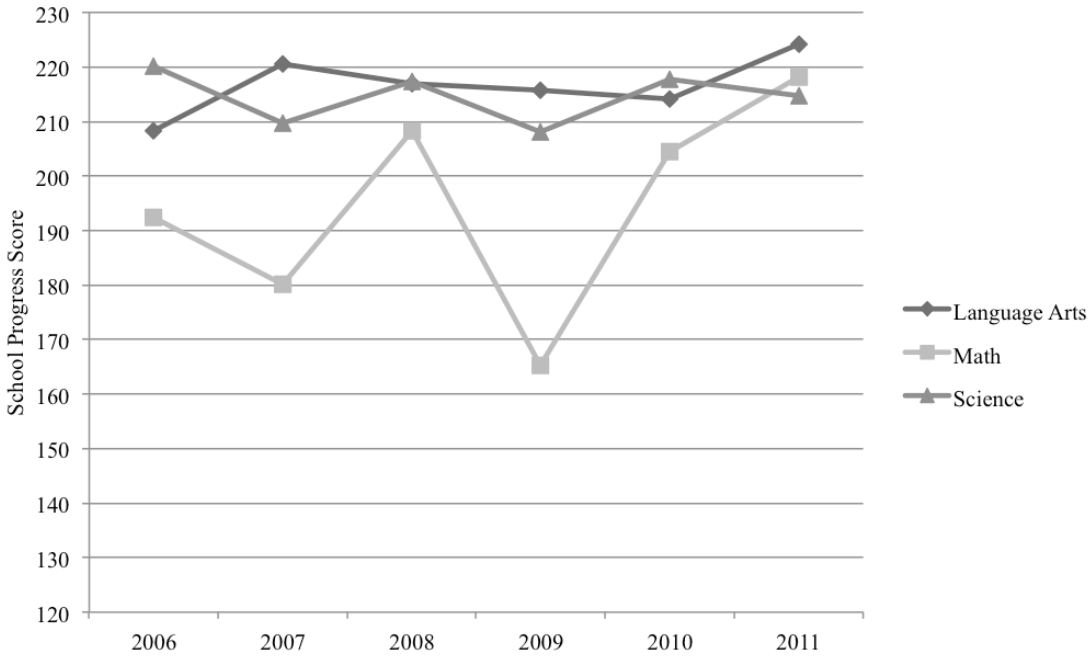

Exhibit C9: Progress Test Scores for School I.

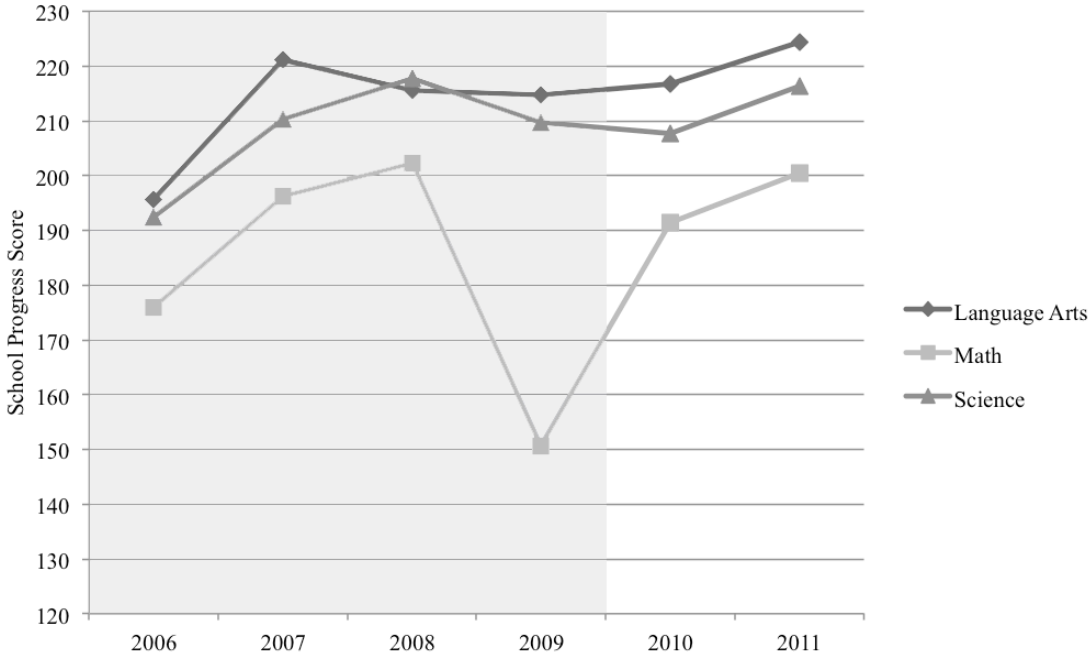

Exhibit C10: Progress Test Scores for School J.

EXHIBIT D

2011 SCHOOL DEMOGRAPHICS

School	Minorities	English Language Deficient	Special Education	Low Income
A	8.6%	3.6%	9.6%	20.8%
B	26.8%	15.2%	11.3%	47.6%
C	32.6%	20.8%	7.9%	52.7%
D	8.7%	3.9%	11.1%	25.0%
E	11.3%	4.8%	9.9%	22.2%
F	3.6%	0.8%	6.6%	11.6%
G	25.0%	13.7%	10.9%	39.2%
H	10.8%	4.8%	12.1%	31.0%
I	14%	0.6%	5.7%	10.6%
J	12.5%	3.4%	11.2%	31.0%

Exhibit D. 2011 School Demographics

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Social/Behavioral IRB – Expedited Review
Approval Notice

NOTICE TO ALL RESEARCHERS:
Please be aware that a protocol violation (e.g., failure to submit a modification for any change) of an IRB approved protocol may result in mandatory remedial education, additional audits, re-consenting subjects, researcher probation, suspension of any research protocol at issue, suspension of additional existing research protocols, invalidation of all research conducted under the research protocol at issue, and further appropriate consequences as determined by the IRB and the Institutional Officer.

DATE: May 18, 2011

TO: **Dr. Gene Hall**, Educational Leadership

FROM: Office of Research Integrity - Human Subjects

RE: Notification of IRB Action by /Lori Olafson/ Dr. Lori Olafson, Co-Chair
Protocol Title: **Principal Change Facilitator Style and Student Achievement: A Study of Schools in the Middle**
Protocol #: 1104-3779M
Expiration Date: May 17, 2012

This memorandum is notification that the project referenced above has been reviewed and approved by the UNLV Social/Behavioral Institutional Review Board (IRB) as indicated in Federal regulatory statutes 45 CFR 46 and UNLV Human Research Policies and Procedures.

The protocol is approved for a period of one year and expires May 17, 2012. If the above-referenced project has not been completed by this date you must request renewal by submitting a Continuing Review Request form 30 days before the expiration date.

PLEASE NOTE:
Upon approval, the research team is responsible for conducting the research as stated in the protocol most recently reviewed and approved by the IRB, which shall include using the most recently submitted Informed Consent/Assent forms and recruitment materials. The official versions of these forms are indicated by footer which contains approval and expiration dates.

Should there be *any* change to the protocol, it will be necessary to submit a **Modification Form** through ORI - Human Subjects. No changes may be made to the existing protocol until modifications have been approved by the IRB. Modified versions of protocol materials must be used upon review and approval. Unanticipated problems, deviations to protocols, and adverse events must be reported to the ORI – HS within 10 days of occurrence.

If you have questions or require any assistance, please contact the Office of Research Integrity - Human Subjects at IRB@unlv.edu or call 895-2794.

Office of Research Integrity - Human Subjects
4505 Maryland Parkway • Box 451047 • Las Vegas, Nevada 89154-1047
(702) 895-2794 • FAX: (702) 895-0805

Office of Research Integrity – Human Subjects
University of Nevada Las Vegas
4505 Maryland Parkway, Box 451047
Las Vegas, NV 89154-1047

Subject: Letter of Authorization to Conduct Research in <District Name> School District Facilities.

Dear Office of Research Integrity – Human Subjects:

This letter will serve as authorization for the University of Nevada, Las Vegas ("UNLV") researcher/research team, Steven K. Stewart and Dr. Gene Hall, to conduct the research project entitled Principal Change Facilitator Style and Student Achievement: A Study of Schools in the Middle at the middle schools of <District Name> School District in Utah.

The Facility acknowledges that it has reviewed the protocol presented by the researcher, as well as the associated risks to the Facility. The Facility accepts the protocol and the associated risks to the Facility, and authorizes the research project to proceed. The research project may be implemented at the Facility upon approval from the UNLV Institutional Review Board.

If we have any concerns or need additional information, the project researcher will be contacted or we will contact the UNLV Office of Research Integrity – Human Subjects at (702) 895-2794.

Sincerely,

_____ _____
Facility's Authorized Signatory Date

_____
Printed Name and Title of Authorized Signatory

Facility Authorization 7-2010

UNLV
UNIVERSITY OF NEVADA LAS VEGAS

INFORMED CONSENT

Department of Educational Leadership

TITLE OF STUDY: Principal Change Facilitator Style and Student Achievement: A Study of Schools in the Middle

INVESTIGATOR(S): Steven K. Stewart (Student), Dr. Gene E. Hall (Faculty Advisor)

CONTACT PHONE NUMBER: (801) 319-8313 or (702) 895-3441

Purpose of the Study
You are invited to participate in a research study. The purpose of this study is to explore the possible relationship between principal leadership and student achievement in middle level schools. Of particular interest is the way principals approach change implementation (Change Facilitator Style, or CFS) and how this approach influences student test scores as measured by Utah end-of-level criterion referenced tests (CRTs).

Participants
You are being asked to participate in the study because you are the principal of a middle school/junior high school in the district chosen for this study.

Procedures
If you volunteer to participate in this study, you will be asked to complete a Change Facilitator Style Questionnaire (CFSQ). You will also be asked to facilitate (encourage) your faculty to complete the same survey to determine their rating of your CFS. The time commitment for all involved is no more than 30 minutes.

Benefits of Participation
There may be no direct benefits to you as a participant in this study. However, we hope to learn more about the effect of principal leadership on student achievement. This may provide insight into what successful principals do differently than those who are less successful as measured by CRTs.

Risks of Participation
There are risks inherent in all research studies. This study may include only minimal risks. You may feel somewhat uncomfortable analyzing your own leadership style and having others (your teachers) doing the same. If you choose to participate, all information gleaned from the survey will be kept confidential.

Cost /Compensation
There will not be financial cost to you to participate in this study. The study will take no more than 30 minutes of your time. You will not be compensated for your time.

Participant Initials _____

Approved by the UNLV IRB. Protocol #1104-3779M
Received: 05-15-11 Approved: 05-18-11 Expiration: 05-17-12

TITLE OF STUDY: **Principal Change Facilitator Style and Student Achievement: A Study of Schools in the Middle**

Contact Information

If you have any questions or concerns about the study, you may contact Steve Stewart Student Investigator, at (801) 319-8313 or Dr. Gene Hall at (702) 895-3441. For questions regarding the rights of research subjects, any complaints or comments regarding the manner in which the study is being conducted you may contact the UNLV Office of Research Integrity – Human Subjects at 702-895-2794 or toll free at 877-895-2794 or via email at IRB@unlv.edu.

Voluntary Participation

Your participation in this study is voluntary. You may refuse to participate in this study or in any part of this study. You may withdraw at any time without prejudice to your relations with the university. You are encouraged to ask questions about this study at the beginning or any time during the research study.

Confidentiality

All information gathered in this study will be kept completely confidential. No reference will be made in written or oral materials that could link you to this study. All records will be stored in a locked facility at UNLV for 3 years after completion of the study. After the storage time the information gathered will be destroyed.

Participant Consent:

I have read the above information and agree to participate in this study. I am at least 18 years of age. A copy of this form has been given to me.

_____ _____

Signature of Participant Date

_____

Participant Name (Please Print)

Participant Initials _____

Approved by the UNLV IRB. Protocol #1104-3779M
Received: 05-15-11 Approved: 05-18-11 Expiration: 05-17-12

UNLV
UNIVERSITY OF NEVADA LAS VEGAS

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Department of Educational Leadership

TITLE OF STUDY: Principal Change Facilitator Style and Student Achievement: A Study of Schools in the Middle

INVESTIGATOR(S): Steven K. Stewart (Student), Dr. Gene E. Hall (Faculty Advisor)

CONTACT PHONE NUMBER: (801) 319-8313 or (702) 895-3441

Purpose of the Study
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Participants
You are being asked to participate in the study because you are a teacher in a middle school/junior high school in the district chosen for this study.

Procedures
If you volunteer to participate in this study, you will be asked to complete a Change Facilitator Style Questionnaire (CFSQ), which will determine your rating of your principal's Change Facilitator Style. . The time commitment for all involved is no more than 30 minutes.

Benefits of Participation
There may be no direct benefits to you as a participant in this study. However, we hope to learn more about the effect of principal leadership on student achievement. This may provide insight into what successful principals do differently than those who are less successful as measured by CRTs.

Risks of Participation
There are risks inherent in all research studies. This study may include only minimal risks. You may feel somewhat uncomfortable analyzing your principal's leadership style. You may be concerned about impact or risk to your employment based on your participation/non-participation in the study. This concern is mitigated by the fact that all information gleaned from the survey will be kept strictly confidential along with who participates and who opts out.

Cost /Compensation
There will not be financial cost to you to participate in this study. The study will take no more than 30 minutes of your time. You will not be compensated for your time.

Participant Initials _____

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Voluntary Participation

Your participation in this study is voluntary. You may refuse to participate in this study or in any part of this study. You may withdraw at any time without prejudice to your relations with the university. You are encouraged to ask questions about this study at the beginning or any time during the research study.

Confidentiality

All information gathered in this study will be kept completely confidential. No reference will be made in written or oral materials that could link you to this study. All records will be stored in a locked facility at UNLV for 3 years after completion of the study. After the storage time the information gathered will be destroyed.

Participant Consent:

I have read the above information and agree to participate in this study. I am at least 18 years of age. A copy of this form has been given to me.

_____ _____

Signature of Participant Date

_____

Participant Name (Please Print)

Participant Initials _____

Approved by the UNLV IRB. Protocol #1104-3779M
Received: 05-15-11 Approved: 05-18-11 Expiration: 05-17-12

School: _____

Date: ____ / _____ / _____

Change Facilitator Style Questionnaire (CFSQ)

On the following page is a list of short phrases that describe different activities, goals and emphases that leaders can exhibit. Studies have shown that different people place different emphases on each of these behaviors and that there is an overall pattern or style that is unique to each.

This questionnaire is a way to estimate the emphasis that is given to different leadership activities. One of the key uses of this questionnaire is to help leaders analyze and reflect on what they are doing. There is no right or wrong way, rather there are variations in emphases and patterns which may be worth considering.

In this instance, consider the leadership/facilitating activities of your principal.

Note that some of the items in this questionnaire refer to how this person is working in relation to a particular program or innovation. For those items please think about your principal's role with _____.

Also, some of the items are similar to other items. This is done deliberately in a questionnaire of this type. By having similar items, each item can be less complex and it is possible for you to complete the questionnaire in a minimum amount of time.

Having each item rated on a continuum is important too. For most facilitators/leaders most items will apply, what makes the difference is the amount of emphasis or de-emphasis a particular leader gives to each type of activity.

Please read each phrase and use the following scale points to rate the degree of emphasis given to each by your principal.

1	2	3	4	5	6
Never or not true	rarely	seldom	sometimes	often	always or very true

Change Facilitator Style Questionnaire

Please indicate how accurately each statement describes your principal:

1 Never True Not True	2 Rarely True	3 Seldom True	4 Sometimes True	5 Often True	6 Always or Very True

1. Is friendly when we talk to him or her	1	2	3	4	5	6
2. Knows a lot about teaching and curriculum	1	2	3	4	5	6
3. Clearly spells out procedures and rules	1	2	3	4	5	6
4. Discusses school problems in a productive way	1	2	3	4	5	6
5. Seems to be disorganized at times	1	2	3	4	5	6
6. Shares many ideas for improving teaching and learning	1	2	3	4	5	6
7. Introduces plans and procedures at the last moment	1	2	3	4	5	6
8. Keeps everyone informed about procedures	1	2	3	4	5	6
9. Is heavily involved in what is happening with teachers and students	1	2	3	4	5	6
10. Proposes loosely defined solutions	1	2	3	4	5	6
11. Is primarily concerned about how teachers feel	1	2	3	4	5	6
12. Asks questions about what teachers are doing in their classrooms	1	2	3	4	5	6
13. Has few concrete ideas for improvement	1	2	3	4	5	6
14. Provides guidelines for efficient operation of the school	1	2	3	4	5	6
15. Supports his or her teachers when it really counts	1	2	3	4	5	6
16. Is disorganized about allocation of resources	1	2	3	4	5	6
17. Makes efficient and smooth running of the school a priority	1	2	3	4	5	6
18. Uses many sources to learn more about new programs or innovations	1	2	3	4	5	6
19. Being accepted by teachers is very important to him/her	1	2	3	4	5	6
20. Sees the connection between the day-to-day activities and moving toward a longer term goal	1	2	3	4	5	6
21. Knows very little about programs and innovations	1	2	3	4	5	6
22. Is skilled at organizing resources and schedules	1	2	3	4	5	6
23. Has an incomplete view about the future of the school	1	2	3	4	5	6
24. Attending to feelings and perceptions is his or her first priority	1	2	3	4	5	6
25. Explores issues in a loosely structured way	1	2	3	4	5	6
26. Chats socially with teachers	1	2	3	4	5	6
27. Delays making decisions to the last possible moment	1	2	3	4	5	6
28. Focuses on issues of limited importance	1	2	3	4	5	6
29. Takes the lead when problems must be solved	1	2	3	4	5	6
30. Has a clear picture of where the school is going	1	2	3	4	5	6

1. How many years have you been a teacher or staff member in this school?

   Check one: __ 1, __ 2, __3, __4, __5, __6-9, __10-14, __15 or more

2. In your career, including your current principal, how many different principals have you worked with?

Check one: __1, __2, __3, __4, __5, __ or more

3. Are there other key things that your principal does that you seeas being important aspects of how she/he facilitates the school? If so please describe them here.

4. Any other ideas or suggestions about how to look at the principal's role in facilitating improvements?

Thank you

Cluster	Dimension	Profile Interpretation
Concern for People	Social/ Informal	Teachers rate the degree to which the principal is sociable and informal in communications with teachers. High ratings on this scale indicate friendly, social interactions. Positive correlation exists with the Formal/Meaningful aspect of the principal's behavior.
	Formal/ Meaningful	Teachers rate the degree to which the principal is formal, task-oriented, production oriented and supportive of activity with the innovation in communications with teachers. High ratings reflect task and production oriented interactions.
Organizational Efficiency	Trust in Others	High ratings on this scale indicate a reactive style. The principal leaves many activities such as resource allocations, organizational structures, and decision-making to others.
	Administrative Efficiency	High ratings on this scale reflect a proactive style to structure and tasks. Procedures and rules are in place and well understood. Problems are anticipated and dealt with easily. Positive correlation exists between both Social/Informal and Formal/Meaningful scales but higher on the latter.
Strategic Sense	Day-to-day	High ratings on this scale reflect the perception that the principal lacks vision. There is a short-term focus underlying decision-making. High ratings here generally correlate to lower scores on the Social/Informal. Principals tend to score higher on the Trust in Others scale and lower on both the Formal/Meaningful and Administrative Efficiency scales.
	Vision and Planning	High ratings on this scale indicate a perception that the principal is knowledgeable, involved, and informed. They have the long-term in mind, but connect this with moment-to-moment actions and events. High ratings here are correlated highly with the Formal/Meaningful and Administrative Efficiency and low ratings on Trust in Others and Day-to-Day scales.

Table F. CFSQ Profile Interpretations: Clusters and Dimensions

DESCRIPTIONS OF THREE CHANGE FACILITATOR STYLES

(Hall & Hord, 2006)

Initiators have clear, decisive, long-range policies and goals that transcend but include implementation of the current innovation. They tend to have very strong beliefs about what good schools and teaching should be like and work intensely to attain this vision. Decisions are made in relation to their goals for the school and in terms of what they believe to be best for students, which is based on current knowledge of classroom practice. Initiators have strong expectations for students, teachers, and themselves. They convey and monitor these expectations through frequent contacts with teachers and setting clear expectations of how the school is to operate and how teachers are to teach. When they feel it is in the best interest of their school, particularly the students, Initiators will seek changes in district programs or policies or they will reinterpret them to suit the needs of the school. Initiators will be adamant but not unkind, they solicit input from staff and then decisions are made in terms of the goals of the school, even if some are ruffled by their directness and high expectations.

Managers place heavy emphasis on organization and control of budgets, resources, and the correct applications of rules, procedures and policies. They demonstrate responsive behaviors in addressing situations or people and they initiate actions in support of change efforts. The variations in their behavior are based in the use of resources and procedures to control

people and change processes. Initially new implementation efforts may be delayed since they see that their staff are already busy and that the innovation will require more funds, time, and/or new resources. Once implementation begins, Managers work without fanfare to provide basic support to facilitate teachers' use of the innovation. They keep teachers informed about decisions and are sensitive to excessive demands. When they learn that the central office wants something to happen in their school their first questions will be about available dollars, time and staffing to accomplish the change. Once these questions are resolved they then support their teachers in making it happen. As implementation unfolds they do not typically initiate attempts to move beyond the basics of what is required.

Responders place heavy emphasis on perception checking and listening to people's feelings and concerns. They allow teachers and others the opportunity to take the lead with change efforts. They believe their primary role is to maintain a smooth running school by being friendly and personable. They want their staff to be happy, get along with each other, and to treat students well. They tend to see their school as already doing everything that is expected and not needing major changes. They view their teachers as strong professionals who are able to carry out their instructional role with little guidance. Responders emphasize the personal side of their relationships with teachers and others. They make decisions

one at a time and based on input from their various discussions with individuals. Most are seen as friendly and always having time to talk

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