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It's a matter of principal: Examining relationships between leaders' change facilitator style and students' academic progress

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IT’S A MATTER OF *PRINCIPAL*: EXAMINING RELATIONSHIPS
BETWEEN LEADERS’ CHANGE FACILITATOR STYLE
AND STUDENTS’ ACADEMIC ACHIEVEMENT

by

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May 2011
THE GRADUATE COLLEGE

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entitled

It’s a Matter of Principal: Examining Relationships Between Leaders’ Change Facilitator Style and Students’ Academic Achievement

be accepted in partial fulfillment of the requirements for the degree of

Executive Doctor of Education in Educational Leadership
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ABSTRACT

It’s a Matter of Principal: Examining Relationships Between Leaders’ Change Facilitator Style and Students’ Academic Achievement

by

Diane Lewis

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At no other time in the history of American education have school principals been faced with as many challenges as today. The era of accountability has increased the daily pressures of leading a school, while responsibility for student achievement is at an all time high.

Some studies have examined a leaders’ impact on teacher behaviors. Fewer studies have examined the possible impacts that principals have on student learning. In this study, leadership research was reviewed; not only in education, but in business, sports, and other fields. The traits and styles of leaders were explored in an attempt to define the characteristics and actions of successful and effective leaders.

The purpose of this study was to determine the relationship between elementary school principals’ Change Facilitator Style and students’ performance on the Nevada Criterion Reference Tests, which determine schools’ Adequate Yearly Progress. Nine schools with majority minority student populations were selected. The principals had been in their schools for a minimum of three years. An expert panel developed consensus ratings of each principal’s Change Facilitator Style. Students who had attended the school for grades 3, 4 and 5 were identified as a Super Cohort. The statistical exploration of relationships between principals being more of an Initiator, Manager, or Responder and
student levels of proficiency indicated that students in Responder led schools scored the lowest.
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ACKNOWLEDGMENTS

This accomplishment would not be possible without the support and encouragement of many people. I wish to personally thank:

Mr. Robert D. Lewis Jr. and Mrs. Nadine Pichetti Lewis, my parents. You instilled in me the desire to strive for more and the value of education. You always wanted nothing but the best for me. You both serve as wonderful role models for support and love.

Dr. Gene Hall, chairperson of my dissertation committee. I appreciate your patience with my never-ending task concerns, and your guidance through the process. Along with Dr. Hall, I am grateful to my entire committee; Dr. Linda Quinn, Dr. James Hager, and Dr. James Crawford. You each gave of yourself to help me. Along with these committee members, I credit all of the professors for the University of Nevada, Las Vegas Executive Cohort.

My nieces: Brooke, Baylee and Bella. Though you may not have been physically present during my journey, you were inspiring. With this degree, I now challenge each of you to become the very best you are capable of becoming in life.

My friends: Your patience and understanding through this process was unending and invaluable. You prayed and encouraged me, always.

Hales: You motivated me, even at the awful time we usually meet. You ensured that my body did not fall apart, even when my mind was wavering.

The Three Girls: It is without reservation that I can say I would not be in this position, if not for each of you. We’ve shared smiles, sadness, and secrets. We celebrated our successes small and now big, huge!
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CHAPTER ONE

INTRODUCTION

An education isn’t how much you have committed to memory, or even how much you know. It’s being able to differentiate between what you know and what you don’t. It’s knowing where to go to find out what you need to know; and it’s knowing how to use the information you get.

-William Feather

“There are 95,000 schools in America, and if we had 95,000 good principals, we’d be done. Done, that is, worrying about K through 12 education” (Will, 2011, p. 16). Those are the words of the current United States Secretary of Education, Arne Duncan.

Modern societies are facing terrible problems and education reform is seen as a major source of hope for solving them. But, wishful thinking and legislation have deservedly poor track records as tools for social betterment. As those closest to education increasingly acknowledge that change process is crucial, it is imperative that there is knowledge about the means in which change takes place (Fullan & Miles, 1992).

The challenge facing education in the 21st century is to make changes to achieve higher levels of learning for all children (Ramsey, 2002). At the time of the present study, public schools are undergoing scrutiny and criticism of such magnitude; it is difficult to predict the future of public education. An increased emphasis on accountability and school improvement, including primarily student achievement, is at the forefront of all education debates.

The principal has consistently been recognized as a significant factor in school effectiveness. The complexity of the job of a school administrator has demanded highly
developed skills to carry out the many functions of the school operation.

Exceptional leaders have always been rare, but many believe that they can be made as well as born (Abrashoff, 2002). At the same time, there is limited understanding about the ways that school leaders make a difference. The ways that they make a difference in student learning is even less understood (Hallinger and Heck, 2000). When examining the academic progress of students, their principal’s leadership style ought be examined. Principal leadership, along with the effectiveness of classroom teachers, has a great impact on student progress. The relationship of an administrator’s leadership style and its affect on student achievement has become critically important in continued research.

This chapter will include the following sections: Problem, Terms, Timeliness, Significance, Vested Stakeholders, Role of the Principal, Barriers, Rationale, Main Research Question, Leading Questions, Study Summary, Organization of the Study, and Summary.

Problem

Perplexity is the beginning of knowledge.

-Kahlil Gibran

Education is complex, and so is school leadership. A definition of leadership, in terms of instruction, is also far more focused than most conceptions of leadership in education. Reading the literature on the principalship can be overwhelming; due to the fact it suggests that principals should embody all the traits and skills that remedy all the defects of the schools in which they work (Elmore, 2000). Twenty-first century definitions for the school principalship have a shifted emphasis from pointing out the
processes that must be used by principals to a more values-based, outcomes-based approach to what schools are supposed to accomplish (English, 2005).

Rudolph Giuliani, former Mayor of New York City, wrote of leadership, “It works both ways: It is a privilege, but it carries responsibilities from imposing a structure suitable to an organization’s purpose, to forming a team of people who bring out the best in each other, to taking the right, unexpected risks” (2007). He described a leader as having strong beliefs, and being accountable for the results. “Leadership truly earns its keep by taking full responsibility for solving killer problems” (Abrashoff, 2002, p. 208).

Ensuring that effective leaders are in school buildings is necessary to ensuring student success. In 2007, Michelle Rhee, former Chancellor of the Washington DC Public Schools, stated, “8 percent of our eighth graders were on grade level, but all the adults in our schools were rated as exceeding expectations. How can all the adults think they are doing a good job but producing at an 8 percent success level?” (Thomas & Wingert, 2010, p. 4) An immediate reaction to this question could be that the school leaders that supervise these teachers are not effective.

Leaders who are constantly focused on the future and how they want it to unfold, will always be waiting for tomorrow, and the day after that. The power to shape the future lies in the ability to interact and pay attention to the present (Davidson, 2010). Principals are required to fill a multitude of roles. Their primary responsibility, however, is to facilitate effective teaching and learning with the overall mission of enhancing student achievement (O’Donnell & White, 2005). Principals are the foundation for instructional leadership at the school level and their leadership involves all activities that affect student learning (O’Donnell & White).
How do you define the right thing? As United States Supreme Court justice Potter Stewart commented about pornography, “You know it when you see it. If it feels right, smells right, tastes right, it’s almost surely the right thing” (Abrashoff, 2008, p. v). Leaders must know the right thing.

The difference between principals that are more effective and their less effective colleagues is not what they know. It is what they do. From effective people we learn what to do; from ineffective people we learn what not to do (Whitaker, 2003). Educators who want to promote good leadership find value in examining what effective principals do that other school leaders do not (Whitaker). One critical difference was that effective principals viewed themselves as responsible for all aspects of their school. “Every principal has an impact; great principals make a difference” (Whitaker, p. 115).

“Almost all educational reform reports have come to the conclusion that the nation cannot attain excellence in education without effective school leadership” (Crawford, 1998, p. 8). Based upon all of these known facts, and the knowledge of what is left unknown, there lies a problem in defining the impact of school leaders on student achievement.

Terms

*I am very much afraid of definitions, and yet one is almost forced to make them. One must take care, too, not to be inhibited by them.*

- Robert Delaunay

There are several terms that will be used often throughout this paper; these are terms that require not a definition, in its standard form, but an explanation. For the purposes of
this paper, the terms school leader, administrator, and principal will be used interchangeably. While school leaders can refer to personnel who work in what is commonly known as the central office, for the purpose of this study, the term school leaders will refer to one who is leading the school. Administrator, again, can refer to not just school personnel, but also to one who is at an executive level of some sort. Principal is most commonly thought of as the person in charge and leading a school’s staff and students. Change is a central theme in this work. Change can mean a multitude of things to different groups of people. In a common dictionary there are thirty-eight definitions for change. Simply stated, for this paper change will refer to something different than the present. It is necessary to point out the difference between the words behavior and style. According to the dictionary, behavior is the manner of behaving or acting, while style is a mode of living. A great deal of this work will address the Change Facilitator Style (Hall & Hord, 2011). “Style represents the overall tone and pattern of a leader’s approach. Behaviors are a leader’s individual, moment-to-moment actions, such as talking to a teacher in the corridor, chairing a staff meeting, writing a memo, talking on the telephone, or sending an e-mail. The overall accumulated pattern and tone of these behaviors form a person’s style” (p. 122). Lastly, achievement, for the purposes of this paper will be in reference to students and their performance on standardized tests.
Timeliness

*This time, like all times, is a very good one,*

*if we but know what to do with it.*

-Ralph Waldo Emerson

The focus on the principal as the key to the improvement of learning for all children has intensified in the past few years. The emphasis on results moves reform to a new level of accountability. It is no longer satisfactory to show that good, effective programs are being implemented in schools. Now, the demand is for schools to show improved academic achievement for each student (Cotton, 2003).

At no time, in recent memory, has the need for the effective and inspired leadership been more pressing than it is today. With the increasing needs in our society and in the workplace for knowledgeable, skilled, responsible citizens, the pressure on schools intensifies (Marzano, Waters & McNulty, 2005).

Accountability for results is driving school reform in the United States (Cotton, 2003). The No Child Left Behind (2001) mandate has drawn significant attention to ensuring that all schools, and more particularly, all children, make academic progress. “If we have to prove beyond a reasonable doubt that something new will be better, then the status quo will reign forever” (Harris, 2010). It cannot easily be proven that any systematic reform will be effective.

The research on teacher influence is clear: Effective teachers are the single most important factor in student learning (CEPA, 2010). The research on principal effectiveness is less clear. Researchers contest the question of how principals affect student learning. However, recent studies do suggest that principals play a very
important role in student learning (CEPA).

Effective principals are strong educators, anchoring their work on central issues of learning, teaching, and continuous school improvement. Student achievement is likely to be greatest where teachers and administrators work together, in small groups, and schools widely identify sources of student success and then struggle collectively to implement school improvement (School Improvement in Maryland, 2009).

Race to the Top (RttT) is one of the most recent programs from the United States Department of Education. It includes definitions for school leaders. An “effective principal” is defined as a principal whose students overall and for each subgroup, achieve acceptable rates of student growth (at least one grade level in an academic year). A “highly effective principal” is defined as a principal whose students achieve high rates of student growth (more than one grade level in an academic year) (United States Department of Education, 2010).

The San Francisco Chronicle described Malcolm X Elementary School as one of the lowest performing and traditionally troubled schools in the San Francisco Unified School District. This school has recently been assigned a new principal, Ms. Cooley, who actively sought the position. She is portrayed as an experienced and caring administrator and has begun to make changes at the school in her first year. However, if San Francisco Unified were to be awarded Race to the Top funds, she would have to be replaced. “That’s my problem with the school reform models in the policy; they don’t acknowledge that perhaps local school districts have been thoughtful in their hiring practices” (Norton, 2010, p. 34). The criticism of Race to the Top has focused on an unusual topic: research (Harris, 2010). Education historian Diane Ravitch has written, “What is extraordinary
about these regulations is that they have no credible basis in research” (Harris, 2010, p. 89).

Significance

*A leader takes people where they want to go. A great leader takes people where they don’t necessarily want to go but ought to be.*

-Rosalynn Carter

Principals are at the nexus of accountability and school improvement with an increasing explicit expectation that they are to be “instructional leaders” (Hallinger, 2005). Given the passage of formal government standards for education, principals “who ignore their role in monitoring and improving school performance do so at their own risk” (Hallinger).

“The lesson is inescapable. Once an issue becomes important to senior management, it becomes important down the chain of command” (Abrashoff, 2002, p. 209).

A recent Gallup study found that when people leave their companies, 65 percent are not necessarily leaving the company as much as their managers (Abrashoff, 2002). Do we need a builder? An innovator? A stabilizer? A healer? How do we match the leadership training, background, experience, and skills of an individual to the needs of the situation he or she is going into? (Neuman & Pelchat, 2001). This continues the problem for leadership.

The calls for research-based practices have never been as strong as they are now. Similarly, calls for school leadership that translates into enhanced student achievement have never been as strong (Marzano, et al., 2005). A lot of lip service is paid to the idea
of principals being instructional leaders, yet principals are given more and more responsibility in the area of management and very little training in what is needed instructionally (Neuman & Pelchat, 2001). “I couldn’t help feel like I’d been hired by the Roman Imperial Army to do a workshop in a Roman galley, while everybody was rowing---to show them how to row better or not get calluses! And clearly nobody was listening because they were too busy rowing” (Neuman & Pelchat, p. 732).

Principals are often too busy or too overwhelmed with tasks as menial as assisting students open milk containers in the lunchroom to tasks as serious as sitting in courtrooms to defend their actions and decisions as they are related to the due process of special education students to truly focus on instruction. Focusing on instruction is a fantasy for them; “maybe one day when I retire or die and go to heaven, I’ll be able to talk about teaching and learning, but right now I’ve got the buses and the football game tonight” (Neuman & Pelchat, 2001).

In many leadership positions, the change of a person who is assigned to any one position is not always a smooth transition. A problem seen too often is that districts, particularly, large districts, move principals around as if they were interchangeable parts, and they can do tremendous damage at a school as it puts everything on hold and waits to see what the next leader wants to do (Neuman & Pelchat, 2001). People often react negatively to “change.” Staff members become entrenched and say, “Let’s see how long you’re going to be here before I decide whether I am going to change or do anything new.” That’s a tremendous challenge to leadership when doing things differently is desired (Neuman & Pelchat).
The findings of this study have the potential for contributing to a better understanding of school leaders and their effectiveness. It is further anticipated that data from this study could provide criteria for consideration in the selection of potential leaders at schools sites where their Change Facilitator Style was best matched to the schools’ needs. School leaders are assigned to ensure the success of students. If school leaders are the ones who are assigned to ensure student success, then it is important to learn all we can about those leaders that succeed in making a difference.

Vested Stakeholders

*People are not an interruption of our business. People are our business.*

-Walter E. Washington

All people, every human on earth, are vested stakeholders in the education of future generations. All Americans know that the public education system is a serious weakness. Fewer realize that citizens retiring today, for the first time in history, are better educated than the young people entering the workforce (Porter, 2008).

Unless we significantly improve the performance of our public schools, there is no scenario in which many Americans will escape continued downward pressure on their standard of living (Porter, 2008). Grover J. “Russ” Whitehurst, a Brookings Institution analyst stated:

“In general, we don’t have much evidence on what it takes to create an alternative to a failed school. There are not a lot of case studies that you can point to. It’s not that they [Obama officials] are ignoring the evidence. It’s just that there isn’t much evidence to go on” (Anderson, 2010, p. 22).
Indeed, the core of the reformers’ argument, and the essence of the Obama approach to the Race to the Top, is that a mountain of research over the last decade has discovered that what makes the most difference in the quality of the teachers is the principal who supervise them (Brill, 2010).

One of the problems in education is not money. America spends a great deal on public education. “Figures in the *Statistical Abstract of the United States* shows that we are spending $11,749 per pupil, per year in the U.S. public schools, grades pre-K through 12.” However, according to a recent Gallup poll conducted from 2004 to 2007, Americans think insufficient funding is the top problem with the public schools in their communities (O’Rourke, 2010, p. 19).

Leaders are supposed to solve awful problems and inspire wonderful work. Abrashoff (2002) observed, “Ego-trippers need not apply” (p. 210). Making the right choices is an important part of leadership. “One of the trickiest elements of decision-making is working out not what, but when” (Giuliani, 2007, p. 45). When has to be now.

In 2009, President Barack Obama said, “It’s time to stop just talking about education reform and start actually doing it. It’s time to make education America’s national mission” (Giglio, 2010). Secretary of Education, Arne Duncan, said, “We will not be investing in the status quo [of education]. We must use as much of this money as possible to push real and lasting reform” (Brookings, 2009).

Abrashoff, (2002) shared his belief that leadership is not a paycheck, but a calling. He stated that leaders must want to lead with all the caring and energy of Moses parting the Red Sea.
There is a dramatic difference between “effective” schools versus “ineffective” schools; that difference is even greater when “highly effective” and “highly ineffective” schools are contrasted, specifically the top one percent of schools and the bottom one percent (Marzano, et al., 2005, p. 4). There must be further examination of leaders at schools where students perform at an academically higher level than other schools with similar student populations.

Role of the Principal

*Adding "just kidding" doesn't make it okay to insult the Principal.*

-Nancy Cartwright

In a web-search for the definition of a principal, the first six do not mention their role as the leader of a school. Though, there are key phrases that most certainly apply to the position; highest in rank, authority, most considerable, and important. The definitions go on to mention that which pertains to a prince or being princely, along with a leader or one who takes the lead. What may be considered ironic is that “acts independently” is included as well. Because the role of a principal is extremely fluid, being shaped by a diverse set of concerns and values, conceptualizations are problematic (Brown, 2005).

Evidence should be visible in a school of what a principal believes as a principal and what the school stands for (NAESP, 2001). The test of good leadership is the achievement of change in a system. Change can be difficult; however, it is necessary to abandon the past to pursue the future (Bell-Hobbs, 2008). Examining the ways in which principals lead their schools through change, and its effect on student achievement is critical to future educational research.
Problem Barriers

It’s a little like wrestling a gorilla. You don’t quit when you’re tired, you quit when the gorilla is tired.

-Robert Strauss

If there is one thing all educators know, and that many studies have confirmed for decades, it is that “there is no single answer to educational improvement” (Ravitch, 2010, p. 229). Debates about school reform are as old as public education itself.

“What is new is the polarizing political environment in which those debates are now taking place, the set of motives driving those debates, and the social and economic transformations of the 20th century that gave rise to these motives” (Glass, 2008, p. 4).

It is easier to establish goals rather than meet and obtain them. The current Obama administration is not the first to try to tackle educational reform. President Clinton had “Goals 2000.” The aspiration was that by the year 2000, 90 percent of students would graduate from high school. The current rate is 75 percent; the same level it was when the goals were established. President George W. Bush enacted No Child Left Behind. While it is still the law of the land, its aspirations were that every child would be academically proficient by the year 2014. At the end of 2007, only 33 percent of 4th graders were proficient in reading (Brookings, 2009).

Our schools cannot be improved by blind worship of data. Data are only as good as the measures used to create the numbers and as good as the underlying activities (Ravitch, 2010). More than 3,500 schools (about 4% of the nation’s schools) are classified as “chronically low performing” (Viadero, 2009). United States Secretary of Education Arne Duncan has said, “We have about 100,000 schools here in America. If
we turn around just the bottom 1 percent, the bottom 1,000 schools per year for the next five years, we could really move the needle, lift the bottom, and change the lives of tens of millions of under-served children” (Brookings, 2009). Duncan also stated, “After years of school improvement efforts, there are far too few examples of persistently low-achieving schools that have significantly and rapidly improved performance” (Anderson, 2010).

America does not have a real data system to track education. Unlike most other industries, it is difficult to track student progress over time, nor can student achievement easily be tracked to teachers.

President Obama does not have the authority to close and reopen schools himself; that power rests with local school districts and states. But he has an incentive in the economic stimulus law which requires states to help failing schools improve (Quaid, 2010).

“Obama has big plans for newer, and some argue, untested ideas, by putting as much as $5 billion into the initiative” (Quaid, p. 66).

The goal of being great is too vague for leaders. The goal must be to be great every day (Kruger & Allen, 2009). Administration in education has come to mean not the management of instruction, but the management of the structures and processes around instruction (Elmore, 2000).

Decision-making would be easy if it were always a choice between good and evil or right and wrong. Leaders are not that lucky. Most decisions are multidimensional, and they are often choices between two less than perfect remedies (Giulani, 2007).
Rationale

*Do all the good you can, By all the means you can, In all the ways you can, In all the places you can, At all the times you can, To all the people you can, As long as ever you can.*

- John Wesley

We are not a “nation at risk”, but we are a nation that could clearly do better (Harris, 2010). In years past, educators generally opted for the least invasive remedies; most shying away from state takeovers, shutdowns, conversions to charter schools, and the like. Instead they favored measures such as teaming a principal with a “turnaround specialist” who would offer coaching and encouragement. Now the Obama administration is pushing for a harder line for the weakest schools (Anderson, 2010). “NCLB didn’t differentiate between a school in a little bit of trouble with a handful of students and a school that was in educational meltdown,” said United State Secretary of Education Arne Duncan when speaking to school superintendents (Pierce, 2010).

There is little disagreement concerning the belief that principals have an impact on the performance skills of the teachers and students, both the nature and degree of that effect continues to be open to debate. “The relationship is complex and not easily subject to empirical verification” (Cotton, 2003, p. 57-58).

Principals who develop the skills and knowledge required to actually provide values, often at some personal cost to their own careers, not because they are expected to do so as a condition of their work (Elmore, 2000).
Main Research Question, Leading Questions, and Study

“Intelligence is the ability to adapt to change.”

-Steven Hawkings

The main research question for this study is: What is the relationship between elementary school principals’ Change Facilitator Style (CFS) and student achievement/progress on the Nevada Criterion Reference Test (CRT)?

Along with that question, there are four leading questions:

1. What are the key indicators used by district office staff to assign the Change Facilitator Style of a sample of Elementary School Principals?

2. What is the range of Change Facilitator Styles of a sample of Elementary School Principals who have been in their school for three years or more?

3. What are the relationships between Elementary School Principals’ Change Facilitator Style and student achievement in English-Language Arts across the three years of grades 3, 4, and 5?

4. What are the relationships between Elementary School Principals’ Change Facilitator Style and student achievement in Math across the three years of grades 3, 4 and 5?

The study will examine elementary school principals’ Change Facilitator Styles and student test scores.
Organization of the Study

The secret of all victory lies in the organization of the non-obvious.

-Marcus Aurelius

Chapter 1 of this study presents the specific problem of study and its components. Chapter 2 presents a review of the literature relevant to the problem of study. Chapter 3 details the methods and procedures used in the research design. Chapter 4 is an organization of the data gathered around the research questions. Chapter 5 contains the summary of the results, conclusions, implications for practices, and recommendations for further research.

Summary

I do the very best I know how - the very best I can; and

I mean to keep on doing so until the end.

-Abraham Lincoln

This chapter included the following sections; Problem, Terms, Timeliness, Significance, Vested Stakeholders, Role of the Principal, Barriers, Rationale, Main Research Question, Leading Questions, Study Summary, Organization of the Study, and a Summary.

Principals face a daunting task in trying to fulfill often unrealistic and often conflicting demands. Even throughout the writing of this study, the laws and regulations facing school leaders have not only changed, but the pressures have increased. Therefore, it can be of nothing less than great importance to examine the relationships between leaders Change Facilitator Style and the academic progress of students.
CHAPTER TWO
REVIEW OF LITERATURE

Beware of the man with only one book.

-St. Thomas Aquinas

The intention of this chapter is to not be exhaustive, but illustrative of current understandings about leadership; its issues, viewpoints from industries outside of education, and from what is emerging from the study of principals and school leaders. In an effort to provide a clearer picture of leadership in general, to reveal leadership information from differing perspectives, to gather background information necessary for the qualitative portion of the study, this literature review includes; Leadership History, Early History of the School Principalship, Pivotal Points in the Principalship, Issues of Leadership, Multiple Perspectives (Military, Business, Health Care, Religion, Sports, United States Government, Education), Leadership and the School Principal, Change Facilitator Styles, and Summary. This review of literature draws from both research as well as more popular sources.

Leadership History

Men make history and not the other way around. In periods where there is no leadership, society stands still. Progress occurs when courageous, skillful leaders seize the opportunity to change things for the better.

-Harry S. Truman

The concept of leadership dates back to antiquity (Marzano, et al., 2005). “Contrary to the myth of visionary leadership that pervades American culture; most leaders in all
sectors of society are creatures of the organizations they lead” (Elmore, 2000). Leadership is not a “new” phenomenon. Discussions of leadership appear in the works of Plato, Caesar, and Plutarch (Marzano, et al., 2005). Leadership is a robust concept that “occurs universally among all people regardless of culture, whether they are isolated Indian villagers, Eurasian steppe nomads, or Polynesian fisher folk” (Marzano, et al., p. 4). Leadership has been intimately linked to the effective functioning of complex organizations throughout the centuries.

“In the most commonly known historical model, leadership is the providence of the chosen few” (Kotter, 1996, p. 176). The historically dominant concept takes leadership skills as a divine gift of birth, a gift granted to a small number of people (Kotter). Leaders are those among us who seem to have a heightened capacity for facilitating transformation and whose participation in the living present is characterized as highly novel and creative (Davidson, 2010).

People do not want to be managed; they want to be led. Whoever heard of a world manager? World leader, yes. Educational leader, political leader, religious leader, scout leader, all lead; they do not manage (Godevenos, 2002).

Leadership is often connected to both power and authority. In 1998, Hunter defined power as, “the ability to force or coerce someone to do your will, even if they would choose not to, because of your position or your might.” He contradicted that with the definition of authority as, “the skill of getting people to willingly do your will because of your personal influence.” He also noted that, “Whenever two or more people are gathered together for a purpose there is an opportunity for leadership.”
Like other complex human activities, leadership is difficult to pin down. It might even be unwise to narrow it unnecessarily (Leithwood, 2003). At the core of most definitions of leadership are two functions: providing direction and exercising influence (Leithwood, 2003).

Early History of the School Principalship

*Education is simply the soul of a society as it passes from one generation to another.*

-Gilbert K. Chesterson

In 1820, Daniel Webster argued that public schools serve all the people, not just those with children who benefit from public schools. “We hold every man subject to taxation in proportion to his property, and we look not at the question whether he himself have or have not children to be benefitted by the education for which he pays” (Webster, cited in English, 2005, p.11). Thus began the political environment for school leadership that still exists today.

Horace Mann left a career in law and politics to build a system of public schools, becoming the first Secretary of the State Board of Education in Massachusetts in 1837. Mann went on to build the first normal school designed to board and train aspiring teachers. The building for which this was to be housed needed, “carpeting, painting, and whitewashing,” all of which were to be completed by the first principal (English, 2005).

In the early 1900s, the original duties of a school principal were mainly about supervision. “The principal shall know the plan of work in every class. He should know exactly what every teacher is teaching and how she is teaching it. The principal’s
inspection should be hourly, daily. The keeping of records and the like should be done outside of school hours” (Maxwell, in English, 2005). Educational accountability was a daily, if not hourly, school leadership responsibility, whose success could only be judged in terms of a productive citizen’s life.

An original reformer for schools and school leadership was William Maxwell. He wrote on the aspects of school and district leadership. He contested the latest reform of the time, that being standardized high stakes testing. He argued vigorously that scientific management and its excessive demands for data driven decision would turn teachers into bookkeepers. He claimed to not be opposed to testing, accountability, and efficiency, but rather Maxwell opposed wasting teachers’ time and importing the latest fashions in business practice into education. That was in 1916 (English, 2005). It seems as though very little has changed for educational leaders.

Up until the 20th century, public school leaders needed to have careers outside of education in order to earn enough money to live. The salaries were low, about $200 per year, which prohibited teachers from moving into administration. Therefore, school leaders were laymen. They were thought to be honest and capable gentlemen, but ignorant of the workings of a school.

John Philbrick was the first principal of the first graded school, The Quincy School. He specified the following arrangements, “Let the Principal have the general supervision and control of the whole, and let him have one male assistant or sub-principal, and ten female assistants, one for each room” (English, 2005, p. 114).
Table 1

*School principalship in American history.*

<table>
<thead>
<tr>
<th>Principalship Era</th>
<th>Years</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emergence</td>
<td>1840 - 1900</td>
<td>This time included the shift from head teacher to principal.</td>
</tr>
<tr>
<td>Professionalization</td>
<td>1900 - 1940</td>
<td>The position gained formal recognition and an acceptance of the role itself.</td>
</tr>
<tr>
<td>Intellectualism</td>
<td>1940 - 1960</td>
<td>This time questioned the transition from scientific management through human relations to the theory movement.</td>
</tr>
<tr>
<td>Constancy and Change</td>
<td>1960 - 1980</td>
<td>Pressures arose between those who sought stability and traditional values versus those who highlighted the need for change</td>
</tr>
<tr>
<td>Restructuring</td>
<td>1980 - 2000</td>
<td>This era shifted the demands from forced control to shared decision and site-based management.</td>
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</table>

Pivotal Points in the Principalship

*In a progressive country change is constant, change is inevitable.*

-Benjamin Disraeli

In the SAGE Handbook of Educational Leadership (2005), it was written that there were five times in American history that were significant for the school principalship.
Table 1 represents those pivotal points.

Issues of Leadership

*You cannot be a leader, and ask other people to follow you,*

*unless you know how to follow too.*

-Sam Rayburn

There is a feeling among many that there is a crisis in leadership in the world today. In the churches, scandals are rampant with leaders and ethics. Who knew what and when? Was there a cover-up? In governments, there are leaders planning, plotting, and actively seeking to take out other leaders and the lands in which they reign. In finance, world markets are crumbling. The dollar, the yen, and the euro are all worth less than they used to be. Some leaders try to avoid reality by ignoring chronic problems, others pit their employees against one another in the name of healthy competition; both approaches are not true leadership. “Organizations often become too complex for their leaders to run effectively” (Abrashoff, 2002, p. 208). Untrue leadership leads to a dysfunctional organization. While there are millions of people and factors that contribute to such downfalls, leaders are looked to for answers and changes.

Defining a leader is nearly impossible. Ask 100 people and you will certainly have nearly 100 answers. However, there are some commonalities. In fact, it could be contrived even that there are stereotypes. In reviewing the literature, industries have a tendency to use one another as references. Leadership styles in business use military terms such as a battlefield leader when discussing successes. In the sports and coaching industry, a business executive approach is encouraged.
Multiple Perspectives

*Knowledge of how to combine is the mother of all other forms of knowledge.*

- Alexis Tocqueville

Looking at any situation from a single viewpoint rarely offers a clear picture. It is necessary in nearly all settings to look outwards to gain perspective.

“The terrorist attacks on the United States on September 11, 2001, triggered a global fear of apocalypse from which the rational world can recover only with the aid of inspired leadership at every level of society; churches, families, schools, hospitals, courts, Congress, and the White House” (Abrashoff, 2002, p. 3).

In order to truly understand leadership it must be viewed from not a single lens, but from multiple perspectives. Leadership will be looked at in the following areas: military, business, health care, religion, sports, and the United States Government, along with education. An organizational chart will be included to compare the most imbedded qualities of leadership in each area. As a summary in each section, a tie or link to its educational implications will be included.

**Military**

*Rank does not confer privilege or give power. It imposes responsibility.*

-Louis XIV

The military has been developing theories and methods for leaders to do their jobs for centuries. Its doctrines are sound, and the methodologies are effective, albeit ever changing and improving (Cowper, 2000).
What does a leader look like? A former Navy Captain of the USS Benfold stated:
We all have our own preconceived notions. For some people, it’s easy to envision
the Arnold Schwarzenegger action-oriented person as a leader. Others may
unconsciously look for clues that bespeak status; expensive shoes, a good haircut,
and well-tailored clothes made of good fabric. But in the U.S. Military, where
shoes and haircuts and uniforms are all the same, another indicator noted in
certain studies on the topic may be the most reliable of all: a steady gaze

In 2000, Cowper wrote that while it might be true that the world’s military forces
have produced some autocrats and dictators; they have also, throughout history, worked
diligently to eliminate such types from the ranks. The terms supervisor and manager, as
positions, are not found in American military manuals. This is because supervision and
management are considered merely individual components of effective leadership
(Cowper).

The war in Vietnam did not, in the opinion of much of America at that time, offer
lessons on leadership that were admirable. Marshall Carter, a leader from State Street
Corporation, stated, “There are things I learned in Vietnam that I've taken into business; a
healthy skepticism or even a disrespect for authority. I found in Vietnam that there was
always some major or colonel who wanted to send me some place where they wouldn't
go themselves.”

Decades later, a leader turned hero emerged from Desert Storm. General H. Norman
Schwarzkoph led the United States into Iraq. He wrote the following when asked about
his opposing leader: "As far as Saddam Hussein being a great military strategist, he is
neither a strategist, nor is he schooled in the operational art, nor is he a tactician, nor is he a general, nor is he a soldier. Other than that he's a great military man - I want you to know that.”

The wars in Iraq and Afghanistan are not the only battles being waged today. With unemployment skyrocketing, profits squeezed, and many corporations teetering on the verge of bankruptcy, today’s senior executives should view themselves as wartime leaders (Guttman, 2009). On the business battlefield, leaders must stay strategic. Keep it clear, simple, and specific. In the first Gulf War, General Powell laid out this strategy: “First we cut off the Iraqi army, then we kill it” (Guttman).

Life and death situations are common in the military. Therefore, leadership is relied upon heavily. More recently, though, operational doctrines are becoming decentralized in decision and action (Cowper, 2000). In most countries, modern military commanders (and even low level leaders) are mandated to take action to solve problems and accomplish all missions without detailed orders.

By definition, leaders have to tell their teams what to do. “Whether you reach decisions by intuition, straightforward logic, or consensus; at the end of the day you must still give the orders” (Abrashoff, 2004, p. 30). When people lack confidence in a leader, their performance is less than stellar. “If the captain’s not going all out, why should we,” becomes the mind-set (Abrashoff, p. 83).

It is a commonly accepted law enforcement notion that police agencies of the free world today are designed on the “military model” of organization and leadership (Cowper, 2000). These organizations are based on rank structures and uniforms. It is authoritarian and has centralized control. Chains of command are restrictive, and can
lead to creating rigid and inflexible mind-sets (Cowper, 2000).

In 2002, Abrashoff wrote that organizations should reward risk-takers. He believed that promotions and glory ought to go to innovators and pioneers, not stand-patterns. He went on to say, “Evolve or die; it’s the law of life” (p. 8). In the military, he explained that rules that made sense when they were written might well be obsolete by the time they are to be implemented.

While education is generally not considered a life and death situation, it could be argued that if education does not improve and ensure that all students are prepared for a life after school; then what militaries set out to do, that being the defense of the country, will be compromised. Leaders must take an active role in ensuring our nation is educated enough to remain safe.

**Business**

*Management is doing things right; leadership is doing the right things.*

-Peter Drucker

Why can’t education be run more like business? That question has been asked for many years. Callahan (1962) believed that educational leadership’s problem has been and remains the fact that it has been run like business and that the accountability models superimposed in educational settings reinforce the extended assumptions of business and industrial activities.

Business has its own problems. These are unforgiving times; just ask Circuit City, Citi Bank, Lehman Brothers, or British Petroleum. Every decision must come with a smart plan of implementation or be shelved (Guttman, 2009). The rate of change in the
business world is not going to slow down anytime soon. If anything, competition in most industries will probably speed up over the next few decades (Kotter, 1996).

The terms management and leadership are often compared and contrasted in the business industry. Management is a set of processes that can keep a complicated system of people and technology running smoothly. The most important aspects of management include planning, budgeting, organizing, staffing, controlling, and problem solving (Kotter, 1996, p. 25). Leadership is a set of processes that creates organizations in the first place or adapts them to significantly changing circumstances. Leadership defines what the future should look like, aligns people with that vision, and inspires them to make it happen despite the obstacles (Kotter). “Successful transformation is 70 to 90 percent leadership and only 10 to 30 percent management. Yet for historical reasons, many organizations today don’t have much leadership” (Kotter, p. 26-27).

The confusion between management and leadership also plagues the issues of preparation and performance in educational administration. Conventional wisdom asserts that leaders are different than managers, but the line that separates them is very thin, most especially when both have been considered to be effective inside of education (English, 2005).

In The Servant Leader (1998), Hunter described a paradigm shift; displayed, in part, in Figure 1.

Another theme in business industries was the difference in the people versus the product. “You can’t focus on your mission without also focusing on the folks that make your mission happen. Since you manage things and lead people, common sense suggests that it’s people who are at the core of all leadership activities” (Harvey, Cottrell, Lucia, &
Hourigan, 2003, p. 14). It was suggested that involving workers in running the operation, and in making decisions that affect them, is a key strategy for leadership success (Harvey, et al.).

<table>
<thead>
<tr>
<th>Old Paradigm</th>
<th>New Paradigm</th>
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<tbody>
<tr>
<td>Invincibility</td>
<td>Competition</td>
</tr>
<tr>
<td>Centralized</td>
<td>Decentralized</td>
</tr>
<tr>
<td>Management</td>
<td>Leadership</td>
</tr>
<tr>
<td>Labor</td>
<td>Associates</td>
</tr>
</tbody>
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*Figure 1. Hunter's Paradigm Shift*

The treatment of employees, by leaders, is thoroughly discussed in business literature. “Perceptions are realities for those who hold them; leaders must deal with those realities in order to be effective” (Harvey, et al., 2003, p. 39). Harvey, et al. go on to offer the following two commitments: (1) to provide the training and support that all employees need to make the changes, and feel good about themselves in the process; and (2) to demonstrate patience and understanding as the new learning curve is worked through (Harvey, et al.). The more employees understand about how the business works, the more likely they are to accept and support change (Harvey, et al.). In addition, they believed, “nothing motivates employees more than knowing they’re making a difference” (Harvey, et al., p. 53).

In 2001, Collins, the author of the best-selling book on leadership, *Good to Great*, described a prescribed list of character traits that successful leaders held.
“Level Five leaders channel their ego needs away from themselves and into the larger goal of building a great company. It’s not that Level Five leaders have no ego or self-interest. Indeed, they are incredibly ambitious but their ambition is first and foremost for the institution, not themselves” (p. 21).

He went on to make a suggestion that many companies fail due to a too widespread approach. “The good-to-great companies are more like hedgehogs: simple, downy creatures that know ‘one big thing’ and stick to it” (Collins, p. 119).

Jack Welch, the former CEO of General Electric, used people as a main resource for his business success. Welch said, “My main job was developing talent. I was a gardener providing water and other nourishment to our top 750 people. Of course, I had to pull out some weeds, too.” Jeffery Immelt, the preceding CEO of General Electric, once stated, “I hated ‘organizational business behavior’ in business school. But it turns out to be the most important class. The ability to attract people, to pay them the right way, to create culture and values and reinforce them, that’s what makes great companies” (Broughton, 2008, p. 60).

Barsh and Cranston (2008) developed a series of steps in what was defined as Centered Leadership. This concept weaves together many ideas, creating a way of thinking and acting that helps leaders manage through change (Barsh & Cranston). There were five dimensions in the system that included: meaning, framing, connecting, engaging, and energizing. “Meaning is a defining trait among successful leaders.” (Barsh & Cranston, p. 22) Leaders, it was studied, that find enjoyment in their own work have a positive effect on those whom they lead. Leading is easier when there is a higher purpose
and that is shared. Barsh wrote, when comparing her work to that of leading an orchestra:

You have to be good at the work. You have to be prepared. You have to be on time. You have to be serious. You have to work. But the members of the orchestra want to see who you are as a human being, too. And in the minute you shared something like that, even if it’s making a little bit of a fool of yourself, or sharing a little bit too much, when they see that you don’t protect yourself and you’re there for the good of the music, when you give of yourself, then everybody likes that (p. 62).

Barsh and Cranston (2008) explained a “Network Mapping” exercise replicated in Figure 2.

<table>
<thead>
<tr>
<th>High Influence</th>
<th>High Influence</th>
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<tbody>
<tr>
<td>Low Degree of Comfort</td>
<td>High Degree of Comfort</td>
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<table>
<thead>
<tr>
<th>Low Influence</th>
<th>Low Influence</th>
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<tbody>
<tr>
<td>Low Degree of Comfort</td>
<td>High Degree of Comfort</td>
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*Figure 2.* Barsh and Cranston's Network Mapping exercise.

The upper right quadrant (shaded on Figure 2) is described as the “sweet spot.” These are individuals that leaders work with where those employees have a high degree of influence on their colleagues and the leader has a high degree of comfort working with them.
Callahan (1962) completed studies and confirmed a hypothesis that public school leaders have been vulnerable to powerful business and governmental forces throughout history. His conclusion was that business was an inadequate and inappropriate basis for establishing educational policy.

Health Care

As to diseases, make a habit of two things…to help,
or at least to do no harm.

-Hippocrates

While health care has been a topic of many a debate recently, it too has leadership issues and challenges. Health care is currently in the midst of an age change (Davidson, 2010).

The leadership structures of health care in the twentieth century were based on hierarchical and linear models. In recent years, those models of leadership have come under scrutiny for being too reductionistic and limiting (Davidson, 2010).

In health care, many of the factors that once brought people into the profession of nursing or medicine no longer exist in twenty-first century practice. The major work of leaders is to help find new meaning in new ways of providing health care.

“Fifteen years ago, a client who needed to have their gallbladder removed was admitted to the hospital and their length of stay was seven to ten days. Today, the clients who have their gallbladder removed check into the hospital the morning of the surgery and are often discharged home later that same day” (Davidson, 2010, p. 109).
This example illustrates the need for a functional shift in how health care has drastically changed, and its leadership must too.

Effective leaders in health care get results by creating dynamic environments in which every employee understands their role in meeting the organization’s mission and goals. Key steps to forming programs to help hospitals and health systems build leadership competencies and maximize organizational effectiveness are which that; clearly defines the organization’s goals and objectives, assess the current environment, develop a flexible curriculum, and build in accountability and assessment (Runy, 2009).

The information age of health care necessitates leaders to continually challenge the status quo. The leader who does nothing has far more to lose than the leader who attempts to do something; more than ever, risk taking is essential for healthcare leaders (Davidson, 2010).

Education, like medicine, is frequently changing. While the practices of the past may have been successful, and sometimes they still can be, there are newer, better, faster, and more efficient and effective ways to not only remove a gallbladder, but also to teach reading and lead a school.

Religion

Good leaders must first become good servants.

-Robert Greenleaf

While some may believe that religions or churches are lead by one’s God, each organization does have leaders within themselves. The leadership styles of those in such positions have a direct impact on church congregations.
In both seminaries and rabbinical schools, young religious leaders gain the framework, knowledgebase, and skill set to make the world the place that their religions call them to be, to catalyze their communities to live into that vision (Patel & Meyer, 2010).

Churches are not exactly corporate organizations. Their vision of leadership may be coming from God or another higher power. Secular leadership research clearly ignores the elements of being Spirit-led Christian leaders (Godevenos, 2002).

Mentors and sponsors are part of the religious life. “Mentors draw on their experiences and wisdom to guide you with sage counsel” (Barsh & Cranston, 2008, p. 170). However, mentors are not influential in a leaders’ career. Sponsors are more involved and open doors for opportunities (Barsh & Cranston).

In 1978, Karol Josef Wojtyla was elected Head of the Roman Catholic Church, Pope John Paul II, becoming the 264th pope and first non-Italian pope in 456 years. He refused formal papal coronation in favor of a simple inauguration ceremony and choose not to use the royal plural "We" referring to himself plainly as "I". Wojtyla was not impressed by the trappings of power and its symbols and made that clear from the day he was elected Pope. He had a very simple, plain, and honest way of communicating that endeared people to him. He exemplified the servant-leader role by embodying one of the titles of the Pope: Servus Servorum Dei (Servant of the Servants of God.) His leadership lesson was that leaders are humble. Others can learn from Wojtyla's example by not isolating themselves in the corner office or ivory tower with each successive promotion, hiding behind closed doors and a sea of fancy titles, diplomas, awards, certificates, and press-clippings. Like Wojtyla, leaders can make themselves available to people with
open doors, seeking to understand and encouraging dialogue. Leadership by walking around and talking to people and listening to their needs earns respect and trust (Kahn, 2011).

While early schools were based upon religious beliefs and led by clergy, today’s public schools have laws separating that of church and state. Though, many school leaders bring their personal beliefs and values to their positions. Their leadership may most certainly be influenced, inwardly or outwardly, by such beliefs.

Sports

*Champions aren’t made in the gyms. Champions are made from something they have inside them—a desire, a dream, a vision.*

-Muhammad Ali

Sports teams are very special collections of people who behave in a particular manner. Bunches can be defined as collections of people who work in the same place, but in an uncoordinated manner, without a common purpose. Bunches can turn into groups when they begin the process of understanding their common purpose and are mindful of each other’s parallel efforts. Groups can be transformed into “teams” when their work toward a common purpose is coordinated, system-focused, and committed to continuous process improvement (Walker, 2009). A bunch of people can put on basketball uniforms, but have no idea how to play the game. A group can practice driving the ball to the basket and honing individual skills, but only a team can play competitively. Successful teams rack up points by passing, not by individuals driving the ball to the basket (Walker, 2009).
Six coaching communication profiles emerged from a collection of data, which included site visits, video and audio recordings of drills, and interviews with coaches and players. These profiles were categorized as: military commander, quantity controller, business executive, quality controller, good cop, and situational strategist (Diaz, 2006).

Lon Kruger, Head Basketball Coach at the University of Nevada, Las Vegas, wrote of preparation being a key element in his leadership success:

When you break a season down game by game, you soon understand there is a formula to a winning season. First, you win the games you are supposed to win. Second, you win a majority of the games that are considered toss-ups. Finally, you surprise everyone by pulling off one or two upsets. If you do this, the big picture success of the season will take care of itself (Kruger & Allen, 2009, p. 78).

Kruger went on to say, “If someone on your team has failed, then you have failed as a leader for allowing them to be in position to fail” (Kruger & Allen, p. 161). “We as coaches do not determine who plays or what roles our players will have. Instead, we simply evaluate the talent and performance of our players” (Kruger & Allen, p. 261).

The lessons from leaders in sports (namely coaches) can certainly be applied to that of school leaders. Leading a staff is much like leading a team. There are egos that must be considered; there are players (or teachers) who have strengths in some areas and are weak in other areas. While the scores posted for teams mean wins and losses, the scores of students’ academic tests may mean a win or a loss for that child’s education. The idea of working together and each person doing a part to support a common goal can be taken as imperative to leadership.
A diplomat is a person who can tell you to go to hell in such a way that you actually look forward to the trip.

-Casie Stinnett

The government, in nearly every nation in the world, is looked to and at for leadership. The United States is no different. In this time of crisis, our nation’s capital has focused on the immediate and the short term. Lost are the more basic questions we really need to worry about: What is the fundamental competitive position of the United States in the global economy? What must we do to remain strong when other nations are making rapid progress? (Porter, 2008).

United States’ leadership is constantly questioned. “The problem is not so much that other nations are threatening the United States, but that the United States lacks a coherent strategy for addressing its own challenges” (Porter, 2008).

The structures of the United States government and its leaders have been accused of lacking an “in-touchness.” Washington still acts as if the federal level is where the action is. Beltway bureaucrats spend many billions of dollars on top-down, highly fragmented economic development programs. Yet these programs are not designed to support regional clusters, nor do they spend money where it will have the greatest impact in each region (Porter, 2008).

The two major political parties in the United States government are often at odds with one another and, in particular, the leaders of each party. “We need a strategy supported by the majority to secure America’s economic future. Republicans keep repeating simplistic free-market thinking, even though the absence of all regulation makes no
sense. Democrats, meanwhile, keep talking as if they want to penalize investment and economic success. They defend unions obstructing change in areas like education” (Porter, 2008).

Bolman and Deal (2008), in Reframing Organizations, wrote of the political frame. This is where organizations are viewed as alive, screaming arenas. “The Political Frame appears to be primary determinant of success in certain jobs” (p. 278). Focus of the political frame is not on resolution of conflict, but on strategy and tactics. Additionally, organizations are viewed as coalitions, where resources are scarce, and there is constant bargaining, negotiating, jockeying for the elusive resource; power.

Nearly every candidate running for office, at any level of government, has education as one of his or her priorities. Governmental leaders often claim that they have a desire to work with school leaders. Unfortunately, their desires (and their campaign speech stumps) often fall short of their actions once elected. School leadership is generally an appointed position, not one that is elected, and therefore the actions promised can be called upon more directly.

Education

Upon the education of the people of this country

the fate of this country depends.

-Benjamin Disraelien

When defining leadership in schools, there are many levels. School boards and superintendents are high-level leaders in school districts. However, the principal is known to nearly all in a school as the leader. Scratch the surface of an excellent school
and you are likely to find an excellent principal (Leithwood, 2003). Michelle Rhee, former Washington D.C. Schools Chancellor, believed that there are no great schools without great principals. She added that all effective schools begin with effective principals (Anderson, 2010).

Principals are being held increasingly accountable for student achievement in the public schools (Ediger, 2010). In these times of heightened concern for student learning, school leaders are being held accountable for how well teachers teach and how much students learn (Leithwood, 2003). One of the reasons given for holding principals accountable for student achievement is that test results can indicate how well students are doing in school. A single test score from a state mandated test could reveal the quality of instruction. Principals need to help teachers understand and accept the importance of student test scores to reveal achievement (Ediger). The ability to improve test scores is clearly not the only sign of a good teacher. However, it is a relatively objective measure in an industry with precious few (Ripley, 2008). Rhee said she does not expect all kids to move up the charts at the same rate; the important thing is to demand that most do move up (Ripley). Rhee has said, “People say, ‘Well, you know, test scores don’t take into account creativity and the love of learning.’ I’m like, you know what? I don’t give a crap. Don’t get me wrong. Creativity is good and whatever. But if the children don’t know how to read, I don’t care how creative you are. You’re not doing your job.” (Ripley).

Educational leaders must guide their schools through the challenges posed by an increasingly complex environment (Leithwood, 2003). The United States spends more per pupil on elementary and high school education than most developed nations, yet it is
behind most of those nations in the math and science abilities of its children. Despite this spending, young Americans today are less likely than their parents were to finish high school (Ripley, 2008).

Superintendents, community members, principals, and teachers in urban school districts lament systemic problems they cannot control: poverty, hunger, violence, and negligent parents. They bicker over small improvements such as class size and curriculum, like diplomats touring a refugee camp and talking about the need for nicer curtains (Ripley, 2008).

United States Secretary of Education, Arne Duncan, spoke about one of the components of the 2009 Race to the Top (RttT) federal competitive grant program, “We’re saying student achievement matters, and teachers and principals make a huge difference in students’ lives” (Anderson, 2009). Never before has so much federal money been put towards a single program (RttT) in school improvement with so few conditions from congress (Anderson).

McCarthy, a retired school principal of 30 years, offered his ideas of school leadership. “If you start making decisions based on avoiding conflict, the students lose” (McCarthy, 2010). Vision was a key component in his experience, and that every decision must be aligned with that vision. McCarthy stated that when faced with problems, solutions were usually right in front of you. “The genius of the school lies within the school” (McCarthy). Figure 3 summarizes the key points included in the aforementioned survey of the leadership literature.
### Figure 3. Key points on survey of leadership literature

<table>
<thead>
<tr>
<th>Area of Leadership Examined</th>
<th>Key Phrases / Qualities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Military</td>
<td>Order and Rank</td>
</tr>
<tr>
<td>Business</td>
<td>Employee Motivation and Relationships</td>
</tr>
<tr>
<td>Health Care</td>
<td>Continual Research and Reform</td>
</tr>
<tr>
<td>Religion</td>
<td>Lead, Not Managed</td>
</tr>
<tr>
<td>Sports</td>
<td>Creating Opportunities</td>
</tr>
<tr>
<td>United States Government</td>
<td>Lack of Coherent and Consistent Plan</td>
</tr>
<tr>
<td>Education</td>
<td>Accountability for Each Student</td>
</tr>
</tbody>
</table>

The phrases included above are not completely representative of the areas of leadership. It was evident that a theme of leaders being accountable emerged; accountable to themselves, accountable to their employees, and accountable for their product. Employees may be lower ranking officers, shift nurses, or teachers and products may be a battle won, a patient recovery, or a student’s test score.
Leadership and the School Principal

*Leadership is the art of getting someone else to do something you want done because he wants to do it.*

-Dwight D. Eisenhower

A 1977 U.S. Senate Committee Report on Equal Educational Opportunity identified the principal as the single most influential person in a school:

In many ways, the school principal is the most important and influential individual in any school. He or she is the person responsible for all activities that occur in and around the school building. It is the principal’s leadership that sets the tone of the school, the climate for teaching, the level of professionalism and morale of teachers, and the degree of concern for what students may or may not become. The principal is the main link between the community and the school, and the way he or she performs in this capacity largely determines the attitudes of parents and students about the school. If a school is a vibrant, innovative, child-centered place, if it has the reputation for excellence in teaching, if students are performing to the best of their abilities, one can usually point to the principal’s leadership as the key to success.

A study looking across Texas concluded that the skill of a principal is most important to student outcomes in the most challenged academic environments: schools serving large numbers of low-achieving students living in poverty (Robelen, 2009). In addition, it was found that principals become more effective as they acquire more experience overall, and as they gain greater experience at a particular school (Robelen). The study found that principals who were effective in improving student achievement tended to have a higher turnover rate among their teachers, but that was because those actions were producing a
stronger workforce. “Our clearest finding is that schools perform better when they are lead by experienced principals” (Robelen, p. 146).

Principals must manage multiple programs. McGhee (1992) wrote of three categories in relation to program implementation: Directors, Facilitators, and Administrators. Directors were the most effective and that they were involved in all aspects of the school. Facilitators saw their role as supportive. Administrators were the least effective, though they gave their teachers a great deal of autonomy. “Many factors affected program implementation, but none so much as the leadership of the campus principal” (McGhee).

Schools, and in particular principals, often seek out a single thing that will cure the ills of the school. That is not realistic. No matter how dramatic the result, the good-to-great transformations never happen in one fell swoop. There was no single defining action, no grand program, no one killer innovation, no solitary lucky break, no miracle moment (Collins, 2001).

Charter schools have recently become more “in vogue.” Knowledge is Power Program (KIPP) schools are known as the powerhouse in the charter school industry (Peterson, 2010). A business mentality is used for the structures of these schools. Founders, Mike Feinburg and Dave Levin, drew their lessons from leading companies: including Gap, FedEx, and Southwest Airlines. “KIPP school leaders are small business owners in many respects” (Peterson, p. 39). School leaders refer to students and parents as customers. Their control over budget, staffing and curriculum is higher than that of a traditional public school principal. Continual assessment is completed. The stakes are extremely high at KIPP schools. If students are not likely to succeed in college, the entire KIPP brand can be pulled (Peterson).
Previous studies done on the effects of principal leadership focused most heavily on examinations of particular leadership roles. For example, in 2004 Leithwood, et al. reported on a study aimed to prove that the chance of any change reform improving student learning was possible only if the district and school leaders agreed with its purpose. In 1995, Koh, Steers, and Terborg focused on student performance as a result of leadership. That study revealed that there were significant add-on effects of leadership in relationship to student academic performance. In a more recent study, Hall, et al. found significant relationships between principals’ Change Facilitator Styles and student test scores. There is a strong need to address the demands for accountability around student learning and to understand more about the effects of principal leadership.

The National Association for Elementary School Principals (2001), delineated six standards for “what principals should know and be able to do.” Those six standards include: (1) Leading schools in a way that puts student and adult learning at the center; (2) Promoting the academic success of all students; (3) Creating and demanding rigorous content and instruction; (4) Creating a climate of continuous learning for adults; (5) Using multiple sources of data as a diagnostic tool; and (6) Actively engaging the community.

Schools today continue to evolve into increasing complex organizations. In tandem with these developments is the expectation for all students to meet increasingly higher learning standards (Reynolds & Warfield, 2010). Escalating standards and changing demographics place new demands on educational leaders. The newest federal and state educational reforms combine with increasing accountability create an urgent need for
development of leadership skills to promote student achievement as measured by academic assessments.

Effective leadership plays a vital role in setting the direction for successful schools. It has generally been accepted that leaders are born, not made. Yet, contrary to this accepted belief, research shows that leaders are made, not born. Leaders are those who have the desire and willpower to be effective, and learn what true leadership is and is not.

Schools have traditionally been full of quality managers, but desperately short of leaders. The terms leader and manager are often used interchangeably in meaning and application. This is in error. By both definition and practice, leadership and management require different skill sets. Managers administer and have subordinates; while leaders innovate and have followers (Reynolds & Warfield, 2010).

“The task for educational leaders is to educate all students, each to the maximum of their individual ability, to reach for, and achieve ever higher learning standards and become life long learners” (Reynolds & Warfield, 2010, p. 64).

“If you can’t ride two horses at the same time, you should get out of the circus” (Nelson, 2008, p. 43). A circus is not a bad analogy for the swirl of demands placed on leaders at the top.

Change Facilitator Styles

_Proper words in proper places make the true definition of style._

-Jonathan Swift

Previous research on leaders has explored traits, such as height, race, and gender. The work of Fiedler (1978) suggested that leaders’ style was dependent upon
contingencies; meaning that different styles are needed for different styles. Blake and Mouton (1964) wrote that how a leader leads was in two dimensions; one in task and one in relationships. It was thought that the most effective leaders had high levels in both task and people skills. The level of maturity of the followers was thought to be reflective of the leaders’ success by Hersey and Blanchard (1988). Nearly all of the research on leaders and leadership models was built upon business and industry contexts. Educational organizations, namely schools, have much less to draw upon for research on leaders. What is lacking even more is the examination of leaders within the change processes.

Research is rich in the areas of leadership and leaders. Debates are not difficult to find on the topics of effective leadership; what makes it, who has it, and how does one do it. An essential component to effective leadership in today’s schools is the facilitation of change. How leaders implement changes can lead to either the success or the failure of any innovation.

Change continues as a theme in all educational discussions. In 1992, Fullan and Miles wrote about getting reform right in schools. “We can say flatly that reform will not be achieved until these seven orientations have been incorporated into the thinking and reflected in the actions of those involved in change efforts” (p. 744). Those seven orientations are listed in Figure 4.

One of the objectives of this research, like a few preceding it, is to identify the specific kinds of combinations of behaviors that principals can and should exhibit on a day-to-day basis to bring about increases in student achievement.
<table>
<thead>
<tr>
<th>Orientation</th>
<th>Support</th>
</tr>
</thead>
<tbody>
<tr>
<td>Change is learning</td>
<td>A great deal of uncertainty is in all new processes, with new learning required for users.</td>
</tr>
<tr>
<td>Change is a journey</td>
<td>No single blueprint exists. Reforms are multifaceted and complex.</td>
</tr>
<tr>
<td>Problems are our friends</td>
<td>Effective responses to complex situations can only be done when problems are confronted.</td>
</tr>
<tr>
<td>Change is resource-hungry</td>
<td>There are demands for additional resources, training, materials, and above all, time.</td>
</tr>
<tr>
<td>Change requires the power to manage it</td>
<td>Initiatives do not run themselves. Substantial effort is to be devoted.</td>
</tr>
<tr>
<td>Change is systematic</td>
<td>A focus on development and inter-relationships of all the main components, along with the culture is necessary.</td>
</tr>
<tr>
<td>All large-scale change is implemented locally</td>
<td>Change cannot be accomplished from afar; all seven orientations must be completed.</td>
</tr>
</tbody>
</table>

*Figure 4. Fullan and Miles' orientations of change.*

If the role of the principal is critical, then it should be possible to identify principals’ actions that directly relate to increasing the academic performance of students on standardized testing.

An understanding that has been developed through the work of Hall, Hord, and Griffin (1980) is the principle that not all principals are the same. “Principals view their role and priorities differently and operationally define their roles differently in terms of what they actually do each day” (Hall, Ruthoford, Hord, & Huling, 1984).
All leaders have a style. That has been established in research on industrial organizational leadership, change process, and educational administration. What has not been established is that there is not an operational definition of style. Furthermore, there is not a distinction drawn between leader behavior and leader style. The terms, and more troubling, the concepts have been used interchangeably. In most studies, followers were asked to identify individual behaviors of leaders, not the leaders’ behaviors in total.

In 1978, Thomas conducted a study on 60 schools, looking at the role of school principals in managing diverse educational programs. As a result of this study, she identified three patterns of principal behavior, and identified them as: Director, Administrator, and Facilitator. Director principals maintained an “active interest in all aspects of the school from curriculum and teacher to budgeting and scheduling.” Administrator principals were said to make decisions “in areas affecting the school as a whole,” this, leaving teachers with a great deal of autonomy. Facilitator principals thought of themselves as colleagues of the faculty, and “perceived their primary role to be supporting and assisting teachers in their work.” The conclusions of this study were that schools under the leadership of a Director or Facilitator principal had a greater degree of implementation in programs than did schools lead by an Administrator principal.

Hall and Hord (2006, 2011) identified varying approaches to change in leadership called the Change Facilitator Styles. These are defined through the leaders’ use of behaviors that the researchers call “interventions.” Each style is a composite of a particular set of behaviors and views about ones role in leading change efforts and different perspectives about how to approach change and the processes that are connected.
to it. Principals with different styles send signals to their staff with their actions and words.

The effects of these varying Change Facilitator Styles are observable in the degree and amount of success that followers (typically a staff or staff members) have in implementing and using any one change. In past studies various researchers have found that teachers have more or less success in implementing innovations depending on the Change Facilitator Style of their principal.

Change Facilitator Style emerged out of change process research over the last twenty years (Hall, et al., 1984; Hall & Hord, 2006, 2011). A distinct behavioral composite is represented in each style on how principals lead implementation efforts in schools. The original research identified and defined three Change Facilitator Styles: Initiators, Managers, and Responders. Each study in the United States (Hall & George, 1999) and other countries, including Australia (Schiller, 2003), Belgium (Vandenberghe, 1988), and Taiwan (Shieh, 1996) established the existence of the three Change Facilitator Styles and their direct relationship with teacher success in implementing new curriculum and instructional programs.

In an earlier study (Hall, et al, 1982) involving teachers’ Stages of Concern, Levels of Use, and Innovation Configurations (Hall & Hord, 2006, 2011), a theme developed that data had dramatically different results in different schools with what was thought to be the same implementation processes. After further examination and extensive dialogue, it was realized that it was differences in how the principals led the change efforts that appeared to explain the differences in extent of implementation success. From that, emerged the concept of Change Facilitator Styles.
As obvious as it may seem, principals are not all the same. Each one views his or her role differently, has different priorities, and has a personal definition of their role. Style and behaviors must be differentiated for the purpose of Change Facilitator Style as well as this study.

Style represents the overall tone and pattern of a leader’s approach. “Behaviors are a leader’s individual, moment to moment actions, such as talking to a teacher in the corridor, chairing a staff meeting, writing a memo, and talking on the telephone. The overall accumulated pattern and tone of these behaviors form a person’s style” (Hall & Hord, 2006, p. 211-212).

Over the next two decades, a number of studies were conducted related to principal Change Facilitator Style and the extent of teacher implementation success. More recently, there has been a study that explored relationships between Change Facilitator Style and student test scores.

The study was based upon, and extended upon an initial study, *Examining Relationships between Urban Principal Leadership and Student Learning*. The original study was conducted with site-based principals of schools and the 2006 state exams from the Hartford Public School system. (Hall, et al., 2008)

The studies of principals revealed three distinct Change Facilitator Styles: Initiator, Manager, and Responder. These represent three contrasting approaches to the processes of change. The definitions of each Change Facilitator Style will be thoroughly described in the next chapter as well as presented in the Appendices.
Summary

*I would like that to be known; these facts are in the summary which I think is a very good one.*

- John Sherman Cooper

This chapter reviewed literature in the following areas; Leadership History, Early History of the School Principalship, Pivotal Points in the Principalship, Issues of Leadership, Multiple Perspectives (Military, Business, Health Care, Religion, Sports, United States Government, Education), Leadership and the School Principal, Change Facilitator Styles, and Summary.

What is lacking is deeper research information about possible relationships between what principals do and student learning. Most studies that document principals’ individual behaviors and combinations of behaviors, i.e. style, could be informative. At the same time, it must be acknowledged that there are intervening variables between what principals do and student learning. Teachers’ instructional practices, characteristics of the curriculum and home conditions are three factors that have direct affects on the correlation between a particular leadership style garnering increased student achievement. This study attempts to contribute to the body of knowledge by exploring the relationship of a principal’s leadership style and student achievement.

With all that is known on the concept of leadership and leaders themselves, it is difficult to imagine that leaders continue to fail in all industries. In the field of education, a leader who fails does not lose money as they may in business; or lose a game as they may in sports; they lose students…children. Children cannot often help themselves, and therefore, rely upon the adults, often the adults in schools to ensure their success.
Leaders of those schools carry that enormous task to ensure the progress of students. The next chapter of this study will describe the methodology used to conduct a study on leaders’ Change Facilitator Styles and its impact on student achievement. The study of the differences in leaders and how those differences translate into the failures or successes of children is a topic that can no longer go unexamined.
CHAPTER THREE

METHODOLOGY

*Research is creating new knowledge.*

-Neil Armstrong

Introduction

*If we knew what we were doing, it would not be called research.*

-Albert Einstein

Chapter three includes the following parts: Introduction, Previous Study Explanation, Purpose, Main and Leading Research Questions, Methodology, Participants/Subjects, Protection of Human Subjects, Description of Instrument, Measures of Student Learning, Validity and Reliability of Change Facilitator Style and Nevada Criterion Reference Test, Procedures for Collection Data, Procedures for Analyzing Data, Limitations and Delimitations, and Summary.

The passage of the No Child Left Behind Act of 2001 was nothing less than a paradigm shift by the federal government. It was the largest act of educational reform since the Elementary and Secondary Education Act of 1965. While both the Elementary and Secondary Education Act and No Child Left Behind focused on accountability and closing the achievement gap between Caucasian students and minority students, the more recent act takes a much more rigorous position on the academic progress of all students.

In this “era of accountability” and schools’ designations of performing academically (or not), much attention is given to the impact that the site leader is making on the school’s success. No longer is a principal judged solely on how well he or she manages the administrative duties of a school. Now the quality of the principal is related to a
school’s capacity to ensure achievement for all children (NAESP, 2001). Educational leaders are rarely charged with sustaining the status quo. Nearly all are required to move the organization (the school) in new directions (Bell-Hobbs, 2008).

There is a strong need to address the demands for accountability around student learning and to understand more about the effects of principal leadership. What is lacking is deeper research information about possible relationships between what principals do and what student learning. Most studies that document principals’ individual behaviors and combinations of behaviors, i.e. style, could be informative. At the same time, it must be acknowledged that there are intervening variables between what principals do and what student learning. Teachers’ instructional practices, characteristics of the curriculum, and home conditions are three factors that have direct affects on the correlation between a particular leadership style garnering increased student achievement. This study attempts to contribute to the body of knowledge by exploring the relationship of a principal’s leadership style and student achievement.

Previous Study Explanation

*A creative artist works on his next composition because he was not satisfied with his previous one.*

-Dimitri Shostakovich

The study was based upon, and extended upon an initial study, *Examining Relationships between Urban Principal Leadership and Student Learning*. The original study was conducted with site based principals of schools and the 2006 state exams from the Hartford Public School system. (Hall, et al., 2008)
The study attempted to draw a direct relationship between principal leadership and student learning. The findings showed “significant statistical relationships” between principal Change Facilitator Style and students having either higher or lower scores on state tests (Hall, Negroni & George, 2008).

In the study, the Connecticut Master Tests were used as the dependent variable. The subsets of those tests were: Direct Assessment of Writing, Editing and Revising, Reading Comprehension, and two sub scores for Mathematics (computation and conceptual).

The Change Facilitator Style of the principals was used as the independent variable. A three-member panel of district office personnel, using the consensus rating, deemed a style for each principal.

Analysis of Covariance (ANCOVA) was the main statistical technique used in the study. ANCOVA requires three measures: the dependent variable, the independent variable, and a predictor variable, referred to as the covariate.

On three of the four tests, there were statistical significant relationships found between the principal’s Change Facilitator Style and student achievement.

Below is a summary of the findings:

- Schools led by Manager principals score higher in Math, than Initiator or Responder led schools.
- Schools led by Initiator principals score higher in Reading Comprehension, along with Editing and Revising, than schools led by Manager or Responder principals.

There was not a statistical difference between Initiator, Manager, or Responder principals in Writing scores.
Purpose

Any idea, plan, or purpose may be placed in the mind through repetition of thought.

-Napolean Hill

The purpose of this quantitative explanatory correlational study is to determine if there are any relationships between the independent variables, e.g. a set of elementary principals’ leadership styles and the dependent variable of student learning. In this study, principal leadership was described in terms of Change Facilitator Style (Hall & Hord, 2011) with students’ learning being determined using the Nevada Criterion Reference examinations. Student progress was measured across three school years.

Main and Leading Research Questions

He must be very ignorant for he answers every question he is asked.

-Voltaire

The main research question for this study is: What is the relationship between elementary school principals’ Change Facilitator Style (CFS) and student achievement/progress on the Nevada Criterion Reference Test (CRT)?

Along with that question, there are four leading questions:

1. What are the key indicators used by district office staff to assign the Change Facilitator Style of a sample of Elementary School Principals?

2. What is the range of Change Facilitator Styles of a sample of Elementary School Principals who have been in their school for three years or more?
3. What are the relationships between Elementary School Principals Change Facilitator Style and student achievement in English-Language Arts across the three years of grades 3, 4, and 5?

4. What are the relationships between Elementary School Principals Change Facilitator Style and student achievement in Math across the three years of grades 3, 4 and 5?

Methodology

* A tree growing out of the ground is as wonderful today as it ever was.

* It does not need to adopt new and startling methods.

- Robert Henri

The study examined principal leadership and student outcomes in nine elementary schools in a large, urban school district in the southwestern United States. District office administrators served as “key informants” (such as professional colleagues; administrators working in specific departments---persons who have a very solid, working knowledge of the principals’ style). They formed an Expert Panel. Their task was to review the established Change Facilitator Style descriptions and develop a consensus rating of the Change Facilitator Style of each principal in relation to the site leader (principal). A consensus rating (from the Change Facilitator Style) was used.

The Nevada Criterion Reference Test results in grades 3, 4, and 5 in the areas of English-language arts and math for those same nine schools were examined. These students who were tested in grade 5 (and that same group in grades 3 and 4) were considered to be a super cohort. To be included in this group for consideration in the
statistical analysis, students had to have been at the same school of study for three consecutive years; the same three previous years as the principal. Qualitative comparative analysis of the principals’ deemed style and the schools’ CRT results were completed.

Using a computerized random name assignment website, each school/principal was given a name for the purposes of this study. The name generator uses data from the United States Census to generate male and female first and last names. The website contained an obscurity factor, ranging from 1-99, with one being common and ninety-nine being complete obscurity. The factor was set at 10. This decision was made by the researcher to have names that were readable, but not in any way identifiable with the principals or their schools. Also for the purposes of readability, only one name was selected for use of the study.

Participants/Subjects

To make democracy work, we must be a nation of participants, not simply observers.

-Louis L’Amour

The district in the study represents most, if not all, of the issues facing today’s school students and families; low income, high minority, and English as a second language. It is not necessary to identify the district to understand and/or gain knowledge from the study.

The selection of schools for this study was targeted. Participants were selected based upon the necessary data components for the school. Table 2 describe the following characteristics of each school (over the three year period of examination) in the study: the
Table 2

*Characteristics of schools in study*

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<th>Student Enrolled</th>
<th>School Year</th>
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total student enrollment, the percentage of students who received free or reduced lunch (as determined by the federal government standards), the percentage of students who were designated English language learners, and the percentage of students who were white, black, or Hispanic. All other races were not included, as not any race created a significant percent of the school population, individually or combine. All of the schools had more than 50% of the students who received free or reduced lunch and more than 50% of the students were non-white. Additionally, to be a part of this study, the principals at each site had to remain the same for the three years of data examined.

Participation of members by the Expert Panel was voluntary. The selection of the members who created this panel was developed through a collaborative conversation between the researcher and the lead scholar. The goal was to ensure that each person on the panel had a working knowledge of the site principal. However, it is to be noted that these persons were not the direct supervisors of the principals. Table 3 displays the details of the Expert Panel.

Protection of Human Subjects

Confidentiality is a virtue of the loyal, as loyalty is the virtue of faithfulness.

- Edwin Louis Cole

To complete this study, the researcher was mandated to have all materials sent to the Institutional Review Board (IRB) at the University of Nevada, Las Vegas (UNLV). This department falls under the umbrella of the Federal Wide Assurance (FWA) 00002305 covering all human subject research conducted at UNLV. The FWA is approved by the Department of Health and Human Services, Office for Human Research Protection.
All UNLV researchers and faculty advisors are required to complete the Collaborative Institutional Training Initiative (CITI) course in The Protection of

Table 3

Expert Panel descriptions

<table>
<thead>
<tr>
<th>Panel member title</th>
<th>Description of job duties</th>
<th>Credentials (Degrees)</th>
<th>Length of time as an educator</th>
<th>School name</th>
<th>Length of time (in years) acquainted with principal</th>
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<td>Provide professional development in literacy, oversee school improvement plans and implementation</td>
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<td>Burgos</td>
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<td>Data Coordinator</td>
<td>Facilitate school improvement plans and restructuring schools, assist schools with obtaining and analyzing data</td>
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students, conducts professional development

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Human Subjects before a research protocol can be accepted by staff for review by the IRB.

A vital part of the research process is ensuring compliance with all necessary requirements for conducting research. The University of Nevada, Las Vegas (UNLV), maintains an Office of Research Integrity. The mission of the Office of Research Integrity (ORI) is “to create and support an environment that promotes the ethical and responsible conduct of research while assisting researchers to comply with federal, state, and local regulations with regard to research”. Through key committees, related programs, and administrative activities, the ORI oversees UNLV policies related to research integrity, including the coordination of policy development and policy implementation. The ORI also provides support for the responsible conduct of research. UNLV is committed to performing high-quality research in an ethical manner and in compliance with relevant regulations and policies. Within the ORI, there is a department of Human Subjects Research which safeguards the rights and welfare of human research subjects for research conducted by UNLV researchers. The office is obligated and authorized to support the UNLV Social Behavioral Sciences and Biomedical Sciences Institutional Review Boards to:

- Ensure that subjects are adequately informed of the nature of the study;
- Ensure that subjects participation is voluntary;
• Ensure that the benefits of a study outweigh its risks

• Ensure that the risks and benefits of the study are evenly distributed among the possible subject populations, and

• Suspend human subjects activity that violates regulations, policies, procedures, or an approved protocol, and report such violation and suspension to the Associate Vice President for Research.

The participants on the Expert Panel of this study were part of the informed consent process. Informed consent is a process, not just a form. Information must be presented to enable persons to voluntarily decide whether or not to participate as a research subject. It is a fundamental mechanism to ensure respect for persons through provision of thoughtful consent for a voluntary act. The procedures used in obtaining informed consent are designed to educate the subject population in terms that they can understand. Therefore, informed consent language and its documentation (especially explanation of the study's purpose, duration, experimental procedures, alternatives, risks, and benefits) must be written in lay language, (i.e., understandable to the people being asked to participate). The written presentation of information is used to document the basis for consent and for the subjects' future reference. The informed consent for this study can be found in the Appendices.

In addition to the university’s protocol for research, the school district in which the research was conducted had its own department. The mission of the district Research Department is to conduct research and provide objective analyses on educational practices, programs, and initiatives for the purpose of effective decision-making.
The Research unit engages in activities designed to promote the development and implementation of targeted research and evaluation projects. They facilitate the use of research findings as a basis for curricular, instructional, management, and leadership decisions. Additionally, they coordinate research efforts from universities, research institutions, and individuals wishing to conduct studies within the school district.

Before conducting research in this school district, a research application must be completed and submitted for review by the district’s Research Review Committee (RRC). The research review process ensures that organizational functions are protected from unnecessary interruptions, district resources are maximized, and the rights of human subjects are protected as required by law. Research, including doctoral dissertations, need to be submitted for review by the RRC. Agencies or individuals who wish to conduct research studies within this school district are obligated to the guidelines of the department.

Informed consent forms were obtained from the expert panel participants who were interviewed for the study. Additionally, the researcher thoroughly explained the necessity of confidentiality for the purposes of the study. Due to the fact that colleagues were being discussed, confidentiality was of great importance. The confidentiality of responses was assured and the privacy of confidentiality of individuals who completed the interviews was protected. While the names of the principals needed to be disclosed to the panel, they are not reported in the study results. The researcher’s notes will not be sent or kept in an electronic format to minimize the risk of any breach of confidentiality.

All information and data obtained by the researcher will be destroyed 3 years after study completion. Data collected were for no other reason than research.
Description of Instrument

_Circumstances are the rulers of the weak;

they are but the instruments of the wise._

-Samuel Lover

The established paragraph definition Change Facilitator Style descriptors were used (Hall & Hord, 2011). These forms were used with permission from its creator. The letter for seeking permission for use and the letter granting that permission are included in the study in the Appendices. This Change Facilitator Style will be the independent variable in the study. An independent variable is an “attribute or characteristic that influences or affects an outcome of dependent variable” (Creswell, 2008, p. 640). The principals in the study would represent one of three styles: Initiator, Manager, and Responder.

Initiator principals are usually viewed as visionary and they know what direction to move a school. The best interest of students is sought, even if policy changes are needed to ensure this idea. These leaders have been metaphorically called chess players, as their moves are plotted and well thought out in advance. Initiators follow policies, regulations, and rules and their style is action oriented (Hall & Hord, 2011). Manager principals advocate change that is reflective of a current situation. These leaders explore current situations and seek input from both sides of an argument. They do all the different jobs and take care of the responsibilities within the job. There is a tendency to micromanage instead of trusting others to do their work. A game of checkers describes the Manager; there are rules and moves, but they are simple and uncomplicated. Managers have positive relationships with their teachers (Hall & Hord, 2011).
Responder principals spend time being concerned about the perceptions of others. This delays their decision-making. Flipping a coin would be the game of chance that best portrays Responders, as either option may work out for any situation. A smooth running and well-disciplined school is their focus. Decisions are difficult without getting as much input as possible. Vision is limited in Managers, due to their time spent gathering opinions (Hall & Hord, 2011).

![Figure 5. Consensus Rating for rating principals according to Change Facilitator Style.](image)

The Expert Panel used these three definitions to assess the Change Facilitator Style of each study school’s principal. All principals do not fit exactly into one of the three (Initiator, Responder, or Manager) categories. The ratings were done using a one hundred point number line (Figure 5). Using this continuum accommodates principals’ styles that are not perfect arch types for one of the three prior defined Change Facilitator Styles. The lead scholar who was the originator of the three Change Facilitator Styles guided panel discussions. Through discussion, the panel came to a consensus rating for each principal from the nine selected schools.

A number line from 0 to 100 was used to determine consensus rating. Responders are positioned at 30 on the scale, Managers at 60, and Initiators at 90 (Hall & Hord, 2006). The use of the paragraph descriptions, along with these number points, allowed for a person to be a combination of styles.
Measures of Student Learning

*Leadership and learning are indispensable to each other.*  
- John F. Kennedy

The Nevada State Report Card will be used for the CRT scores and AYP designations. These scores were the dependent variable. The dependent variable is “an attribute or characteristic that is influenced by the independent variable” (Creswell, 2008, p. 638). There was not a specific pre-test; the CRT would act as the posttest. Comparisons were done from school to school in both English-language arts and mathematics.

The CRT is a standardized, standards-based assessment and is a snapshot of student performance at one point in time (i.e., summative). The test scale is the metric used to report the test results. Nevada’s CRT test results are reported on a scale from 100 to 500 points. This scale was developed using industry-standard methods. Raw scores, number correct, or percent correct scores cannot be used because they are dependent on the particular population of students that took that test in *one* year. With the test scale, such comparisons are valid and reliable. Scale scores allow for yearly equating of test forms/versions. By equating the test, the state can improve test security while providing valid and reliable results. Measured Progress (the test vendor) and the University of North Carolina at Greensboro (an outside evaluator) evaluate the equating results statistically to ensure quality. The test consists of multiple choice and constructed response items/questions. A multiple-choice item/question will have four answers choices. Constructed response items/questions allow students to write, show their work, and/or explain their thinking. The CRTs are not timed. As Nevada’s CRT testing
vendor, Measured Progress is responsible for scoring the test through scanning bubbled responses and scoring constructed response questions/items.

Validity and Reliability of Change Facilitator Style and Nevada Criterion Reference Test

*A new and valid idea is worth more than a regiment and fewer men can furnish the former than command the latter.*

-Oliver Wendell Holmes, Jr.

Creswell defines validity as being able to “draw justifiable and meaningful inferences” from the data about the sample population (Creswell, 2008, p. 649).

The CRT is constructed over a two to three year timeframe. The process includes all steps from question/item writing and form/version assembly to field-testing and evaluation of results.

First, test questions, or items, for the CRT are drafted by Nevada educators. Groups of grade-level experts who are Nevada teachers and content specialists write items/questions to be aligned to grade-specific Nevada Content Standards. They use item specifications to guide their work.

Next, WestEd, a nationally recognized testing company, reviews, edits, and revises the draft items. WestEd follows Nevada’s test design for each content and grade level to create the assessment forms. These forms represent the breadth and depth of necessary content by sampling the Nevada Content Standards.

All test questions/items and test forms are evaluated carefully. Evaluations were conducted by WestEd, Measured Progress (the test vendor), the Nevada Department of Education, and an outside evaluator. Content and bias reviews identify potentially
problematic questions/items and result in edits. All test questions/items are administered to Nevada students, and statistical information from students’ performance is used to evaluate each test question/item and each test form.

Reading passages, writing prompts, and test items/questions go through a bias review process to ensure valid and reliable assessments. A committee of community representatives and grade appropriate educators review passages, writing prompts, and items/questions for bias. Bias review committee members receive training on assessment expectations and bias definitions used by the state. The committee provides feedback to the state on the potential use of passages, writing prompts, and items/questions.

Prior to any item/question appearing live on a state assessment, it is first field tested to ensure the item is valid and reliable. Field-testing items/questions allows for item characteristics, statistical information about how Nevada students did on the items/questions, to be taken into account when creating the operational or live forms. Operational forms, or versions, include those questions/items that count towards a student’s score. Items that do not meet Nevada’s parameters are not used as live items/questions.

According to Nevada Revised Statute 389.015, the CRT must be “…printed and scored by a nationally recognized testing company in accordance with the process established by the testing company.” Nevada’s testing company, Measured Progress, is located in New Hampshire.

These criterion-reference tests measured how well students have learned a given curriculum, and identify strengths and weaknesses. The criterion reference test measured
students’ mastery of particular skills and instructional objectives; it did not compare one student to another or rank students.

Reliability indicated individual scores from an instrument should be nearly the same or stable on repeated administration of the instrument and that they were “free from sources of measurement error” (Creswell, 2008, p. 646).

Procedures for Collecting Data

*Almost all quality improvement comes via simplification of design, manufacturing... layout, processes, and procedures.*

-Tom Peters

A meeting was conducted with the designated informants (referred to as the Expert Panel). The paragraph designations (Appendix I) were used to determine the Change Facilitator Style. The researcher, along with the Lead Scholar who is the originator of the Change Facilitator Style descriptors, listened to dialogue and facilitated discussion among the informants. Each school’s principal was discussed. The lead scholar probed for examples and indicators of what each principal did. At the end of the discussion, a consensus rating was established for each principal.

The researcher used the Nevada State Report Card, via the State of Nevada’s website, to obtain the student scores.

The Nevada State Report Card is the Nevada Department of Education’s public education accountability reporting website. In compliance with both federal and state laws, the website assists users in locating information pertaining to K-12 public education in Nevada. Through this website users have access to school, district, and state
achievement information on Nevada’s state-mandated assessments, student discipline and attendance, qualifications of teachers, graduation and dropout rates, fiscal data, and more. For convenience, users can download and print state, district, or school-level reports of accountability (often referred to as Report Cards). Features within the website will allow users to do in-depth research into relevant educational issues. For example, users can make achievement comparisons among schools matched on demographic characteristics using the Custom Search feature. Users can also look at differences between school districts in terms of categories such as per-pupil expenditures using the Compare feature. Additionally, users can look at the various sources of funds received by school and districts for professional development activities.

Beyond the Nevada Report Card, the researcher was granted access to the school district’s Central Information System (CIS). This CIS contains data specific to the district and is considered to be a more accurate representation of the school’s overall achievement. The CIS files filters out the scores of any students who did not complete the test (versus the Nevada Report Card that includes all enrolled students). The CIS files also account for any students who had multiple transfers within a school year, within the district. The data from the district’s CIS is more reflective of the school’s performance for the students who had the most time spent at the school for which they are recorded as a tester.
Procedures for Analyzing Data

All are lunatics, but he who can analyze his delusions is called a philosopher.

-Ambrose Bierce

The analysis of variants will be the statistical measure used in this study (ANOVA). All statistical methods require assumptions. There are two to consider: validity assumptions and distribution assumptions. Systematic error is also called a bias. The lack of a bias is validity. There are three major validity assumptions: no selection bias, no information bias, and comparability of groups when comparing the effects of exposure. In addition to validity assumptions, there are distributional assumptions. Distribution assumptions for ANOVA are: independence of observations within and between samples, normality of sampling distribution, and equal variance (Glass, Peckman & Sanders, 1972, p. 237-288). Analysis of variance is so called because it compares the variance (variability in scores) between the different groups (believed to be due to the independent variable) with the variability within each of the groups (believed to be due to change) (Pallant, p. 242).

In conjunction to the ANOVA, the Tukey test will be used. If the ANOVA leads to a conclusion that there is evidence that the group means differ, there is an interest and necessity in investigating which of the means are different. This is where the Tukey multiple comparison test is used. “Tukey’s multiple comparison test can be used to determine which means amongst a set of means differ from the rest” (Olleveant, 1999, p. 304). Tukey’s multiple comparison test is also called Tukey’s honestly significant difference test (Tukey’s HSD).
When there are two groups of observation, they could be compared using the t-test. When there are more than two groups, as is the case in this study, it would be inappropriate to simply compare each pair using the t-test because of the problem of multiple testing. The correct way to do the analysis is to use the one-way analysis of variance (ANOVA) to evaluate whether there is any evidence that the means of the populations differ.

Limitations and Delimitations

*Any man who selects a goal in life which can be fully achieved has already defined his own limitations.*

-Cavett Robert

With each study there are limitations. In this study, there were three to note. There was also one delimitation.

The first limitation is the concern over the quality of the CRT exam. Respected educational personnel, as it relates to the curriculum taught, have questioned the quality of the questions on the CRT. There are question changes each year, put in place by the State of Nevada’s Department of Education, but there remains discontentment on the quality of the questions and the seemingly disconnect between the state standards and the items tested.

The second limitation was related to the Expert Panel. While the Expert Panel that came together to discuss the principals’ Change Facilitator Style had a working knowledge of each school leader, the final consensus rating was limited to the quality of their judgments. To some extent each panel member had a different level to the depths of
their professional relationship with the principals. At the same time, by using a panel with diverse perspectives, the final rating of the Change Facilitator Style represents a broad view of how each principal provides leadership.

Another limitation of the study is the use of only one source (the Expert Panel) to determine the Change Facilitator Style of the principals. There was not a systematic check against another source. This could be addressed by using the Change Facilitator Style Questionnaire (Hall & George, 1999) with teachers to appraise their principal’s leadership.

The conclusions of the study may be delimited by the population sample since purposeful sampling was used. Further delimitations exist because the sample included only the perceptions of those on the Expert Panel, not the entire staff of each principal. A final limitation is that the sample was not randomly selected. The findings may not be able to be generalized beyond this sample.

Summary

_We all now tell stories by cutting from one dramatic scene to the next, whereas Victorian novelists felt free to write long passages of un-dramatic summary._

-Ken Follett

This chapter examined the following topics: The examination of the principals’ leadership styles in the study involved a correlational analysis of the most effective leadership style affecting student achievement. The method and techniques were designed to provide data to evaluate a theory. The theory was related to that of the Change Facilitator Style. It was designed to provide data to evaluate if the association of
the principals’ leadership styles influenced student achievement. The following chapter is the findings of this study.
CHAPTER FOUR
RESULTS AND FINDINGS

*First comes thought; then organization of that thought; into ideas and plans; then transformation of those plans into reality.*

-Napoleon Hill

This chapter presents the following sections: Principal’s Change Facilitator Styles, Researcher Observations on the Expert Panel Session, Change Facilitator Style and Adequate Yearly Progress, Levene Statistic Test and ANOVA, Descriptions and Effect Size, Tukey Honestly Significant Difference Tests, Initial Findings of Super Cohorts In Reading and Math, Mean Scores and Principal’s Change Facilitator Style for Super Cohort Across Three Years, Mean Scores and Principal’s Change Facilitator Style for Grade 5 Super Cohort, and Student Performance of Responder, Manager or Initiator Led Schools.

Principal’s Change Facilitator Style

*To do the writing, I have to have done the research.*

-Jean-Jacques Annaud

Table 4 is a summary of the ratings of the principals’ Change Facilitator Styles, along with the number assignment to each through Expert Panel’s consensus. As described in the previous chapter, the Consensus Rating number line was used to assign a Change Facilitator Style to each principal. For the purposes of this study, the predetermined cut offs of 0-45 for Responders, 46-74 for Managers, and over 75 for Initiators. These were the same determinations used in the study conducted in the Hartford Public Schools.
Table 4

*Change Facilitator Style Consensus rating*

<table>
<thead>
<tr>
<th>Principal / School</th>
<th>Change Facilitator Consensus Rating</th>
<th>Change Facilitator Style</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bowker</td>
<td>36</td>
<td>Responder</td>
</tr>
<tr>
<td>Burgos</td>
<td>38</td>
<td>Responder</td>
</tr>
<tr>
<td>Neill</td>
<td>40</td>
<td>Responder</td>
</tr>
<tr>
<td>Noriega</td>
<td>60</td>
<td>Manager</td>
</tr>
<tr>
<td>Stockman</td>
<td>66</td>
<td>Manager</td>
</tr>
<tr>
<td>Chaffee</td>
<td>76</td>
<td>Initiator (closer to Manager)</td>
</tr>
<tr>
<td>Munn</td>
<td>78</td>
<td>Initiator</td>
</tr>
<tr>
<td>Damron</td>
<td>80</td>
<td>Initiator</td>
</tr>
<tr>
<td>Langley</td>
<td>82</td>
<td>Initiator</td>
</tr>
</tbody>
</table>

The following section displays the narrative comments that were recorded by the researcher during the Expert Panel discussions. The principals were discussed randomly and not necessarily in the order displayed in table 4. The following results are listed from least to greatest numerically based on the CFS rating given to each principal/school. Also included in this section is the range from lowest to highest of the initial individual
panel member assignments before the group discussion and development of the consensus rating.

Principal Bowker

Expert Panel Range of Change Facilitator Style: 25-40

Expert Panel Consensus Rating of CFS: 36

- He is friendly.
- He likes to keep all conversations personal, not professional.
- When he’s asked professional questions, he answers them briefly.
- He lets others take the lead.
- He has great difficulty disciplining any employee, even when it is very necessary.
- He’s hired very good people to surround him.
- He wants to talk about anything except school improvement.
- He likes the others with him to have strong personalities.
- He’d have a hard time helping a staff member with any instructional questions.
- He is only good enough to keep things a float.

Principal Burgos

Expert Panel Range of Change Facilitator Style: 30-40

Expert Panel Consensus Rating of CFS: 38

- She protects her staff.
- She knows the rules with her Title 1 paperwork.
- She doesn’t let people on her campus very often.
- She listens to people, but nothing changes.
- Nobody knows what is going on within her building.
• Required forms do not always come in on time.
• If she is asked about her school, she thinks everybody is doing everything right.
• There is never a resolution to any problem at the school.
• She doesn’t see a need for change.
• Her focus is not student achievement.

Principal Neill

Expert Panel Range of Change Facilitator Style: 32-50
Expert Panel Consensus Rating of CFS: 40

• She sees her role as the budget and schedules, and allows the teachers to teach.
• She defers to her staff, does not answer on their behalf.
• There is no follow-up at her school.
• She wants things to run smoothly.
• The grounds of her school are immaculate.
• She invites in outsiders to deliver hard messages.
• She avoids making decisions.
• She sees a whole child, not just academics.

The three principals previously described were, by consensus, all rated Responders. Hall and Hord (2011) describe these leaders as “letting things happen”. They are described as friendly and their concerns are for the feelings of others. Responder leaders delay making decisions and others are allowed to take the lead.

Principal Noriega

Expert Panel Range of Change Facilitator Style: 43-72
Expert Panel Consensus Rating of CFS: 60
• She wanted to know how much something cost before she even heard anything else about a program.

• She’s driven by budget.

• What is happening with her staff rarely comes up in her conversations nor does she talk about what is good for kids.

• She does what is expected but does not go beyond.

• She has no innovative thinking.

   Principal Stockman

Expert Panel Range of Change Facilitator Style:  55-70

Expert Panel Consensus Rating of CFS: 66

• She schedules the day-to-day operations of the building.

• She does push her staff and her community.

• She is strong willed.

• She refuses to conform to all rules.

• She gets results but they may be based on luck.

These two principals were deemed to be Managers. Many of the comments mentioned by the Expert Panel are very similar to those in the descriptors of Hall and Hord (2011). These leaders are rule followers and they help events happen in their buildings. They are organized and concerned with budgets and resources.

   Principal Chaffee

Expert Panel Range of Change Facilitator Style:  70-80

Expert Panel Consensus Rating of CFS: 76

• She knows the plan of her school.
• She has ups and downs in her year.
• She pushes but she is also protective of her staff.
• She takes a lot of time to process her decisions.
• As she neared retirement, she was less driven.
• Her focus was on the community and not always on test scores.

Principal Munn

Expert Panel Range of Change Facilitator Style: 68-80
Expert Panel Consensus Rating of CFS: 78

• She’s a good school manager.
• She’s great with budget.
• She’s a change leader.
• She opened a new school and was very organized with all the details.
• She doesn’t really have a clear vision.
• She gathers other people’s opinions.
• She does use staff differently.
• She makes sure the kids get what they need.
• She does challenge people and expects them to be ready to defend their choices.
• She has adapted well to both an affluent school and a low-income school.
• She has a loyal staff following.
• She organized an entire language academy.

Principal Damron

Expert Panel Range of Change Facilitator Style: 74-85
Expert Panel Consensus Rating of CFS: 80
• She attends the optional trainings, but still wants more one-on-one training.
• She focuses on one thing at a time.
• Everybody (her staff) knows what he or she is supposed to be doing.
• She finishes a project before starting a new one.
• She convinces her staff that they have input.
• She is innovative in parent involvement and scheduling.
• She follows most rules.
• She has very high expectations.
• Her goal is to move forward academically.
• She has told her boss that she is not going to do certain requirements.

Principal Langley

Expert Panel Range of Change Facilitator Style: 80-90

Expert Panel Consensus Rating of CFS: 82
• She calls into central office to ask clarifying questions more than anyone else.
• She pushes her staff.
• Her staff knows the vision of where they are going.
• She doesn’t really care if her staff is happy about changes; she ensures they happen.
• She is not afraid of changes.
• She thinks long and hard about long range plans.
• She will skirt around a policy or a rule if she thinks it’s in the best interest of kids.
• Her talk is about business, yet she has compassion.

These four principals, according to the Expert Panel and the Consensus Rating
number line are all Initiators. They have a strategic sense and are always thinking ahead. They push with passion and have a vision. There are not coincidences at their buildings; everything is made to happen (Hall and Hord, 2011).

Researcher Observations on the Expert Panel Session

*Everything that happens, happens as it should, and if you observe carefully, you will find this to be so.*

-Marcus Aurelius

The conversations held with the Expert Panel were frank and lively. In the researcher’s opinion, the panel members did not hesitate to speak candidly. The seriousness of the research being conducted seemed to be well understood. The Lead Scholar guided the discussion of the first principal. That discussion ran a bit longer than the others. The Expert Panel had the most to say about the principals at each end of the spectrum. They had specific examples to share and stories to tell. There was very little disagreement concerning those in the general range of Responders and Initiators. The struggle dealt with those principals in the middle. There was less conversation and examples. The Expert Panel did not display the enthusiasm for describing the Manager Principals. They agreed that the Manager Principals did the job (with more efficiency than that of Responders), but were not remarkable and not as centered on student achievement as they described with the Initiators.
Change Facilitator Styles and Adequate Yearly Progress

*The secret of all victory lies in the organization of the non-obvious.*

-Marcus Aurelius

Table 5 represents the Adequate Yearly Progress (AYP) of the schools in the study, along with the principals’ Change Facilitator Style. Due to the use of the Super Cohort for the student analysis (those students who had been in the school for three consecutive years and tested in grade 5) only the AYP for the year 2010 was included.

Table 5

*Adequate Yearly Progress compared to Change Facilitator Style*

<table>
<thead>
<tr>
<th>School</th>
<th>Change Facilitator Style</th>
<th>Adequate Yearly Progress for 2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bowker</td>
<td>36</td>
<td>No</td>
</tr>
<tr>
<td>Burgos</td>
<td>38</td>
<td>No</td>
</tr>
<tr>
<td>Neill</td>
<td>40</td>
<td>No</td>
</tr>
<tr>
<td>Noriega</td>
<td>60</td>
<td>No</td>
</tr>
<tr>
<td>Stockman</td>
<td>66</td>
<td>Yes</td>
</tr>
<tr>
<td>Chaffee</td>
<td>76</td>
<td>Yes</td>
</tr>
<tr>
<td>Munn</td>
<td>78</td>
<td>No</td>
</tr>
<tr>
<td>Damron</td>
<td>80</td>
<td>No</td>
</tr>
<tr>
<td>Langley</td>
<td>82</td>
<td>No</td>
</tr>
</tbody>
</table>

Table 5 shows that seven of the nine schools did not make AYP during the year the in which study was conducted. The principals for those seven schools had CFS ratings that ranged from 36-82, representing the lowest of the Manager ratings to the highest of the
Initiator ratings. One of the schools (Stockman) that demonstrated AYP within the study period had a principal rating of 66, indicating a Manager Principal. The other school (Chaffee) had a principal rating of 76, indicating an Initiator Style Principal.

Levene Statistic Test and ANOVA

*Here is the test to find whether your mission in life is finished; if you’re alive, it isn’t.*

-Richard Bach

The first step was to apply Levene’s test of homogeneity of variances, a procedure designed to test if all groups are equal. If the Levene output p-value is greater than .05, equal variances can be assumed and standard ANOVA procedures can be carried out using the Tukey HSD analysis. Such is the case in the data in this study. In cases where the assumption of homogeneity of variances is violated (p < .05), the Welch robust test of equality of means F-ratio would be reported and analysis carried out using Tamhane’s T2 procedure. The results of the Levene Statistic Test and the ANOVA are represented in the Appendices.

Descriptions and Effect Size

*A picture is worth 10,000 words, but only those described in the picture.*

*Hardly any sets of 10,000 words can be adequately described with pictures.*

-Alan Perlis

As explained in the previous chapter, a Super Cohort was used for this study. This cohort was formulated using the scores of students in grade five who had attended the
school during testing for three consecutive years. In Table 5, the first column on the left side is a numeral that indicates the principal’s Change Facilitator Style.

It is to be noted that the principal who scored 36 on the Change Facilitator Style rating was not used for the analysis of test scores. While the demographics within the school (student minority population and free/reduced lunch percentage) were similar to the other schools represented in this study and the school was within an urban district, the setting of the school was decidedly rural. The external factors created differences (the rural setting of the school and the distance between this school and any other school) for analysis in this format. Therefore, the decision was made to exclude these results from the analysis of test scores.

The n count for the schools ranged from 94 to 35 students. This is considered adequate for estimating effect size, also known as strength of association. “Effect size is a simple way of quantifying the difference between two groups that has many advantages over the uses of tests of statistical significance alone” (Coe, 2002). Effect size emphasizes the size of the difference rather than confounding this with the sample size. It is particularly valuable for quantifying the effectiveness of a particular intervention, relative to some comparison.

In this study, it is the principal’s Change Facilitator Style’s relative to the students’ performance on a standardized test. The effect size is the standardized mean difference between the groups. The Standard Deviations are noted in the Appendices. To interpret the strength of the effect size, there are statistical guidelines. “Cohen’s \(d\) presents differences between groups in terms of standard deviation units” (Pallet, 2007, p. 208). Using this measure, the effect size is considered to be medium (Pallet).
Tukey Honestly Significance Difference (HSD) Tests

*Nearly all men can stand adversity, but if you want to test a man’s character, give him power.*

-Abraham Lincoln

The previous chapter defined the Tukey HSD. It served as the main statistical analysis procedure for these data. It is a single-step multiple comparison procedure and the statistical test generally used in conjunction with an ANOVA to determine which means are significantly different from one another. It compares all possible pairs of means. In other words, the test compares the means of every treatment to the means of every other treatment.

In tables 6 and 7, the numbers 38-82 represent each principal’s Change Facilitator Style. The table compares each principal’s CFS to one another. The mean difference and standard error are also included. The statistical significance is in the table as well.

There was a statistical significance difference (\(<.05\)) between the mean scale scores and the principals in the following ways: Responder to Responder, Responder to Initiator and Manager to Initiator.

There were difference in both reading and math. The proposed reasons for those differences will be explored in the next chapter.
Mean Scores and Principal’s Change Facilitator Style for

Super Cohort Across Three Years

*It took us three years to build the NeXT computer. If we’d given customers what they said they wanted, we’d have build a computer they’d have been happy with a year after we spoke to them, not something they’d want now.*

-Steve Jobs

The graphs in Figures 6 and 7 display the performance of the students in the super cohort in the third grade year, their fourth grade year ad their fifth grade year. Also displayed on the charts is the mean scale of the group of students for each year, at each school.

![Graph showing Mean Scale Scores](image-url)

*Figure 6. Super Cohort three years reading scores.*
Figure 7. Super Cohort three years math scores.

Mean Scores and Principal’s Change Facilitator Style for Grade 5 Super Cohort

We can chart our future clearly and wisely only when

we know the path which has led to the present.

-Adlai E. Stevenson

Figures 8 and 9 are a representation of the Raw Scale Score (RSS) of the Super Cohort student’s performance on the Nevada CRT, plotted with the principal’s Change Facilitator Style. Again, it is to be noted that only 8 CFS’s are on this figure. The one was purposefully left off due to the school’s rural status, within an urban district.

In reading, these mean scale scores range from a low of 245.91 to a high of 291.61. This is represented on the following figure as well as in the descriptions presented earlier.
in this chapter. The lowest mean score was associated with an Initiator principal, and the highest mean score was associated with that of a Responder principal.

In math, the mean scale scores range from a low of 258.21 to a high of 323.36. The lowest and highest mean score were both from schools where it had been determined, by the CFS Consensus Rating, were lead by Manager principals. Table 8 represents an additional view of these math comparisons in rank order.

Figure 8. Reading plot for mean score.
Figure 9. Math plot for mean score.

Table 6.

<table>
<thead>
<tr>
<th>Reading Mean Scale Score (Lowest to Highest)</th>
<th>Principal's Change Facilitator Style</th>
</tr>
</thead>
<tbody>
<tr>
<td>245.91</td>
<td>Initiator</td>
</tr>
<tr>
<td>259.38</td>
<td>Responder</td>
</tr>
<tr>
<td>259.89</td>
<td>Initiator</td>
</tr>
<tr>
<td>266.30</td>
<td>Initiator</td>
</tr>
<tr>
<td>273.02</td>
<td>Manager</td>
</tr>
<tr>
<td>288.26</td>
<td>Initiator</td>
</tr>
<tr>
<td>289.49</td>
<td>Manager</td>
</tr>
<tr>
<td>291.61</td>
<td>Responder</td>
</tr>
</tbody>
</table>
Table 6 represents an additional view of the reading comparisons in rank order.

In math, the mean scale scores range from a low of 258.21 to a high of 323.36. The lowest and highest mean score were both from schools where it had been determined, by the CFS Consensus Rating, were lead by Manager principals.

Table 7 represents an additional view of these math comparisons in rank order.

Table 7.

<table>
<thead>
<tr>
<th>Math Mean Scale Score (Lowest to Highest)</th>
<th>Principal's Change Facilitator Style</th>
</tr>
</thead>
<tbody>
<tr>
<td>258.21</td>
<td>Manager</td>
</tr>
<tr>
<td>269.57</td>
<td>Initiator</td>
</tr>
<tr>
<td>297.28</td>
<td>Responder</td>
</tr>
<tr>
<td>300.83</td>
<td>Initiator</td>
</tr>
<tr>
<td>300.98</td>
<td>Initiator</td>
</tr>
<tr>
<td>319.69</td>
<td>Initiator</td>
</tr>
<tr>
<td>323.36</td>
<td>Responder</td>
</tr>
<tr>
<td>339.93</td>
<td>Manager</td>
</tr>
</tbody>
</table>
Student Performance of Responder, Manager, or Initiator Led Schools

*Leaders are visionaries with a poorly developed sense of fear and no concept of the odds against them.*

-Robert Jarvil

Figures 10 through 15 represent the mean scale score of the super cohort students grouped collectively by their school’s principal’s Change Facilitator Style. On each of the graphs, the Responder led schools are represented by a numeral 1; the Manager led schools are represented by a numeral 2; and the Initiator led schools are represented by the numeral 3. There is also a statistical representation of the differences between each grade, each subject, and each Change Facilitator Style. Proposed explanations for these differences will be included in chapter five.

![Figure 10. Reading RMI for Grade Three.](image-url)
Figure 11. Reading RMI for Grade Four

Figure 12. Reading RMI for Grade Five.
Figure 13. Math RMI for Grade Three.

Figure 14. Math RMI for Grade Four.
Figure 15. Math RMI for Grade Five.
Table 8.

*Super Cohort Students in Grades 3, 4, and 5 Statistical Difference*

<table>
<thead>
<tr>
<th>Change Facilitator Style</th>
<th>Super Cohort Students in Grade 3 Statistical Difference</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Reading</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Responder Manager Initiator</td>
<td>Respond</td>
<td>0.015</td>
<td>0.913</td>
<td>0.026</td>
<td>0.990</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Responders</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Manager Initiator</td>
<td></td>
<td>0.012</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Initiator</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Super Cohort Students in Grade 4 Statistical Difference |          |          |          |          |          |          |          |
|--------------------------------------------------------|----------|----------|----------|----------|----------|----------|
| Change Facilitator Style                               | Reading  |          |          |          |          |          |
| Responder                                             |          |          |          |          |          |          |
| Manager                                               |          |          |          |          |          |          |
| Initiator                                             |          |          |          |          |          |          |

| Super Cohort Students in Grade 5 Statistical Difference |          |          |          |          |          |          |          |
|--------------------------------------------------------|----------|----------|----------|----------|----------|----------|
| Change Facilitator Style                               | Reading  |          |          |          |          |          |
| Responder                                             |          |          |          |          |          |          |
| Manager                                               |          |          |          |          |          |          |
| Initiator                                             |          |          |          |          |          |          |
Summary

*Every choice you make has an end result.*

-Zig Ziglar

The following sections were reviewed in this chapter: Principal’s Change Facilitator Styles, Researcher Observations on the Expert Panel Session, Change Facilitator Style and Adequate Yearly Progress, Descriptions and Effect Size, Levene Statistic Test and ANOVA, Descriptions and Effect Size, Tukey Honestly Significant Difference Tests, Initial Findings of Super Cohorts in Reading and Math, Mean Scores and Principal’s Change Facilitator Style for Super Cohort Across Three Years, Mean Scores and Principal’s Change Facilitator Style for grade 5 Super Cohort, and Student Performance of Responder, Manager, or Initiator Led Schools. The tables and figures were based upon information from both the Expert Panel discussion, the assignments of a CFS consensus rating, and the school district’s data set of the Super Cohort of the CRT scores. Chapter five will provide study proposed conclusions. Implications for practice and future research will also be included in chapter five.
CHAPTER FIVE
ANALYSIS OF FINDINGS, IMPLICATIONS, AND CONCLUSIONS

*If you follow reason far enough it always leads to conclusions that are contrary to reason.*

- Samuel Butler

This concluding chapter includes the summary of the following sections: Statement of the Problem, Population, Data Collection Instrument, Methodology, Main and Leading Research Questions, Analysis of Findings and Emerging Themes, Implications for Research and Potential Studies, Implications for Practice and School Leaders, and Final Conclusions.

Statement of the Problem

*You can never solve a problem on the level on which it was created.*

- Albert Einstein

This study sought to identify the relationship between elementary school principals’ Change Facilitator Style and student’s academic achievement, as measured by the Nevada Criterion Reference Test.

Population

*There is no system that is inherently moral if the participants themselves are not.*

- Lee R. Raymond

The population of the study was targeted. Nine elementary schools were selected based upon having over 50% of the students being of a minority race, and over 50% of
the students receiving free/reduced priced lunches. In each of the school, Caucasian was the lower of the student population. The schools ranged in size from 450 students to over 900. Along with those factors, the principal had to have three consecutive years at the school to be included in the study.

Data Collection Instrument

_Data is a precious thing and will last longer than systems themselves._

-Tim Berners-Lee

The established paragraph definition Change Facilitator Style descriptors were used (Appendix I, Hall & Hord, 2011). Change Facilitator Style was the independent variable in the study. The principals in the study would represent one of three styles: Initiator, Manager, and Responder. District office administrators served as key informants (such as professional colleagues; administrators working in specific departments—persons who have a very solid, working knowledge of the principals’ style). They formed an Expert Panel to determine each principal’s Change Facilitator Style. The Change Facilitator Style number line was used to develop the consensus ratings.

Methodology

"Let us be resolute in prosecuting our ends, and mild in our methods of so doing."

-Aquavia

The Change Facilitator Style ratings and the Nevada Criterion Reference Tests were compared to explore possible relationships exists between the principal leadership and
students’ proficiency levels. The analysis of variants the statistical measure used in this study (ANOVA).

Main and Leading Research Questions

*Successful people ask better questions, and as a result, they get better answers.*

-Tony Robbins

There was one main research question, with four sub-questions. The main question was

What is the relationship between elementary school principals’ Change Facilitator Style (CFS) and student achievement/progress on the Nevada Criterion Reference Test (CRT)?

In drawing conclusions, there are two questions that must be asked. First, is there a difference between principals’ Change Facilitator Style and students’ performance on standardized tests and second, how much of a difference? Through the data displayed in Chapter 4, there would appear to be some possible differences in student achievement that are related to differences in principal Change Facilitator Style. The extents for which those differences are both statistically significant and impactful remain open to interpretation. The more detailed discussion of the study questions below explore the possible relationships.

1. What are the key indicators used by district office staff to assign the Change Facilitator Style of a sample of Elementary School Principals?

The Expert Panel’s personal interactions and their cumulative consensus ratings were the main indicators used to determine each principal’s Change Facilitator Style. The
panel’s discussion of each principal’s approach to leadership offered many examples and indicators of CF Style. As emphasized throughout this study, it is the accumulation of individual behaviors that make up one’s style. The Expert Panel was very conscientious in reviewing the Change Facilitator Style paragraph descriptors (Appendix I) prior to assigning a numeric value along the CFS number line. They were observed pausing, thinking, and re-reading multiple times. Furthermore, there were discussions between and among the Expert Panel members before agreeing upon a final Change Facilitator Style. Having in depth first-hand knowledge of how each principal leads their school was a key factor in selecting the members for the Expert Panel. None of the Expert Panel members supervised the principals in this study. However, each Panel member was acquainted with the principals and had working experiences with them.

2. What is the range of Change Facilitator Styles of a sample of Elementary School Principals who have been in their school for three years or more?

The range of the Change Facilitator Styles of the principals in this study was from a low of 36 to a high of 82. As such, this study contained three principals deemed to be Responders, two principals deemed to be Managers, and four principals deemed to be Initiators.

3. What are the relationships between Elementary School Principals Change Facilitator Style and student achievement in English-Language Arts across the three years of grades 3, 4, and 5?

It is to be clearly noted in the answer to this question and the next, that upon review of the data available, a Super Cohort was used for analyses. The Super Cohort was composed of students who had tested at the school of the principals’ whose Change
Facilitator Style was being explored for grades 3, 4 and 5. This decision was made because there were enough students in each of the n counts to compose an effect size, and when comparing the students’ scores to that of a principal, these students had the most time in the school building. The assumption being that across three years there was greater likelihood of the principal having an impact (positively or negatively) on student learning.

As indicated on each of the plots that were displayed in the previous chapter, as well as the chart with the statistical differences in the area of reading, the schools that had Manager led schools consistently performed higher than schools led by Responders or Initiators. The proposed interpretations for these results will be examined later in the chapter.

4. What are the relationships between Elementary School Principals Change Facilitator Style and student achievement in Math across the three years of Grades 3, 4 and 5?

It is to be noted again that the Super Cohort was used for these analyses. In math, the schools that were led by Managers outperformed the schools that were led by Responders or Initiators. The proposed interpretation of these results will be examined later in this chapter.
Analysis of Findings and Emerging Themes

*Even on the drum level, it’s all about stating your theme,*

*going back to certain things that need to be emphasized,*

*and not doing fills for the sake of fills.*

- John Otto

The study included three principals deemed to be Responders, two principals deemed to be Managers, and four principals deemed to be Initiators. It must be noted that one of the principals was rated at a 76, just above the cut-off between a Manager and an Initiator. Though this could be reason to reassign this principal as being more of a Manager the researcher and the Lead Scholar made the determination to leave the rating as set by the panel’s rating. Also, the panel members noted that the principal was very close to retirement and that in the past had a Change Facilitator Style that was truly that of an Initiator. Only more recently did this principal exhibit more of the Manager traits.

In the area of reading, when looking at the grade 5 students (those who had been with the school principal the longest), the two lowest mean standard scale scores (thus, the overall lowest performing students on the standardized academic achievement tests) were from the two principal led schools who had the most significant difference in their Change Facilitator Style. It is to be noted that the next closest schools, both in their standard mean scale score and the principals’ Change Facilitator Style, had the highest mean scale scores. If it were only the lowest scale scores with the most extreme Change Facilitator Styles, it could be proposed that the principals’ styles were so removed from the instruction of the school and so focused on the vision of the school, that it had an impact on student achievement. However, with the highest scores coming from what is,
according to definition, only a slightly less laissez-faire principal and a slightly less driven principal, that conclusion does not seem to be one that can be stated with certainty.

In the area of math, when looking at the grade 5 students (those who had been with the school principal the longest) the second highest mean scale score was that from the school that had the lowest ranked Change Facilitator Style. The school with the highest rated principal on the Change Facilitator Style had the second lowest mean scale score. This offers a different perspective than that of the reading scores. With the exception of the highest rated Initiator principal mentioned above, the next three highest mean scale scores were from Initiator principals.

The very highest mean scale score of student performance in math was from a Manager led school. In referring to the descriptors of the Change Facilitator Styles there is a lot of rule following and order that comes in schools with Manager principals. The subject area of math also contains rules and order and therefore it could proposed that there is a possible relationship between principals focusing on structure and students achieving more in mathematics. There was a similar finding in the Hartford study (Hall, et. al, 2008.)

With the use of the Super Cohort, which statistically was determined to be more powerful, the analyses of students’ performance over the course of multiple years was not conducted. The Super Cohort made the assumption that students’ scores would either rise or fall consistent with the impact of the principals’ Change Facilitator Style. The scores that represent the mean scale score could be a statistically significant improvement (or conversely a statistically significant decrease) than that of the mean for the same type of cohort. What could not be determined from any of the analyses included in this study
was the level of performance of the students at the time each of the principals were assigned their school. The study analysis results indicate that the Super Cohort students in Manager led schools had the highest mean scores for both reading and math.

Implications for Research and Potential Studies

"The outcome of any serious research can only be to make two questions grow where only one grew before."

- Thorstein Veblen

Through this work, implications can be identified for other studies. Four potential studies are discussed below.

Potential Study #1

There is a need for an additional replications of this study topic. The original study was completed in Hartford, Connecticut (Hall, et al., 2008). This dissertation study is the first attempt at a replication. Similar studies should address other school settings and perhaps even secondary schools. Such studies would likely be based in multiple measures of student learning. Depending on the findings from such studies, in time it might be possible to conduct a meta-analysis.

Potential Study #2

More than 25 years ago, Glassman wrote about possible relationships between student achievement and the school principal. Her work, through the Center for the Study of Evaluation at the University of California, Los Angeles, concluded that while teachers believe that teachers should not be held accountable for their students’ performance on tests, principals feel that principals should. “The role of the elementary principal is
critical (in improving test scores), not only because the principal is generally accountable for all that goes on at the school level, but also because the current call is for the principal to be specifically accountable for the performance of the students” (Glassman, 1984, p.283).

**Potential Study #3**

Hall, et al.’s work (1988, 2002, 2008, 2011) concentrated on principals’ Change Facilitator Style, and much was learned about key behaviors and the different ways principals can facilitate school improvement. The styles described by Hall, et al. (Initiator, Manager, Responder) represent those used for this study. However, it is recognized that there are other styles that defy being categorized. One is the Despot, who, while strong like the Initiator, listens to no one and just decrees change. There are also various forms of resistors that could be imagined, such as Covert Saboteur or Guerilla. The study of those would be centered on reviewing school improvement failures.

**Potential Study #4**

Another potential study would be centered on professional development programs. A question that inevitably was asked when researching and discussing principals’ style was, “Can it be changed?” The short answer would seem to be no. This is mainly due to research and training experiences that found style to be very closely linked to personality and that a person’s overall leadership approach does not appear to be easily changed. Individual behaviors can be changed for short periods of time, but the change facilitator style continues. On this theme, there is not much likelihood that any mandate, direction, or staff development training would result in a major difference in ones Change
Facilitator Style (Hall & Hord, 2011). An ideal possible scenario for changing one's style might include ongoing, continual, and concerns-based coaching.

Implications for Practice and School Leaders

"In theory, there is no difference between theory and practice; In practice, there is."

- Chuck Reid

If with replication and further research the emerging trends identified in this study are supported there are a number of implications for practice. Three potential implications for practice are briefly described below.

Implication #1

- Human Resources, and those who are responsible for hiring school leaders, can review this study and perhaps consider its relevance to hiring of entry-level administrators.

In December 2002, then New York City School Chancellor Joel Klein recognized the need to recruit and retain top principals. He announced his intention to create the New York City Leadership Academy for this purpose. The first graduating class was sent to head up schools in 2004. Despite the most intensive and costly principal training program in the United States, the results have fallen short of expectations. Nothing in their studies prepared them for the daily challenges they faced.

The questions raised about the hiring of new principals who are put into fast-track programs are reminiscent of those posed during World War II about recruits called the 90 Day Wonders. Faced with the urgent need to turn out more officers, the army graduated second lieutenants with just three months of training, rather than the usual four years.
For the most part, these newly minted officers were looked down upon by the officers who had achieved their rank through traditional routes and by enlisted men who were not accustomed to such fast-track supervisors (Garnder, 2011).

Yet, despite all the doubts raised, the Harvard Graduate School of Education at the end of 2009 announced a new doctoral program degree in educational leadership. It is the first new degree offered by the school in 74 years. The three-year program is tuition-free and conducted with faculty from the Harvard Business School and the Harvard Kennedy School of Government. Its goal is to develop leaders with creativity, intellect, and professionalism to help transform public schools.

Although these new programs are innovative and may be an improvement, most educators still say there is nothing like working up through the ranks of teaching to prepare candidates to become principals. A review of the data in this study, including the Change facilitator Styles of principals who demonstrated success with improving student achievement would likely offer insights.

Implication #2

• Placement of principals, with known styles of either Initiator or Manager, can be better matched to school needs.

Because leading schools out of chronic failure is harder than managing a successful school (requiring more creative problem-solving abilities and stronger leadership, among other skills) the supply of principals capable of doing the work is tiny (Dillon, 2011). Michael Casserly, executive director of the Council of Great City Schools, said, “This was a human capital problem; these people don’t grow on trees.”
The aggressive $4 billion program began by the Obama administration in 2009 to radically transform the country’s worst schools included, as it centerpiece, a plan to install new principals to overhaul most of the failing schools. That policy decision, though, ran into a difficult reality: there simply were not enough qualified principals-in-waiting to take over. Most school superintendents also complained that replacing principals could throw their schools into even more turmoil, hindering nascent turnaround efforts. (Dillon, 2011)

Through the review of Change Facilitator Styles, and the distinction of the differences between the known strengths and perceived weaknesses, the match between the needs of a school and the style of the principal could considered prior to a principal being hired. Based on the major finding of this study, an elementary school with majority minority enrollments that is in need of increasing (or perhaps even turning around) scores on standardized tests may need to ensure that an Manager CF Style principal is selected for the position.

**Implication #3**

- The Change Facilitator Styles can be used, as supporting evidence, to allow principals to remain at school sites for a period longer than 2 years.

The United States Department of Education has current initiatives that contain language that would force the movement of a principal in order to receive funding. The proposed guidelines for awarding Race to the Top grants communicated a powerful message; that states barring the use of student data in decisions about principal evaluations are not eligible for funds (Hershberg & Robertson-Kraft, 2009).
In addition to the use of data for principal evaluations, Race to the Top contains four intervention models for use in failing schools (though the criterion for failing has yet to be determined). All four models require a change in the principalship of the building. The first option requires removing the principal; the second option requires contracting with a private company to run the school rather than the principal; the third option is a charter school, that does not require a principal; and the fourth option requires the hiring of a principal new to the profession (Association of California School Administrators, 2010).

The current sanctions, like many in No Child Left Behind, place heavy emphasis on the idea that Washington, DC knows best for schools. If imposed as written, these provisions will inhibit strong and veteran leaders from moving to certain school sites. The emerging study findings suggest relationships between the Change Facilitator Styles and on student achievement. A primary assertion in the current study was that the effects of principal leadership require longer time. The Super Cohort of students were those who had been in the school for three years. It seems likely that the effects of principal leadership will only emerge over several years. This theme ought to be a consideration.

Final Conclusions

*Now is not the end. It is not even the beginning of the end.*

*But it is, perhaps, the end of the beginning.*

-Winston Churchill

This study began with a literature review about leadership. It explored leadership not only in the area of education, but in the military, business, health care, religion, sports,
and government. The intention is to view leadership through multiple lenses in order to gain alternate viewpoints and additional perspectives. Differences in other fields were noted, but more than not, there were similarities. Similarities included the need for clear expectations, a vision, and high motivation by the leader and the workers.

The role of the principal in a school is ever changing. “Charged with the mission of improving education for all children, the principalship has become progressively more and more demanding and fraught with fragmentation, variety, and brevity” (English, 2005, p. 136). Always adding to and never subtracting from the job description has led to excessively high expectations for principals. “Each new popular educational issue usually translates into another role for the principal” (English, p. 136).

When Wendy Kopp, the founder of Teach for America was asked what qualities does a principal need to be a leader of a school, she responded, “In every case where I’ve seen a transformational school, there’s a principal who really has the foundational experience of having taught successfully. They’re desperately focused on building a strong team, on continuous improvement, and don’t take any constraints as a given” (2011).

It can hardly be argued that education has been reforming for many of the last decades. While the politicos debate what new legislative measure will finally be that magic bullet or one time pill to fix the ails of education, there are many dedicated principals facing the daily challenges of trying to ensure that within their schools students are successful. Isn’t that the ultimate goal of education? Our students cannot be in schools that do not have leaders who are not proven to make an impact on their academic achievement. If our students do not make progress, then our future does not progress.
APPENDIX I

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.
January 16, 2011
Dr. Gene Hall
College of Education
University of Nevada, Las Vegas
4505 Maryland Parkway, Box 3001
Las Vegas, NV 89154

Dear Dr. Hall,

I am requesting permission to use the Change Facilitator Style paragraph descriptors as part of my doctoral study, titled, “It’s the Principal; Examining Relationships Between Principals’ Change Facilitator Styles and Students’ Academic Achievement.”

I plan to form an Expert Panel of school employees to use the paragraph descriptors, along with the consensus number line to determine pre-selected principals’ Change Facilitator Styles. I will then attempt to determine any relationships between those Change Facilitator Styles and student test scores.

I agree to use the descriptors and the number line in their entirety, without editing your copyright. I further agree to give appropriate attribution to Implementing Change; Patterns, Principles, and Potholes, 3rd Edition.

If you require further information, please feel free to contact me at 702-493-3040, or lewis@interact.ccsd.net.

I respectfully look forward to your reply.

Sincerely,

Diane Lewis
Doctoral Student
University of Nevada, Las Vegas
APPENDIX III

LETTER OF APPROVAL

24 January 2011

Ms. Diane Lewis
7221 Queens Crescent St.
Las Vegas, NV 89166

Dear Ms. Lewis:

Thank you for your letter and request to use the construct of Change Facilitator Style, and the paragraph definitions as part of your dissertation study. You have my permission.


I wish you best of success in completing your study.

Sincerely yours,

Gene E. Hall, Professor

Email: gene.hall@unlv.edu
# APPENDIX IV

## STANDARD DESCRIPTORS FOR READING

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**Model**

- **Fixed Effects**: 63.933, 2.930, 266.94, 278.46
- **Random Effects**: 6.174, 258.10, 287.30, 207.231
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# APPENDIX VI
## TUKEY TEST FOR READING

### Multiple Comparisons

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TUKEY TEST FOR MATH

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<tr>
<td>80</td>
<td></td>
<td>-50.114</td>
<td>20.599</td>
<td>.228</td>
<td>-112.83</td>
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</tbody>
</table>
### APPENDIX VIII

**LEVENE’S TEST FOR READING**

Test of Homogeneity of Variances

<table>
<thead>
<tr>
<th>Levene Statistic</th>
<th>df1</th>
<th>df2</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.418</td>
<td>7</td>
<td>468</td>
<td>.196</td>
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</tbody>
</table>

### ANOVA

<table>
<thead>
<tr>
<th></th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>113198.638</td>
<td>7</td>
<td>16171.234</td>
<td>3.956</td>
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<tr>
<td>Within Groups</td>
<td>1912903.799</td>
<td>468</td>
<td>4087.401</td>
<td></td>
<td></td>
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<tr>
<td>Total</td>
<td>2026102.437</td>
<td>475</td>
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</table>
APPENDIX IX

LEVENE’S TEST FOR MATH

Test of Homogeneity of Variances

<table>
<thead>
<tr>
<th>MSS_10</th>
<th>Levene Statistic</th>
<th>df1</th>
<th>df2</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>4.356</td>
<td>7</td>
<td>468</td>
<td>.000</td>
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ANOVA

<table>
<thead>
<tr>
<th>MSS_10</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>265308.708</td>
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<td>37901.244</td>
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<tr>
<td>Within Groups</td>
<td>3475267.820</td>
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<tr>
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<td>3740576.527</td>
<td>475</td>
<td>7425.786</td>
<td></td>
<td></td>
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BIBLIOGRAPHY


Center for Education Policy Analysis (2010, August 10). *Teacher and principal effectiveness.*


The Hunt Institute (2009, June). Realizing the promise of standards-based reform

*Blueprint for Education Leadership, 3*, 1-8.


Jordan, H.M. (2002). *Principal Leadership Style, Flexibility, and Effectiveness in Relationship to Change Facilitator Style*. Dissertation: Regent University, Virginia Beach, VA.


http://www.businessweek.com/magazine/content/10_07/b4166056302366.


http://www.time/com/time/magazine/article/0.9171.1862444.00.html.


Runy, L.A. (2009). Developing tomorrow’s leaders; A skillful, knowledgeable, and motivated workforce is a competitive advantage in today’s complex health care environment. *Hospitals & Health Networks.* Retrieved from


School Improvement in Maryland (2009). Indicators for effective principal leadership in improving student achievement. Retrieved from:


http://findarticles.com/p/articles/mi_m0843/is_5_35/ai_n39397497.


http://www.nevadareportcard.com/

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Graduate Faculty Representative, Linda Quinn, Ph.D.