THE INFLUENCE OF PRINCIPAL TRANSFORMATIONAL LEADERSHIP STYLE ON HIGH SCHOOL PROFICIENCY TEST RESULTS IN NEW JERSEY COMPREHENSIVE AND VOCATIONAL-TECHNICAL HIGH SCHOOLS

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ABSTRACT OF THE DISSERTATION

The Influence of Principal Transformational Leadership Style on High School Proficiency Test Results in New Jersey Comprehensive and Vocational-Technical High Schools

by GAIL S. VERONA

Dissertation Chairperson: Ronald T. Hyman, Ed.D., J.D.

The New Jersey High School Proficiency Test (HSPT) is a “high stakes” test administered as a graduation requirement to all eleventh grade students in New Jersey high schools. High school principals have been held increasingly accountable for successful HSPT scores. Principals are attempting to meet this challenge. Although all school districts in New Jersey and elsewhere will benefit from learning more about the types of principal leadership styles affecting student achievement, secondary vocational schools, in particular, will benefit because they have struggled to have their students achieve passing HSPT scores.

This study used Leithwood’s model of transformational leadership, which adapts Bass and Avolio’s transformational and transactional leadership theory to schools, to conceptualize principal leadership. The researcher utilized a statistical regression model to analyze quantitative data obtained from a questionnaire (Bass and Avolio’s Multifactor Leadership Questionnaire), and conducted interviews with four principals and eight teachers in order to investigate the relationship between principal transformational leadership style and other selected variables on HSPT passing rates in vocational and
comprehensive high schools.

The main result of the study is that transformational leadership of principals significantly affects HSPT passing rates in reading, mathematics, writing, and all sections combined of the HSPT. Additionally, the results show that to achieve the same HSPT passing rates, stronger transformational leadership is needed in vocational schools than in comprehensive high schools. The findings also show that student attendance rate and eligibility for free/reduce lunch have a significant effect on HSPT passing rates, whereas enrollment size and mobility rate do not.

The results of this study have several implications for practice, which include the creation, by boards of education, of transformational leadership profiles for principals to enable boards of education to identify principal candidates who have the most potential to act as transformation leaders; the development of professional development programs to provide aspiring, existing principals with training in transformational leadership; and the hiring of vocational principals who have more than the minimum standard credentials and who exhibit high degrees of transformational leadership qualities.
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CHAPTER 1
INTRODUCTION

Americans are scrutinizing and criticizing schools today more than ever before. Parents and educators nationwide are concerned that American students do not have the knowledge and skills to succeed in school, in college, at work, or in life. Proponents of school reform say that there is a crisis in education, and that higher standards, better tests, more accountability, and other sweeping reforms are necessary.

The growing pressures for greater accountability in our public schools have been the focus of much interest and debate in our country. Educational accountability was the focus of President William Clinton’s State of the Union Address delivered on January 19, 1999. In his speech, President Clinton proposed the rewriting of the Federal Elementary and Secondary Act (ESEA) to be renamed the “Education Accountability Act” and to include specific state and school district requirements of accountability regarding student achievement (Clinton, 1999). In response to the current national demands for greater accountability in schools, school leaders throughout the country need to show results that will convince the public and its policy makers that their schools are effective. For the

1 According to the National Assessment of Educational Progress (NAEP), only about one-third and one-fifth of American students are proficient in reading and mathematics, respectively. Scores are much lower for African-American, Hispanic, and low-income students.
most part, school leaders and the public have agreed that the desired results are scores from high-stakes tests, ones that students must pass to graduate or advance to another grade.

New Jersey is one of the many states in which test scores command growing media attention because of the national effort to raise educational achievement through heightened accountability. Raising educational achievement is a key element of New Jersey’s systemic standards-based reform effort which, according to the New Jersey Department of Education, “has as a primary goal the improvement of performance in rigorous academic and workplace readiness areas for all students in publicly funded elementary, secondary, and adult school education programs” (New Jersey Department of Education, 2000).

In New Jersey, the state administers its High School Proficiency Test (HSPT) to all eleventh-grade high school students. The HSPT is a “high stakes” test in that it serves as a high school graduation requirement for students because systemic reform in New Jersey has increased accountability in the state’s public schools. According to Murphy and Beck (1994), “Commentators on schooling ... have demanded that administrators demonstrate their competency by providing objective evidence that students and teachers are achieving desired outcomes” (p. 5). As such, high school principals are increasingly accountable for successful HSPT scores in their schools.

Because of systemic reform, a heightened state of accountability, and a definition of success that has dramatically expanded (Murphy & Beck, 1994), New Jersey high school principals face a new challenge. Principals are attempting to meet this challenge
by focusing on ways to increase student achievement, as measured by test scores, in their schools. The leadership style of the principal is a reflection of the attempts to raise test scores and, consequently, is a topic of concern in the field of education. Indeed, issues regarding effective leadership are paramount not only in education but in the world of fast-paced industry, institutions, and other organizations, as well. People commonly hear comments such as “he’s a strong leader” and “the powerful leadership of the organization is the reason for its success.” Individuals who witness the success or demise of an organization often attribute it to the strength or weakness of the leader. Yet, for most, the answer to the question “What is effective leadership?” remains unclear.

Principal leadership style is a broad term used to describe the general behavior of principals in terms of their interactions with various groups in the educational setting. The current literature on leadership and leadership style suggests that transformational leadership is an approach to leadership appropriate to the social and organizational context of today’s schools. The concept of transformational leadership first appeared as “transforming leadership” by Burns (1978) who stated, “Such leadership occurs when one or more persons engage with others in such a way that leaders and followers raise one another to higher levels of motivation and morality.... Transforming leadership ultimately becomes moral in that it raises the level of human conduct and ethical aspiration of a leader and the led, and thus has a transforming effect on both” (p. 20). More recently, Yukl (1998) defined transformational leadership as “... the process of building commitment to the organization’s objectives and empowering followers to accomplish these objectives” (p. 324). In the educational arena, Hoy and Miskel (2001),
in their leading textbook on educational administration, introduce graduate students who are prospective administrators to the concept of transformational leadership. The authors say that transformational leadership, simply stated, is similar to what people have in mind when they describe their ideal leader.

Murphy (1991) posited that school leadership in the 1990s is a reflection of the context in which the leadership occurs. Systemic educational reform in New Jersey is based largely on school improvement initiatives reflective of what Leithwood (1994) referred to as “school restructuring” (p. 499). Although restructuring is defined differently for different schools, Leithwood, Jantzi, and Steinbach (1999) stated that schools in the process of restructuring may, for example, “... change their governance structures, open themselves to greater community influence, become more accountable, clarify their standards for content and performance, and introduce related changes in their approaches to teaching and learning” (p. 23). Leithwood (1994) argued that “school restructuring will dominate the change agenda for school leaders for some time to come” (p. 499). Further, Leithwood, Jantzi, & Steinbach (1999) contended that transformational leadership is effective in schools within the context of restructuring.

The empirical evidence is scant, however, regarding the effects of transformational leadership of principals on students. Indeed, Leithwood, Jantzi, & Steinbach (1999) concluded, “In spite of the compelling theoretical and other reasons for advocating transformational leadership in schools at the present time and in the not too distant future, there is still considerable work to be done in clarifying empirically the effects of this form of leadership on students. Nevertheless, the demands on schools
cannot await the outcome of such research” (pp. 31-32). Meanwhile, parents, teachers, and policy makers seek cogent answers to important questions regarding the improvement of schools.

The Problem

The problem that currently exists within the cries for holding principals accountable for raising the test scores of their students is that there are limited empirical data on how leadership styles of principals affect students. More specifically, there is a paucity of evidence from studies that researchers can examine as they investigate the extent to which transformational leadership style relates to student achievement as measured by test scores.

New Jersey public high schools fall into two main types: vocational and comprehensive. Both vocational and comprehensive high schools, under the leadership principals, prepare students to obtain a New Jersey high school diploma by meeting state mandated graduation requirements. Although the graduation and assessment requirements are the same for both school-types, vocational schools differ from comprehensive schools in that they are schools of choice. Vocational schools provide students with a high school experience that focuses on vocational-technical skills and preparation for the job market. Comprehensive high schools, in contrast, offer a more conventional, academic course of study, and generally prepare students for entrance into college.

On the October 1997 administration of the HSPT, 81.8% of grade eleven students enrolled in comprehensive academic high schools passed all three sections of the test in
contrast to a passing rate of only 56.8% of grade eleven students enrolled in vocational districts (New Jersey Department of Education, 1999b). Contrary to what some people believe, students in vocational schools must pass the HSPT since it is a high school graduation requirement for all students, not only the students in comprehensive high schools. However, in addition to passing the HSPT, students in vocational schools must also pass challenging State-established skill proficiency tests in their chosen career major, pursuant to the Carl D. Perkins Vocational and Technical Education Act of 1998. Thus, administrators of vocational schools have the double task of educating students to achieve success in the academic as well as the vocational area.

Ever since the adoption of the Core Curriculum Content Standards in May 1996, the New Jersey Department of Education has expected all high schools, including vocational schools, to align their curricula and instruction with the Standards. The realignment of curricula with state standards, along with providing students with more challenging career-based instruction, represents the primary challenge administrators are currently facing in vocational high schools. Vocational schools must, therefore, provide rigorous educational programs and adjust teaching strategies, class schedules, and modes of instruction to enable their students to progress toward achieving the Core Curriculum Content Standards, pass the HSPT, and demonstrate competency in their chosen career major as well. Thus, if this research shows that a certain principal leadership style has the potential to raise scores of students in vocational schools, the knowledge that this is so will be particularly useful to school officials and community leaders in vocational districts.
The purpose of this study, therefore, was to collect and analyze data to examine the influence of principal transformational leadership style, in the context of other factors, on high stakes test results in both vocational and comprehensive high schools in New Jersey.

To achieve the above goal for data collection, the specific questions were:

1. Do principals who are identified as transformational by the Multifactor Leadership Questionnaire (MLQ) have a significant impact on student achievement on the New Jersey High School Proficiency Test (HSPT)?

2. Do other variables, such as enrollment size, mobility rate, student attendance rate, and free/reduced lunch eligibility have an impact on student achievement on the HSPT?

3. Is the influence of leadership style of principals on HSPT scores different in vocational schools from what it is in comprehensive high schools?

4. How do teachers perceive principals regarding leadership styles and the impact of leadership styles on student test scores?

I conceptualized principal leadership by using Leithwood’s (1994) model of transformational leadership in schools. Leithwood’s model, which is based on Burns’s (1978) seminal work on “transforming” leadership, adapts Bass and Avolio’s (1997) transformational and transactional leadership theory to schools. Leithwood’s model centers on the following eight dimensions grouped into three main categories: 1. setting directions: building school vision; establishing school goals; demonstrating high
performance expectations; 2. developing people: providing intellectual stimulation; offering individualized support; modeling best practices and important organizational values; 3. redesigning the organization: creating a productive school culture; developing structures to foster participation in school decisions.

Because principals in New Jersey continue to be judged on student achievement, as measured by test scores, in an environment of systemic reform, restructuring, high uncertainty and change, educators should examine how principal leadership style relates to student performance on the HSPT.
CHAPTER II
REVIEW OF THE RELATED LITERATURE

This section provides background information regarding the New Jersey High School Proficiency Test (HSPT), leadership, and transformational and transactional leadership. This section also presents a review of the related literature regarding how student achievement is related to principal leadership and other variables, such as student enrollment, mobility, attendance, and eligibility for free/reduced lunch.

New Jersey High School Proficiency Test (HSPT)

Accountability, based on test results, has become the backbone of the New Jersey statewide assessment system. According to the New Jersey Department of Education (1996), the evolution of the statewide assessment system in New Jersey is based on the notion that accountability, dependent upon test scores, leads to better educational outcomes. The New Jersey Department of Education currently administers the New Jersey High School Proficiency Test (HSPT), a major component of New Jersey’s system of assessment, to all 11th grade students in New Jersey high schools. The HSPT is a test of basic skills in reading, mathematics, and writing and serves as a graduation requirement for all New Jersey public school students. Because passing the New Jersey
HSPT is a statewide high school graduation requirement, educators commonly refer to the HSPT as a "high stakes test." Heubert (1999) defined a high stakes test as a "standardized test used in decisions about student tracking, promotion, or graduation" (p. 17). That is to say, a high stakes test is a test that has severe consequences for the individual if not passed. Further, passing the test is critical to the achievement of important educational goals established by the New Jersey State Board of Education. In other words, a student who passes all sections of the HSPT has met the goal of meeting the New Jersey Core Curriculum Standards in reading, mathematics, and writing. Therefore, according to the New Jersey Department of Education (1996), student passing scores on the HSPT "ensure that all students are receiving a thorough education as defined by the standards."

In addition to serving as a criterion for graduation, the HSPT results also provide important information to different constituencies in the educational arena. First, for the schools, scores on the HSPT measure how well their curricula and instruction align with the New Jersey Core Curriculum Content Standards and cumulative progress indicators. School districts receive HSPT results in a manner that delineates how students, individually and by school, perform on specific "cluster" areas in reading, mathematics, and writing. If, for example, a majority of students perform below the passing score of 300 in the mathematics cluster called Numerical Operations, schools need to analyze how instruction in this area is occurring and then make improvements where necessary. Conversely, a majority of students scoring well above the passing rate of 300 confirms that most students have mastered the state-defined standards in that cluster.
Second, for the State Board of Education, HSPT data provide information that could be helpful in making statewide educational policy decisions. Feedback regarding student progress, as measured by HSPT scores, enables policy makers to adjust, for example, program funding, the design of new programs, and monitoring procedures to insure that students are reaching curricular and instructional goals set by the state. Third, according to the New Jersey State Department of Education (1999), HSPT scores are the basis for certifying that school districts have aligned their curricula to the Core Curriculum Content Standards and are providing a thorough and efficient education for all students. State monitoring requires school districts to achieve an 85% passing rate in each of the content areas of reading, mathematics, and writing (New Jersey Department of Education, 1999). If the passing rate is not attained, district-wide improvement plans need to be developed and implemented by schools to assure that their curricula and instruction are aligned to the Standards. Finally, for taxpayers, HSPT scores provide some evidence of how well schools are using tax dollars.

School districts have devised several ways to promote high scores on the HSPT. Using more and better HSPT test preparation books, instituting after-school test preparation programs, and creating innovative and flexible scheduling to remediate students at risk of not passing the HSPT are a few of the efforts districts have put forth to raise HSPT scores. For the longer term, schools provide extensive professional development for teachers in the teaching of reading, mathematics, and writing to their students. In addition, schools spend significant sums of money hiring outside educational consultants to teach their teachers how to "teach to the test" and, thereby, raise test scores.
Growing pressure to achieve high passing rates on the HSPT in New Jersey schools has generated a high activity level on the part of school administrators as they seek to meet the demands of more stringent state mandates and increased accountability. The New Jersey Department of Education judges educator effectiveness by the academic achievement of students, as measured by test scores. Murphy and Beck (1994) stated, "The assumption is that if principals do their jobs, then teachers will teach and students will learn more effectively than has been the case in the past" (p. 6). High school principals, in particular, are under a great deal of pressure to attain high passing rates in their schools on the HSPT. There are several reasons for this. First, the New Jersey Department of Education publicly reports HSPT scores in the School Report Cards and for public release in the newspapers. School districts are open to public scrutiny and criticism if scores are low. Second, state monitoring requires districts to maintain an 85% passing rate in each of the content areas of reading, writing, and mathematics. District-wide improvement plans need to be developed and implemented by the principal if the passing rate is not attained. Finally, and most importantly, if they fail to pass all three sections of the HSPT, students will not graduate with a high school diploma. Although elementary and middle school principals are responsible for the prior education of students, it is the high school principal who is the "captain of the ship" and most visible when the state administers the HSPT. Because of the high stakes of graduation involved, high school principals are a prime target for blame and criticism by parents, community, and board members for not providing students with an education that sufficiently prepares them to pass the HSPT.
Since the endorsement of "whole-school reform" in 1998 by the New Jersey Supreme Court, the New Jersey Department of Education has proposed a variety of educational practices and instructional strategies which, it believes, will be effective in enabling all students to learn and score well on the state tests. One of the first elements it proposed as necessary for student success in schools of all grade levels is "... a strong, committed, and effective principal .... The Department of Education and the district central office must and will take whatever actions are needed to assure that it [strong, committed, and effective leadership] exists in the school" (New Jersey Department of Education, 1999a).

Leadership and Schools

Children play the age-old game "follow the leader" as one child becomes the "leader" while the other children follow what the leader does. The game is pure and simple. The leader "leads" and the followers "follow." The joyful response of very young children engaged in this game is an example, albeit a very simplistic one, of how the acts of leadership and followship are natural inclinations. Further, by watching children play the game, it is fair to conclude that some leaders are clearly better than others are. Some children can simply lead the others to do most anything, while some children cannot.

In the world of children's games, the question of why some leaders are better than others is relatively unimportant. However, in the real world, the question is significant. Drucker (1967) posited that being an effective leader is the job of any organizational...
executive and stated, "... the executive is, first of all, expected to get the right things
done. And this is simply that he is expected to be effective" (p. 1). Further, Drucker
stated, "Effectiveness thus deserves high priority because of the needs of the organization.
It deserves even greater priority as the tool of the executive and as his access to
achievement and performance" (p. 20).

An examination of various aspects of leadership in our society substantiates
Drucker’s point. In large corporations, corporate officials consider the Chief Executive
Officers (CEO) to be effective leaders if they plan, organize, integrate, and motivate
workers in a manner that creates high profits. In the military, the United States
Government considers generals effective leaders if their command over soldiers is such
that orders are carried out and numerous campaigns are won. In the political arena,
political parties deem elected officials effective leaders if they convince a majority of
people to believe in a particular platform and succeed in getting significant legislation
passed. Effective religious leaders touch the personal lives of people by developing and
building congregations of followers who believe in their spiritual guidance. Finally, a
social leader, such as Martin Luther King, goes down in history as an effective leader
because of his ability to inspire, motivate, and lead a vast majority of people in the civil
rights movement to achieve major social and political reforms. Therefore, both
individuals and groups of individuals judge leader effectiveness in a variety of
organizational settings based upon the leader’s ability to achieve results by getting the
right things done. Achievement, performance, and the leader’s ability to motivate others
to work together to achieve specific goals define effective leadership in all aspects of our
present society.

Educators have often thought of schools as different from high-powered corporations where production, deadlines, anxiety, and accountability are daily buzzwords. Likewise, they have often thought of the responsibility and leadership of school principals as different from that of CEOs of industrial corporations who, for example, have the responsibility of increasing profits by implementing new and innovative methods to enhance production. However, in spite of the differences, just as industry has restructured to increase productivity, so have schools. Odden and Clune (1995) asserted, “Improving productivity of America’s schools may be the only way the education system can ‘produce’ on the goal of teaching all students to high standards” (p. 9). Further, Leithwood (1992) discussed Ouchi’s (1981) Theory Z, which defined organizations in terms of their reliance on top-down and participative decision making processes to increase productivity. Leithwood (1992) stated,

The restructuring of schools is analogous to the groundshift in large businesses and industries begun more than a decade ago from Type A (top-down decision making) toward Type Z (participative decision making) organizations .... The noneducational organizations that have taken this Type A toward Type Z groundshift have usually done so not out of concern for individual rights or social justice but because a shift increases their productivity. (pp. 8-9)

The point of Leithwood’s analogy is that restructuring of schools facilitates bottom-up decision making and, in the process, affects an increase in the production of
higher student achievement as well.

As schools become more responsive to the high demands of the 21st century by restructuring, the principal’s role as leader becomes more complex. In New Jersey schools, district administration, parents, community leaders, and the media often define effective leadership of the principal as the production of student achievement as measured by test scores (New Jersey Department of Education, 1999a). Just as the production of profit translates into CEO effectiveness in the corporate world, the production of passing rates on the New Jersey High School Proficiency Test translates into principal effectiveness in New Jersey high schools.

The effective leader of the “follow the leader” game is one who gets the majority of the children to follow. Effectiveness, in this case, is the number and status of children following. A large “followship” in the game may develop because the children’s leader is somehow an inspirational role model or, perhaps, a bully. In other words, the children in the game are responding, for some reason, to the leadership “style” of the leader. Clearly, educational leadership is far from being a game. However, the point of this simple scenario is this: it is important to explore the concept of leadership effectiveness in terms of leadership style if educators are to learn which factors affect outcomes better than others do. In short, schools need to examine different leadership styles of principals in terms of the relationship of leadership style to student test scores.
Principals as Instructional Leaders

Traditionally, many educators have thought of principals in terms of instructional leadership. Indeed, Leithwood, Jantzi, and Steinbach (1999), in their review of contemporary leadership literature, stated that instructional leadership emerged as one of the most frequently mentioned leadership concepts in North American journals. DeBevoise (1984) offered a broad definition of instructional leadership as “those actions that a principal takes, or delegates to others to promote growth in student learning” (p. 17). Leithwood (1994) characterized instructional leadership as generally heavily classroom focused. He contended that educators judge the effectiveness of principals on how well teachers implement prevailing instructional reforms. In other words, according to Leithwood, the teacher is the “filter” through which principal leadership ultimately affects students.

Times have changed and so have our schools. High schools, in general, have become physically larger and more complex. Many high school principals have always had, and continue to have, the responsibility of observing teachers both formally and informally. However, it has become increasingly difficult for principals to provide leadership by direct supervision of teachers and instruction in the classroom. Leithwood, Jantzi, & Steinbach (1999) stated, “The size of the secondary schools challenges the feasibility of principals exercising the sort of direct influence on classroom practice envisaged in early views of instructional leadership” (p. 25).

Regarding instructional leadership, the emphasis has mainly been on improving the effectiveness of teachers’ classroom practices. According to Leithwood, Jantzi, and
Steinbach (1999), transformational leadership is an expansion of instructional leadership as it “aspires, more generally, to increase members’ efforts on behalf of the organization, as well as to develop more skilled practice” (p. 20). Similarly, Hallinger (1992) contended that transformational leadership is an extension of instructional leadership as it includes teachers and parents as well as the principal in the problem finding and problem solving process (p. 40). Sheppard (1996) recognized that within his “broad” definition of instructional leadership lie dimensions of transformational leadership that contribute to school characteristics that facilitate school improvement.

In recent years, a number of educational researchers contended that transformational leadership is a model of leadership preferred to the instructional leadership model (Barth, 1990; English & Hill, 1990; Fullan, 1993; Schlechty, 1990; Sergiovanni, 1990). Heck (1993) argued that the exercise of control by transforming the needs of subordinates into the pursuit of organizational goals and common purpose leads to a feeling of empowerment and shared leadership in schools. Murphy (1988) examined the field of instructional leadership and concluded, “Research that investigates the more indirect, less visible, and less technical ways that principals exercise their instructional leadership role is especially needed” (p. 131). Leithwood, Jantzi, & Steinbach (1999) argued that within the context of change and the school restructuring movement, there is a need for a different type of leadership. Moreover, Leithwood (1994) stated that “transformational approaches to school leadership are especially appropriate to the challenges facing schools now ….” (p. 499).
Transformational Leadership

Burns (1978) first introduced the concept of transformational leadership as “transforming leadership,” based on his identification and classification of two-types of political leaders, the transactional leader and the transforming leader. According to Burns, the transactional political leader motivates subordinates by exchanging rewards with them for services rendered. Burns distinguished this type of leadership from transformational political leadership, which he described as more complex and “more potent.” For Burns, the transformational leader looks for potential motives in followers, seeks to satisfy higher needs, and engages the full person of the follower” (p. 4).

In reaction to Burns’s seminal concept of transformational leadership in the political sense, researchers of leadership have extended his definition to leader-follower relations in general. For example, Bass (1985) and Bass and Avolio (1997) expanded Burns’s transformational leadership theory by studying and describing the behaviors of both transactional and transformational leadership in industrial, educational, government, and military settings. Leithwood (1994) developed his transformational leadership model for schools, by modifying and adapting the transformational leadership theories of Burns, Bass, and Avolio to the educational setting.

Burns’s general definition of leadership embraced the notion that leadership is not simply a quality possessed by the leader. He contended that leadership is not making followers do what followers would not otherwise do, nor making followers do what leaders want them to do. Burns argued that leadership must realize the purposes of both leaders and followers:
I define leadership as leaders inducing followers to act for certain goals that represent the values and the motivation -- the wants and the needs, the aspirations and expectations -- of both leaders and followers. And the genius of leadership lies in the manner in which leaders see and act on their own and their followers' values and motivations. (p. 19)

Burns maintained that most political leaders are transactional, that is, "leaders approach followers with an eye to exchanging one thing for another, jobs for votes, or subsidies for campaign contributions" (p. 4). Bass (1985) extended the definition of transactional leadership to the military, industrial, public, and educational arenas. Building on Burns's definition, Bass described transactional leaders as those who recognize what subordinates value and who attempt to give this to them in exchange for appropriate performance and goal attainment. Leaders and followers exchange rewards and promises for suitable levels of followers' efforts. Further, as long as subordinates are getting the job done, transactional leaders respond to their individual needs and desires.

Transactional leaders, according to Bass and Avolio (1997), clarify requirements for followers to reach desired outcomes. Transactional leadership is based on an exchange process in which the leader provides rewards in return for the follower's effort and performance. The primary factors of the Bass and Avolio Transactional Leadership Model include Contingent Reward, Management-By-Exception (Active), Management-By-Exception (Passive), and Laissez-Faire. Contingent Reward occurs when there is an interaction between leader and followers where the leader provides rewards based on appropriate levels of performance. Management-By-Exception (Active) occurs when the
leader monitors followers to make sure that mistakes have not been made regarding failing to meet standards. Management-By-Exception (Passive) occurs when the leader intervenes by giving direction only if things go wrong. Laissez-Faire is the most inactive type of leadership and occurs when there is an absence of leadership, the avoidance of intervention, or both. Typically, a leader classified as laissez-faire avoids getting involved even when important issues arise.

In contrast to transactional leadership, transformational leadership focuses on the identification of the higher order needs of followers and activating these needs by motivating followers to perform beyond expectations. According to Burns (1978), transformational leaders sensitize followers to the importance of attaining valued goals and to the ways to reach them, encourage followers to transcend their own self-interest for the sake of the organization, and develop followers in terms of such areas as autonomy, achievement, and affiliation. Burns stated that transformational leadership has an "elevating, mobilizing, inspiring, exalting, uplifting, preaching, exhorting and evangelizing" (p. 20) effect on both the leader and the led.

Kuhnert and Lewis (1987) explained that the leader's expression of his personal standards enables subordinates to alter their goals, values, and beliefs so they are performing at higher levels than previously thought possible. Leithwood, Jantzi, and Steinbach (1999) stated, "For transformational leadership, influence is exercised through motivational processes that elevate organizational members' aspirations for their work and inspire higher levels of commitment to the organization and its purposes" (p. 17). Transformational leaders, according to Bass (1985), are not only responsive to the
individual needs of subordinates but encourage subordinates to develop those needs so they perform in a way that is beyond ordinary standards. The transformational leader makes subordinates aware of their valued needs and provides strategies for satisfying those needs. The transformational leader encourages followers to look beyond their own needs to the overall mission and vision of the organization. The transformational leader elevates associates to higher levels of work maturity by facilitating achievement, autonomy and loyalty to the goals of the organization.

Bass and Avolio (1997) described the distinctive nature of transformational leadership as “a higher-order exchange process; not a simple transaction, but rather a fundamental shift in orientation, with both long and short-term implications for development and performance” (p. 20). According to Bass and Avolio, the key aspects of transformational leadership are Idealized Influence (Attributes and Behaviors), Inspirational Motivation, Intellectual Stimulation, and Individualized Consideration. Idealized Influence (Attributes and Behaviors), originally referred to as charismatic leadership by Bass in his 1990 work, involves the leader building trust and confidence, transmitting a sense of mission, and behaving as a role model to followers. Inspirational Motivation means the leader communicating a vision to followers with confidence, optimism, team spirit, and enthusiasm. Intellectual Stimulation involves the leader enabling followers to view problems from different perspectives, facilitating innovation and stressing the use of intelligence. Individualized Consideration occurs when the leader makes followers feel valued, giving them individual and personal attention and assigning tasks as a means of developing their potential.
Further, according to Bass and Avolio (1997), people can learn to be transformational leaders. Individual consultations, coaching, and group training sessions in transformational leadership skills have successfully made desirable changes in leadership styles in various organizations. Bass and Avolio, as part of their effort to train people to be transformational leaders, developed the Multifactor Leadership Questionnaire (MLQ). They designed this survey instrument, which I will explain in more detail in Chapter 3 where I deal with the methodology for my study, to measure, explain, and demonstrate to individuals transformational leadership behaviors.

Over the years, researchers have used the MLQ for studies on transformational leadership in a wide variety of organizational settings including, although not limited to, schools. Although authors like Saskin and Burke (1990) have criticized the MLQ for not addressing the issue of power as an important aspect of transformational leadership, educational researchers are still using the MLQ instrument. Koh (1990), for instance, utilized the MLQ in research on principals in secondary schools in Singapore. He reported that transformational leadership of principals does make a significant difference, albeit indirectly, in their schools' performance and overall effectiveness. Koh reported the following:

Although the direct impact of transformational leadership on objective performance indices such as teacher turnover, student turnover, and the student academic results are minimal, the indirect impact which such a leadership style has on these end results via intermediate variables such as commitment, organizational citizenship behavior, and organizational
effectiveness cannot be ignored. (p. 133)

Silins (1992) measured principal transformational and transactional leadership using the MLQ in elementary schools in British Columbia. He showed that transformational leadership had a more significant and positive relationship with school effects than transactional leadership. More recently, Philbin (1997) used the MLQ in secondary school research. He reported a strong, positive relationship between the transformational leadership of principals and their perceived effectiveness, their leadership satisfaction, and teachers' willingness to put forth extra effort.

Burns viewed transforming and transactional leadership as separate and as being on opposite ends of a single continuum. According to Burns, transformational leadership is a paradigm of leadership which, although "utopian," should be aspired to.

The function of leadership is to engage followers, not merely to activate them, to commingle needs and aspirations and goals in a common enterprise, and in the process to make better citizens of both leaders and followers. (p. 461)

Bass, however, in his "two-factor theory" viewed transformational leadership as augmenting and complementary to transactional leadership, which is consistent with studies that showed consistently high intercorrelations between transformational and transactional leadership (e.g., Avolio, Bass, & Jung, 1996; Podsakoff, Mackenzie, Mooreman, & Fetter, 1990; Yammarino & Dubinsky, 1994). Bass (1999) encapsulates the notion of transformational-transactional leadership in his statement, "The transformational leader emphasizes what you can do for your country; the transactional
leader, what your country can do for you” (p. 9). Moreover, according to Bass and Avolio (1997), the best leaders are both transactional and transformational, contending that the full range of a leader’s potential is achieved through both leadership styles, not either one versus the other.

Table 1 summarizes Bass and Avolio’s (1997) Model of Transactional and Transformational Leadership.
Table 1

Bass and Avolio’s Model of Transactional and Transformational Leadership

<table>
<thead>
<tr>
<th>LEADERSHIP FACTORS</th>
<th>BEHAVIORS OF LEADERS ASSOCIATED WITH EACH FACTOR</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>TRANSFORMATIONAL FACTORS</strong></td>
<td></td>
</tr>
<tr>
<td>Idealized Influence (attributes:</td>
<td>Instills pride in others for being associated</td>
</tr>
<tr>
<td>associates' reactions to the leader)</td>
<td>with them.</td>
</tr>
<tr>
<td>Idealized Influence (behaviors:</td>
<td>Talks about their most important values and</td>
</tr>
<tr>
<td>to characteristic behavior of the leader)</td>
<td>beliefs.</td>
</tr>
<tr>
<td>Inspirational Motivation</td>
<td>Talks optimistically about the future.</td>
</tr>
<tr>
<td>Intellectual Stimulation</td>
<td>Seeks differing perspectives when solving problems.</td>
</tr>
<tr>
<td>Individualized Consideration</td>
<td>Treats others as individuals rather than just as a</td>
</tr>
<tr>
<td></td>
<td>member of the group.</td>
</tr>
<tr>
<td><strong>TRANSACTIONAL FACTORS</strong></td>
<td></td>
</tr>
<tr>
<td>Contingent Reward</td>
<td>Provides appropriate rewards when subordinates</td>
</tr>
<tr>
<td></td>
<td>meet agreed-upon objectives.</td>
</tr>
<tr>
<td>Management-By-Exception (Active,</td>
<td>Focuses attention on irregularities, mistakes,</td>
</tr>
<tr>
<td>monitoring behavior)</td>
<td>exceptions, and deviations from standards.</td>
</tr>
<tr>
<td>Management-By-Exception (Passive,</td>
<td>Fails to interfere until problems become serious.</td>
</tr>
<tr>
<td>allows status quo to exist)</td>
<td></td>
</tr>
<tr>
<td><strong>THE NONLEADERSHIP FACTOR</strong></td>
<td></td>
</tr>
<tr>
<td>Laissez-Faire</td>
<td>The absence of leadership, the avoidance of</td>
</tr>
<tr>
<td></td>
<td>intervention, or both.</td>
</tr>
</tbody>
</table>
Leithwood’s Transformational School Leadership Model

By adapting the transformational leadership theories of Burns (1978), Bass (1985), and Bass and Avolio (1997) to the school setting, Leithwood has provided the most fully developed model of transformational leadership in schools. My search of the literature revealed that Leithwood has the most current and comprehensive model of transformational leadership adapted to the school setting. Further, as discussed later, Leithwood’s model is relevant not only to the school setting but to the current educational restructuring environment as well. As a result, this entire section presents and emphasizes Leithwood’s work in the past decade.

Leithwood (1994) asserted that the so-called “4 Is” -- Idealized Influence, Inspirational Motivation, Intellectual Stimulation, and Individualized Consideration -- of transformational leadership by Bass and Avolio in 1997 are necessary characteristics for school principals if they are to be responsive to the educational demands of the 21st century. Transformational school principals, for example, emphasize the importance of having a collective sense of mission in their schools, reassure others that obstacles will be overcome, articulate a compelling vision of the future, set others to look at problem from many different angles, and spend time teaching and coaching. Leithwood maintained that there is strong evidence “for the claim that transformational leadership will be of considerable value in the context of a school-restructuring agenda” (p. 515).

Transformational leadership is necessary in the restructuring process in order to inspire higher levels of commitment among teaching staff members and faculty. Transformational leadership also promotes greater effort, greater productivity, the
development of skilled practice in the classroom, and the increased capacity of the school
to continuously improve.

Leithwood, Jantzi, and Steinbach (1999) offered evidence provided by 21 studies
supporting the use in schools of seven dimensions of transformational leadership
proposed originally for non-school settings. Three dimensions --
charisma/inspiration/vision (idealized influence), intellectual stimulation, and individual
consideration -- had very strong empirical support. Three dimensions -- high
performance expectations, goal consensus and modeling -- had less empirical support but
were nonetheless considered by Leithwood, Jantzi, and Steinbach to be important aspects
of transformational leadership. The seventh dimension, according to those authors, is
contingent reward, even though Bass and Avolio viewed it as being an element of
transformational leadership. Regarding their contention that contingent reward is a
dimension of transformational leadership, Leithwood and his colleagues asserted:

The possibility of providing informative feedback about performance in
order to enhance teachers' sense of professional self-efficacy, as well as
contributing to their day-to-day sense of job satisfaction, makes this set of
leadership practices potentially transforming, as well. (p. 73)

The additional dimensions of culture building and structuring, were identified as
unique to schools only. Although there was little direct evidence of their value in the 21
studies, Leithwood, Jantzi, and Steinbach (1999) contended that there was sufficient
supporting evidence for them outside the transformational leadership theory framework to
add them as the eighth dimension of their transformational leadership model. Finally,
management-by-exception, also considered transactional by Bass and Avolio (1997) as shown in Table 1, was dismissed as having no productive contribution to make to schools and was not included in the Leithwood model.

Figure 1 shows Leithwood's model of school transformational leadership. The model conceptualizes transformational leadership in schools along eight dimensions, grouped into three categories: Setting Directions: Building School Vision, Demonstrating High Performance Expectations, Establishing School Goals; Developing People: Offering Individualized Support, Providing Intellectual Stimulation, Modeling Best Practices and Important Organizational Values; Redesigning the Organization: Creating a Productive School Culture, Developing Structures to Foster Participation in School Decision.

Table 2, which I have designed based on the models of Leithwood (1994) and Bass and Avolio (1997), illustrates how Leithwood's model is an adaptation of the transformational and transactional leadership model of Bass and Avolio (1997). Both models represent one of the main underlying premises of transformational leadership theory -- the shift from leader control strategies to leader commitment strategies. That is to say, transformational leadership consists of strategies that encourages subordinates to understand the need for change and that promote their commitment to creating, attempting and refining innovative practices to address these changes. Further, according to Leithwood, Jantzi, and Steinbach (1999), "commitment," powered by transformational leadership rather than "control" by traditional instructional leadership, will be necessary for future change and successful restructuring in schools.
Figure 1. Leithwood’s model of school transformational leadership.
Table 2
Leithwood's Model of Transformational Leadership in Schools as an Adaptation of Bass and Avolio's Model of Transactional and Transformational Leadership

<table>
<thead>
<tr>
<th>LEITHWOOD MODEL (SCHOOLS)</th>
<th>BASS AND AVOLIO MODEL</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SETTING DIRECTIONS</strong></td>
<td><strong>Transformational Factors</strong></td>
</tr>
<tr>
<td>1. Building School Vision</td>
<td>Inspirational Motivation</td>
</tr>
<tr>
<td>2. Establishing School Goals</td>
<td>Idealized Influence (Behavior)</td>
</tr>
<tr>
<td></td>
<td>Idealized Influence (Attributed)</td>
</tr>
<tr>
<td>3. Demonstrating High Performance Expectations</td>
<td>Inspirational Motivation</td>
</tr>
<tr>
<td><strong>DEVELOPING PEOPLE</strong></td>
<td></td>
</tr>
<tr>
<td>4. Offering Individualized Support</td>
<td>Individualized Consideration</td>
</tr>
<tr>
<td></td>
<td>Contingent Reward (Transactional)</td>
</tr>
<tr>
<td>5. Providing Intellectual Stimulation</td>
<td>Intellectual Stimulation</td>
</tr>
<tr>
<td>6. Modeling Best Practices and Important Organizational Values</td>
<td>Idealized Influence (Attributed)</td>
</tr>
<tr>
<td><strong>REDESIGNING THE ORGANIZATION</strong></td>
<td></td>
</tr>
<tr>
<td>7. Creating a Productive School Culture</td>
<td>Idealized Influence (Behavior)</td>
</tr>
<tr>
<td></td>
<td>Idealized Influence (Attributed)</td>
</tr>
<tr>
<td></td>
<td>Inspirational Motivation</td>
</tr>
<tr>
<td></td>
<td>Intellectual Stimulation</td>
</tr>
<tr>
<td></td>
<td>Individualized Consideration</td>
</tr>
<tr>
<td></td>
<td>Contingent Reward (Transactional)</td>
</tr>
<tr>
<td>8. Developing Structures to Foster Participation in School Decisions</td>
<td>Intellectual Stimulation</td>
</tr>
</tbody>
</table>

As indicated earlier in this section, Leithwood's model is important and relevant to the current restructuring environment in schools. To illustrate how transformational approaches to leadership align with the restructuring context, Leithwood, Jantzi, and
Steinbach examined four features of that context. First, the means and ends for school restructuring are uncertain. Transformational leaders, according to Leithwood, Jantzi, and Steinbach, support school staffs to comfortably try out, develop, and practice new ideas within an environment of uncertainty and ongoing change. Second, school restructuring requires both first-and second-order changes. First-order changes are changes related to directly improving instruction (for example, instruction designed to teach for understanding); second-order changes are changes that promote the development of shared vision, productive work culture, and organizational building in the school. For these authors, transformational leadership promotes the second order changes to ensure the survival of the first-order changes. Simply stated, the motivational and inspirational nature of transformational leadership supports and facilitates basic instructional changes that educators consider necessary for restructuring. Third, school restructuring is increasingly focused on secondary schools. Secondary schools have become increasingly complex in terms of numbers of classrooms, teachers, and depth and breadth of curriculum and instruction. Transformational leadership, according to Leithwood and his two colleagues, transcends direct classroom supervision at the secondary level and provides, instead, empowerment of teachers and other school staff members to influence teaching practices. Finally, the professionalization of teaching is a centerpiece of the school restructuring agenda. For Leithwood, Jantzi, and Steinbach the professionalization of teaching fits well with the transformational leadership paradigm as they emphasize that principals should assume less of an instructional role and also should
provide teachers with the pedagogical expertise to enable them to become the content and instructional experts in the school.

Leithwood, Jantzi, and Steinbach used their model of school transformational leadership in a secondary school case study. As background, they used the results of studies included in the Leithwood, Tomlinson, and Genge (1996) review of transformational school leadership literature. Leithwood, Jantzi, and Steinbach categorized research-based specific school-level principal transformational leadership practices according to the eight dimensions of school transformational leadership. Table 3, developed by this researcher, presents a sample of these principal practices. A complete list of practices is presented in Appendix A.
Table 3

School-level Principal Leadership Practices according to the Leithwood Model of School Transformational Leadership

<table>
<thead>
<tr>
<th>Dimensions of School Transformational Leadership</th>
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Leithwood’s model suggests that principals with transformational leadership styles can potentially “transform” teachers, students, and staff members in their schools to collectively work towards achieving student success. Thus, in relating Leithwood’s work to the HSPT theme of this study, it is fair to state that principals with transformational leadership styles express satisfaction to teachers when they meet expectations regarding classroom instruction that focuses on HSPT skills. They facilitate the teachers’ examination of student achievement issues from several vantage points. Transformational principals consistently emphasize the importance of the collective mission of the school to have students score well on the HSPT. Transformational principals speak enthusiastically with teachers about raising student achievement on the HSPT and instill pride in teachers for achieving success with their students. Finally, transformational principals spend a great deal of time coaching teachers regarding ways to improve student scores on the HSPT.

Verona (1998), in an unpublished ethnographic study concerning leadership style and HSPT testing, found that the leadership style of the principal studied, described by Verona as “caring and humanistic” (p. 21), positively influenced the way teachers taught and students learned in preparation for the HSPT. The principal’s manifested behaviors, such as personally talking to students during lunchtime in the cafeteria about the importance of doing well on the HSPT and praising teachers for their classroom instruction, related positively to HSPT. Exhibiting many of the elements of transformational leadership, the principal’s leadership style had a positive effect on the overall climate for learning and the students’ preparation for the HSPT.
Principal Leadership Style and Student Achievement

The principal's leadership style sets the tone for a school and strongly influences conditions, which affect teaching, learning, and ultimately student achievement. Governor Thomas R. Carper of Delaware said at an education summit last fall, "I've never been to a great school where they don't have a great principal" (Olson, 2000, p. 16).

Bolman and Deal (1997) stated, "Perhaps the two most widely accepted propositions about leadership are that all good leaders must have the 'right stuff'—qualities like vision, strength, and commitment that are essential to leadership -- and that good leadership is situational -- what works in one setting will not work in another" (p. 287). Thus, principals with the "right stuff" can affect teacher motivation and student engagement in learning. They can also influence physical conditions needed for teaching, learning, and the overall climate for promoting and maintaining student achievement in schools.

A review of the literature presents a plethora of mixed conclusions regarding the impact of principal leadership style on student achievement. As Murphy (1988) noted, however, there are few studies that have investigated the influence of principal instructional leadership on outcome measures such as student achievement. According to Murphy, most of the studies in this area of research that have been limited to ethnographic designs lacked rigor and were not done well.

Herron (1994) researched the effect leadership styles of 194 Pennsylvania elementary school principals had on student achievement. He quantified student achievement using the mathematics and reading results of the Pennsylvania Department
of Education Testing for Essential Learning and Literacy Skills (TELLS). The researcher measured principal leadership style using the LEAD-Self questionnaire. The findings of this study indicated that the leadership style of the principal did not influence student achievement. Herron contended that the number of factors influencing student achievement was too great to draw correlations based upon any one factor.

Firestone and Wilson (1985) analyzed the role of the principal in affecting classroom instruction through their study of the "cultural and bureaucratic linkages" that the principal has with teachers in a school. They agreed with effective school research, which indicates that the principal plays a key role in improving instruction. However, the researchers argued that because "schools are loosely linked organizations, the impact of the principals on instruction is limited" (p. 25). Their contention was that principals can influence instruction if they can identify and tighten the linkages to or among teachers. In a related study, Firestone and Wilson (1989) gathered data from a survey of 175 elementary and 118 secondary southeastern Pennsylvania schools. They examined the administrative factors that influence student achievement and the effect of family socioeconomic status (SES) on those factors. The researchers' findings indicated that when they controlled for SES, supportive administrative behavior was positively related to student achievement at both the elementary and secondary levels.

Snyder and Ebmeir (1993) investigated the relationship between principal behavior and student outcomes, in their study concerning implications for principal evaluation. They used survey results of students, teachers, and parents from 30 schools. The researchers argued that principals should be evaluated only in terms of their direct
effect on teachers. Moreover, they contended that, although principals had strong direct effects on mediating variables, such as teacher perceptions of school functions, principals had few indirect and no direct effects on student outcomes, such as achievement.

In contrast to the above, numerous research findings have indicated that principal leadership style makes a difference in student achievement. For example, Hager and Scarr (1983) reported their task analyses on administrative functions of principals in Lake Washington School District. They argued that when principals spent less time on administrative responsibilities and more time on critical functions such as instructional leadership, students' test scores improved over 20 percentile points. Eberts and Stone (1988) affirmed that principal behavior and attributes made a positive difference in individual student achievement. Their study was based on data from a national representative sample of 14,000 elementary school children. The researchers reported that principal leadership in instructional activities and conflict resolution made a difference to student achievement (which they measured using pre-and post-test scores on standardized mathematics achievement tests) and other school-level variables at the elementary level. Crawford, Kimball, and Watson (1985) researched the influence of school effects on student achievement, using data from 94 elementary, middle, and high schools in the Oklahoma City Public Schools. They measured principals' leadership effectiveness in the areas of principals' expectations, instructional leadership, forceful or dynamic style, effective consultation with others, discipline, resources, time management, and evaluation of others. The researchers based student school-level achievement on reading and mathematics scores from the California Achievement tests. Their findings
indicated that principals' leadership effectiveness was related to student achievement, the effects being strongest in mathematics in the primary grades and grade five.

Edington, DiBenedetto, and Romeo (1988) studied the effect of principal leadership qualities on student achievement in 24 New Mexico rural public elementary schools. The researchers used a stepwise multiple regression analysis, controlling for student socioeconomic status and ethnicity. Their findings indicated that teachers' perceptions of principals' charismatic leadership were positively related to Comprehensive Test of Basic Skills (CTBS) scores of eighth grade students. Krug (1993) presented results from a study in which he evaluated principal leadership in terms of "measures of effectiveness." He based the measures of effectiveness on principals' self-reported approaches to instructional leadership. To measure student achievement, the researcher used grades 3, 6, and 8 reading and mathematics scores from a standardized, state-administered test. Krug showed consistent positively correlated relationships between principal leadership scores and student achievement.

Glasman (1993) reported on two studies conducted by Fuller (1989) and Ybarra (1992). Fuller and Ybarra each evaluated principals' involvement behavior in terms of the extent and quality of principals' involvement in solving the problem of declining student test scores. Glasman reported that the results of each of these studies indicated that there were significant differences between the involvement behavior of principals in schools with improving scores and the involvement behavior of principals in schools with declining scores. According to Glasman, there was significantly greater principal involvement behavior of principals in schools with improving scores.
More recently, Hallinger and Heck (1996) reviewed empirical research regarding the principal’s role in positively affecting student achievement. They reviewed studies, including Pitner’s (1988), which were based on theoretical models that included in-school “mediating” variables. The researchers argued that there is empirical support for student achievement being positively impacted by “the function of the principal sustaining a schoolwide purpose focusing on student learning” (p. 38). Hallinger and Heck affirmed that “school goals” was a mediating variable that showed up with consistency as a significant factor with principal leadership. The researchers said, therefore, that only in the presence of principals’ setting goals for their schools, would their leadership influence student achievement.

Because the transformational leadership paradigm is still fairly new, there is a paucity of evidence showing the effect of transformational leadership style on student achievement. According to Leithwood, Jantzi, and Steinbach (1999), only a limited amount of formal evidence exists because the effects of transformational leadership in schools have been based solely on “indirect” measurement of student achievement as mediated by the teacher. That is to say, whereas student achievement on standardized tests provides direct evidence of student effects, teacher perceptions of student outcomes offer only subjective evidence that such achievement exists.

There is also limited research on the connection between principal leadership style and student achievement as measured by statewide assessment tests, particularly those considered to be "high stakes" tests. Keshish (1996) studied school district response to the New Jersey High School Proficiency Test (HSPT). She contended that
administrative leadership, which she measured as the level of district actions in response to the HSPT, was important in fostering a more positive attitude in teachers regarding the preparation of their students for the test. However, because Keshish limited her study to administrative leadership in general, she did not examine the specific issue of how the administrative leadership of the principal influenced student achievement.

Other Variables and Student Achievement:

Enrollment, Attendance, Mobility, and Free/Reduced Lunch Eligibility

Numerous studies indicate that student enrollment, attendance, mobility, and eligibility for reduced/free lunch may be important for student achievement. First, the literature on school enrollment underscores the positive relationship between small schools and high student achievement. Howley (1994) presented a summary of research findings that generally pointed to a negative relationship between school size and student achievement. He reported on studies that showed, for example, that small elementary schools benefited disadvantaged students most and that eighth-grade students achieved best in an elementary K-8 setting. Howley claimed that small schools are like “communities” where learning is nurtured or cultivated. Klonsky and Klonsky (1999) reported that about 10 percent of Chicago’s 420,000 public schools students attend intentionally designed small schools, which outperformed big schools in many important areas, including measurable student achievement. The researchers’ contention was that small schools are better, “especially when a change in size alters the relationships within schools, leads to teacher collaboration and student visibility, and establishes true learning
Plecki (1991) conducted a study of elementary schools in urban/rural locations in California. She reported that larger schools were not associated with improved school performance (measured by mean scores on a state assessment program). Plecki’s analysis, which controlled for similar student characteristics such as student poverty levels, showed that student performance was best in schools under 200 students.

Kanarick (1992) reported that when she controlled for socioeconomic status in a multiple regression analysis, school size at the high school level was the most significant variable in the study. The findings of her research showed an inverse relationship between student enrollment and mean school performance on the SAT, mean school performance on the reading section of the HSPT, and school-level attainment of minimum state standards on the reading, mathematics, and writing sections of the HSPT.

Smaller schools at the secondary level, according to Fowler’s (1989) study of school size, school characteristics, and school outcomes, were more efficient at enhancing educational outcomes. Fowler’s research revealed that student achievement (measured as average scores on New Jersey state-developed Minimum Basic Skills and HSPT tests) was significantly and negatively associated with school size. Moreover, the current “school within a school” (SWS) concept has been embraced by many schools in New Jersey because “It organizes students into smaller functional units to encourage student feelings of involvement and belonging. The idea establishes three or four smaller schools within a larger institution, with predominantly its own faculty and student activities” (Middlesex County Vocational and Technical High Schools, 1999). The use of the SWS model in
schools is testimony to the fact that educators consider small student enrollment to be advantageous to student outcomes. The concept also supports Howley’s (1994) contention that smaller schools are better because of feelings of “community.”

A substantial amount of research exists to show that student attendance rate is an important factor regarding student achievement. The Louisiana Department of Educational Accountability (1994) reported its examination of student attendance (in terms of absenteeism) and its relationship to student performance on the California Achievement Tests (CAT) and the Graduation Exit Examinations (GEE) administered in the New Orleans public schools. The report indicated that student achievement on standardized tests, particularly at the secondary level, was more accurately reflected when the researchers adjusted test results for attendance at the tested school. Franklin and Crone (1992) reported a study that used data from 1,336 public regular education schools in Louisiana. They designed their study to test the appropriateness and usefulness of indicators used on the Progress Profiles of the Louisiana State Department of Education. The researchers showed that one of the indicators, percentage of student attendance, was a strong predictor of student achievement (as measured by state standardized test scores).

Bobbett, French, and Achilles (1993) analyzed 1990-91 report card data from Tennessee’s schools. They studied the relationships between student outcomes (measured by using scores from Tennessee’s Comprehensive testing program and the Tennessee Proficiency Test) and 15 school district characteristics. The researchers’ findings showed that the percentage of student attendance was one of two factors that most influenced student achievement in Tennessee’s schools. Stickland (1998)
investigated the correlation between school records of student attendance and grade point averages among high school juniors in a Chicago public school. Using a pretest-posttest design, he showed that there was a statistically significant positive correlation between days present and grade point averages of high school students. In contrast to the above, however, Wise (1994) analyzed attendance and grade-point averages of 995 students in the 9th, 10th, and 11th grades in Ohio. Wise presented evidence to show that only a small correlation existed between student attendance and student grades at the secondary level.

Educators often view student mobility as one possible cause of student failure in schools. Ronald F. Larkin, superintendent of schools in New Brunswick, New Jersey, stated that by the time the typical New Brunswick student reaches 12th grade, he or she has moved four times. Larkin stated in an interview with Symons, of the Home News Tribune. “It’s a problem for us ... just think: half of your class that’s sitting in front of you on the first day of school isn’t going to be there at the end of the year” (Symons, 1999. pp. A1, A8).

My review of the literature, however, points to conflicting results regarding the effects of mobility on achievement. Fernandez (1987) investigated the effect of student mobility on the performance of 10th grade students on the New Jersey HSPT. She measured student mobility in three ways: type of mobility, number of moves, and number of consecutive uninterrupted years in the district. The results of a multivariate regression analysis showed that when she held school and other home factors constant, mobility had little effect on achievement. This finding was contrary to Fernandez’s hypothesis. According to Fernandez, “It appears to be a larger set of complex social conditions that
effect student performance, including language proficiency, behavior, and attendance” (p. 21).

In a similar study, Adduci (1990), used a sample of tenth-grade students for whom she had the most recent scores on the New Jersey HSPT. As control factors, she used data on students’ family structure, primary language, and socioeconomic status. Results of her study showed that, given the control variables, a high degree of mobility of 10th grade students in New Jersey high schools had no significant impact on their HSPT scores. Evans (1996) investigated the relationship between mobility and student achievement in a study she conducted with 30 sixth grade students. The researcher classified the students as either mobile or stable. Evans compared the two groups using reading and mathematics scores from the annually administered Iowa Tests of Basic Skills. Her results indicated that students classified as stable did not achieve significantly higher reading and mathematics achievement scores than students classified as mobile.

In contrast to the above, Ingersoll (1988) contended that geographic mobility has a negative effect on students’ overall academic achievement. He used mobility and standardized achievement data from over 58,400 K-12 student records from a multiethnic urban school system in Colorado. Ingersoll showed that the achievement levels of students he classified as more stable were consistently higher than those of students in the more mobile groups. For over a period of 13 years, Paredes (1993) studied the relationship of student achievement on norm-referenced tests to student mobility. The results of his study, which he conducted in the Austin Independent School District in Texas, indicated that students with higher numbers of moves had lower mean grade
equivalents. Paredes maintained that although mobility may not cause lower student achievement, it is an important factor that can adversely affect student learning. Schuler (1990) investigated the effect of family mobility patterns on California Achievement Test scores of 253 elementary school students. The results of his study showed that test scores of students whose families moved more than once a year were lower than those of students whose families moved once a year or less.

My review of the literature also disclosed studies (e.g., “Quality Counts,” 1998; Guskey, 1997) that used free/reduced lunch as a proxy for family socioeconomic status (SES). Data on percentages of eligibility for free/reduced lunch are available from the New Jersey Department of Education for each school in New Jersey. According to the Income Eligibility Guidelines of the State of New Jersey Bureaus of Child Nutrition Programs (New Jersey State Department of Education, 2000), eligibility for free/reduced lunch is based on household incomes of students falling below a certain level. Free/reduced lunch is, therefore, the most easily obtainable direct measure of school-level family SES.

For several decades, numerous studies, research projects, and books have examined the issue of SES and its relation to educational outcomes. Educators have traditionally maintained that student achievement is linked to conditions of the home.

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1 The New Jersey Department of Education utilizes the District Factor Grouping (DFG) system. It provides a means of categorizing school districts by their socioeconomic status as a function of measurable quantities such as income, occupation, and education. However, because DFG rankings are district-based, they were not useful in my identifying SES for this study in which the unit of analysis is the school.
specifically the socioeconomic status of the family. The subject of SES and its impact on student achievement have assumed increased significance during New Jersey’s continuing historical debate over how schools could be equitably financed. The increased significance is exemplified by arguments made before the courts in state supreme court cases Robinson v. Cahill (62 N.J. 473, 303 A.2d 273 [1973]) and later Abbott v. Burke (153 N.J. 480, 710 A.2d 450 [1998]). These court cases took explicit account of socioeconomic status in calculating spending differences between districts in an effort to, among other things, help students in low SES communities attain higher achievement in school.

The literature is replete with empirical studies that support the notion that student achievement is influenced by socioeconomic status. Brooks (1988), for example, investigated the best variables for predicting the percentage of students in the 113 Atlanta Public Schools scoring at or above the national norm in reading and mathematics on the Iowa Tests of Basic Skills. The results of her stepwise regression analysis indicated that socioeconomic status was the best predictor for high school students for two consecutive years in reading and for one year in mathematics. Guskey (1997) studied the relationship between contextual and socioeconomic variables and school-level results. He conducted a multiple regression analysis using statewide performance-based student data collected over a 3-year period from 49 schools in a Kentucky school district. Guskey’s findings showed that the socioeconomic variable (measured by the percentage of students qualifying for free or reduced lunch) explained a large proportion of variance in scores at all school levels. Lamdin (1995) gathered data from the Baltimore, Maryland, public
schools to investigate the relationship between school size and student performance on standardized achievement tests. His regression analysis initially showed that school size minimally affected student performance. However, when he controlled for additional school input measures, such as teacher/pupil ratio and per-pupil expenditure, his study revealed that socioeconomic status was important to student achievement.

Hirth and Mitchell (1995) studied socioeconomic status and student achievement. They analyzed fiscal data and student achievement test scores in Indiana during the 1993-94 school year. Using t-tests for determining significance, the researchers found that there was a high correlation between SES and student achievement. Caldas and Bankston (1997) reported their investigation of relationships between black high school students' academic achievement and the socioeconomic status of the students' peers and families. The researchers used test scores, school data, and student surveys to show that family poverty status, family social status, and peers' family social status all influenced individual academic achievement. Fowler (1989) conducted a study concerning school size effects for 293 public secondary schools in New Jersey. In his regression analysis, he regressed 18 school outcomes, including the average scores on state-developed tests, on 23 independent school characteristics, such as percentages from low-income families. Fowler reported that district socioeconomic status and the percentage of students from low-income families in the school were the most consistent factors related to school outcomes.

Most recently, the issue of the relationship between SES and student achievement was highlighted in a 270-page national study on "Quality Counts '98- The Urban
Challenge-Public Education in the 50 States.” The study presented an in-depth, state-by-state analysis of the national dimension of the problem of urban (low SES) education. The analysis showed that “urban students perform far worse, on average, than children who live outside central cities on virtually every measure of academic performance” (“Quality Counts,” 1998, p. 9). The report also provided evidence by the National Assessment of Educational Progress (NAEP), a federal testing program that provides the best state-by-state data on student performance, that urban students in high-poverty schools do the worst of all students. Moreover, tabulations from the 1994 NAEP reading test and the 1996 NAEP mathematics and science tests showed that the percentage of students scoring at “basic” level or higher on NAEP in urban high-poverty schools was substantially lower than that in the non-urban high-poverty schools (“Quality Counts,” 1998, p. 56).

Kozol (1991) was an advocate for children in America regarding the inadequacies of education in poor socioeconomic communities. The author presented his personal assessment of the influence of SES on student achievement spanning the years 1964 to 1991. His account addressed the “savage inequalities” children face in low socioeconomic areas throughout the United States. Kozol described children from poor families in schools in the inner cities and the less affluent suburbs.

Particularly poignant was Kozol’s description of the progress of his fourth grade class in taught in Boston in 1964. He illustrated the influence of low SES on student achievement nearly four decades ago as he stated, “The results were seen in the first tests I gave. In April, most were reading at the second grade level. Their mathematics ability
was at the first grade level” (p. 1).
CHAPTER III
METHODOLOGY

This research compared and contrasted vocational and comprehensive schools both quantitatively, through statistical methods (descriptive statistics, ordinary least squares regression, and graphical analysis), and qualitatively through interviews. My use of both methods aligned with Hallinger and Heck (1996) who stated, “In our view, quantitative methods are essential for assessing the extent to which administrative effects are present in our schools. The use of qualitative approaches is essential, however, if we are to understand the more complex processes that underlie this complex set of interactions” (p. 14).

The study investigated the relationship between principal transformational leadership style and HSPT passing rates in reading, mathematics, writing, and all sections combined. The investigation controlled for the variables of student enrollment size, attendance rate, mobility rate, free/reduced lunch eligibility, and the interaction of high school-type (vocational vs. comprehensive) with transformational leadership.

To measure principal leadership style, in spring 2000 I sent the Multifactor
Leadership Questionnaire (MLQ) to 66 principals: 22 in vocational high schools¹ and 44 in comprehensive high schools². The principals completed and returned 57 (18 vocational, 39 comprehensive) of the 66 principal surveys I sent out. I used the completed surveys to tabulate the transformational leadership style of the principals.


The New Jersey Department of Education compiles data for the New Jersey Report Card from various sources such as the school register, Fall Survey certificated staff report, and statewide student testing results. The Report Card provides a complete picture of the makeup of every New Jersey school by categories entitled “Facts About Our School,” such as test scores, enrollment size, student attendance rates, and student mobility rates. The Report Card provides district level data as well as school level data.

¹ These are the 22 “full-time” vocational high schools that administer the New Jersey HSPT.
² The number of comprehensive high schools doubles the number of vocational schools; schools were randomly chosen proportionate to number of vocational schools in each county.
For the purposes of this study, however, where the unit of analysis is the school, I used only school level data from the Report Card.

Regression Model

This section explains the basic model used for analyzing the relationship between principal transformational leadership style and HSPT passing rates. The subsequent sections explain, in more detail, the variables used in the model.

I modeled HSPT passing rates in reading, mathematics, writing, and all sections combined as a linear function of principal transformational leadership style and other variables, including vocational and comprehensive classification. The model is:

$$\text{HSPT}_y = \beta_{i1} + \beta_{i2} \text{TrLS}_j + \beta_{i3} \text{E}_j + \beta_{i4} \text{ATT}_j + \beta_{i5} \text{MR}_j + \beta_{i6} \text{FRL}_j + \beta_{ik} \text{(TrLS)} V_j + \epsilon_y$$

i = 1 if reading test
   2 if mathematics test
   3 if writing test
   4 if all sections combined (reading, mathematics, writing)

j = 1, 2, ..., 57 school.

The unknown coefficients, $\beta_{ik}$ (i = reading, mathematics, writing, and all sections combined; k = 1, ..., 6) are the weights for each of the six independent variables in the model. That is to say, they show the importance of each variable in determining passing rates. There is also a constant term in the model, $\beta_{i0}$, which is the mathematical intercept of the equation.\(^3\) I estimated these coefficients using Ordinary Least Squares (OLS).

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\(^3\) In an algebraic equation, the intercept is the value of $y$ when $x = 0$. In the regression equation, it is the value of the dependent variable when all the independent variables have no effect.
regression methodology (Moore & McCabe, 1993).

The dependent variable of the model is:

\[ HSPT_{ij} = \]

HSPT passing rate for test i in school j, administered in October 1998, as reported in the New Jersey Department of Education October 1998 HSPT State Summary.

The six independent variables are:

1. \( TrLS_j = \) Transformational leadership style of the principal in school j, coded as the leadership score of principals. The researcher compiled leadership scores from responses on the MLQ, which were based on the principals’ self-reported leadership behaviors. My method of operationalizing leadership appears in detail later in this chapter.

2. \( E_j = \) Enrollment in school j, as reported on the 1998-1999 New Jersey Report Card; coded as the number of students on roll as of October 1998;

3. \( ATT_j = \) Student Attendance Rate in school j, as reported on the 1998-1999 New Jersey Report Card; coded as a percentage from 0% to 100% as of October 1998;

4. \( MR_j = \) Student Mobility Rate in school j, as reported on the 1998-1999 New Jersey Report Card; coded as a percentage from 0% to 100% as of October 1998;

5. \( FRL_j = \) Free/Reduced Lunch in school j, as reported on the New Jersey Department of Education 1998 Fall Survey; coded as a percentage eligible
for free/reduced lunch from 0% to 100% as of October 1998.

6. $(\text{TrLS})_j V = I$

An interaction variable. It consists of the transformational leadership score (TrLS) multiplied by a dummy variable, coded as $V_j = 1$ if school $j$ is a vocational school; $V_j = 0$ if school $j$ is a comprehensive high school.

The reason for including this interaction variable was to examine the effect of transformational leadership style on passing rates in vocational schools compared to comprehensive schools. I could not capture this effect by the other variables. For example, the nature of vocational high schools is that they require of the students less academic courses than comprehensive high schools. Consequently, it is fair to say that vocational schools emphasize vocational and career courses while placing less emphasis on the academic areas and the need to achieve high HSPT passing rates. In contrast, comprehensive high schools emphasize academic courses and high HSPT passing rates while placing less emphasis on career courses. The interaction variable enabled me to determine the effect of transformational leadership by school type (vocational and comprehensive) on passing rates.

I chose the set of six independent variables based on my review of the literature, which indicated that they are important to student achievement. Further, I limited the total number of independent variables to six because of small sample size ($n=57$) which, according to Hair, Anderson, Tatham, and Black (1998), implies low power for hypothesis testing. Hair and his colleagues stated that, as more variables are added to the
model when the sample size is small, there is a reduction in the probability of detecting any significant relationship between the dependent variable (HSPT passing rates) and any of the independent variables.

The last variable, \( \varepsilon_{ij} \), is a random disturbance (for school \( i \), test \( j \)) that I added to the model to capture the unknown and unmeasurable factors affecting passing rates. Regarding the issue of random disturbance, Gujarati (1992) stated, “even if the researcher included all the relevant variables . . ., some intrinsic randomness . . . is bound to occur that cannot be explained no matter how hard we try” (p. 123). For example, in this study the degree of students’ parental encouragement prior to each test is an unknown and unmeasurable factor. This factor could affect the passing rates for each test (reading, mathematics, and writing) differently and will also differ by school.

There are four assumptions about the random disturbance:

1. The disturbance is normally distributed.

2. The disturbance has a zero mean.

3. The disturbance for test \( i \) (i.e., reading, mathematics, and writing) has a constant variance across schools.

4. The disturbance is uncorrelated among schools and among tests.

The hypotheses I tested for each HSPT test \( i \) are:

\( H_{\text{Al}} \): the transformational leadership style of the principal has a positive effect on scores such that a school that has a principal with a high transformational score achieves higher HSPT passing rates;
H_{A2}: enrollment has a negative effect on scores such that higher enrollment results in lower HSPT passing rates;

H_{A3}: student attendance rate has a positive effect on scores such that higher attendance results in higher HSPT passing rates;

H_{A4}: student mobility rate has a negative effect on scores such that higher mobility results in lower HSPT passing rates;

H_{A5}: eligibility for free/reduced lunch has a negative effect on scores such that a higher percentage of eligibility results in lower HSPT passing rates;

H_{A6}: The transformational leadership style of principals has less of an effect on HSPT passing rates in vocational schools compared to comprehensive high schools.

I summarize these hypotheses as:

\[ H_{A1} : \beta_{i1} > 0 \]
\[ H_{A2} : \beta_{i2} < 0 \]
\[ H_{A3} : \beta_{i3} > 0 \]
\[ H_{A4} : \beta_{i4} < 0 \]
\[ H_{A5} : \beta_{i5} < 0 \]
\[ H_{A6} : \beta_{i6} < 0 \]

There are two reasons for my development of the regression model. First, researchers can use the model to determine the differential importance of the variables, in particular leadership style. For example, if the coefficient for principal leadership is the highest of all the variables (assuming all the variables are significant), leadership is more important than the other five variables in explaining HSPT passing rates. Likewise, if the coefficient for attendance is the highest, then attendance has the most weight in
accounting for passing rates.

Second, the model, given the set of statistically significant variables, can be used by schools to predict HSPT passing rates. That is to say, if schools know the values for the independent variables, they could use the model to predict the likely passing rates for the HSPT. For example, if a school, knowing the values of the other five variables, quantifies principal leadership by the MLQ, it would then be able to assess the likelihood of any one principal influencing high passing rates on the HSPT. Moreover, the model would enable schools to predict the likelihood of HSPT passing rates if they know the values of all six variables. In effect, the model is a “formula” for guiding schools to target areas characterized by the variables, which impact their achievement of high HSPT passing rates.

Regression Model Variables

This section describes the method I used to select the dependent and independent variables in the regression model. First, I describe the October 1998 HSPT State Summary Report, which the New Jersey Department of Education uses to provide HSPT passing rates. Second, I describe the survey instrument, the MLQ, which I used to identify the leadership variable, principal transformational leadership style. Third, I present the New Jersey School Report Card, Fall Survey, and the method I used to select and define the additional independent and control variables.
Dependent Variable:

HSPT Passing Rates in Reading, Mathematics, Writing, and All Sections Combined

The dependent variables I used for this study were HSPT passing rates in reading, mathematics, writing, and all sections combined as reported by the New Jersey Department of Education in the October 1998 State Summary Report. The New Jersey Grade 11 HSPT consists of three sections: reading, mathematics, and writing. The reading section requires students to read passages and to answer questions about each passage. The mathematics section requires students to solve problems of basic mathematics, algebra, and geometry. The writing section requires students to write an essay on a topic provided by the New Jersey Department of Education. It also requires students to read passages and answer multiple-choice questions that measure a student’s revising and editing skills, such as correct usage, sentence construction, and organization. The New Jersey Department of Education reports HSPT scores as scale scores that range from 100 to 500 for individual students for each section. Students must achieve a passing score of 300 on each of the three sections of the HSPT as one of the requirements for a high school diploma.

Independent Variable: Transformational Leadership

The survey instrument I used to identify transformational leadership styles of principals was the Multifactor Leadership Questionnaire (Bass & Avolio, 1995). I selected the MLQ for three reasons. First, it is based on the theory of transformational leadership consistent with current school reform initiatives. Bass and Avolio (1997)
stated, “The transformational leader has goals that are highly consistent with the ‘best practices’ of organizational development in that each focuses on developing greater potential to achieve higher levels of development and performance over time” (p. 96). Similarly, Leithwood, Leonard, and Sharratt (1998) stated that “transformational conceptions of leadership are well matched to the context of a school restructuring agenda” (p. 272). Therefore, according to these researchers, identifying a principal leadership style as transformational has significant implications for the impact of principal leadership style on HSPT scores within the context of systemic reform in New Jersey schools.

Second, the MLQ addresses higher level aspects of the school organization, such as intrinsic motivation and inspiration. Bass (1997) posited that “the old paradigms of task-oriented or relations-oriented leadership, directive or participative leadership, and autocratic or democratic leadership and related exchange theories ignored effects on leader-follower relations of the sharing of vision, symbolism, imaging, and sacrifice” (p. 133).

Third, the MLQ is a value-based method of identifying leadership style. As stated by Bass and Avolio (1997), “The MLQ assesses leadership behaviors that are associated with what is generally considered ‘exceptional’ or ‘exemplary’ leadership” (p. 4). Bass and Avolio maintained that the MLQ expands the range of leadership styles that have been measured by measuring leadership behaviors from ineffective (laissez-faire) to highly effective (transformational). Therefore, according to these authors, the MLQ is a good instrument for measuring principal leadership styles. The MLQ aligns with school
reform efforts in New Jersey, is consistent with current organizational issues and concerns regarding the relationship between the leader and subordinate needs, and identifies what educators believe to be the “ideal” leader.

The MLQ measures transformational leadership behaviors that are associated with, what Bass and Avolio (1997) referred to as, “exemplary” leadership. It also measures transactional behaviors, which are more conventional and ordinary. Bass and Avolio described the difference between transformational and transactional leadership as follows:

When all levels of managers, students, and project leaders around the world were asked to describe the characteristics and behaviors of the most effective leaders they had worked with in their past, their descriptions encompassed much more than the reward-for-effort exchange behavior and corrective orientation that typifies transactional leadership.

Specifically, they described leaders who had the greatest influence on them as transformational: inspirational, intellectually stimulating, challenging, visionary, development oriented, and determined to maximize performance. (p. 3)

The MLQ includes scales measuring dimensions of behavior associated with effective and ineffective leadership as well as nonleadership “laissez-faire” behaviors. Thus, the MLQ measures leadership styles ranging from exceptional to leadership styles only responding to situations when things go wrong. Bass and Avolio (1997) explained that even though researchers have always recognized that there is a difference between
extraordinary and ordinary leadership, the MLQ enables us to measure, explain, and demonstrate, in behavioral terms, leadership style. That is, the MLQ assesses leadership in terms of the degree to which leaders exhibit behaviors, which are inspirational, motivational, intellectually stimulating, challenging, visionary, and developmentally oriented.

The MLQ is available in two forms. Both forms contain items that describe observable leader behaviors that are based on the concepts of transformational leadership, transactional leadership, and nontransactional or laissez-faire leadership. The MLQ is available in a validated long form of 63 items, which is used primarily by professional developers and trainers. It is also available in a validated shorter form of 45 items, which is used primarily by researchers for survey purposes. Two types of questionnaire forms are available, as well: the Self-Rating Form, by which leaders rate themselves, and the Rater Form, by which associates rate their leaders. In this study, I asked principals to complete the short, self-rating form of the MLQ (see Appendix B).

The MLQ assesses five components of transformational leadership, three components of transactional leadership, one nontransactional leadership component (laissez-faire), and three outcome components. It contains a total of 45 items: 36 leadership items (20 transformational, 12 transactional, and 4 nontransactional) as well as 9 outcome items that measure the degree to which leaders inspire extra effort, are effective, and enhance satisfaction through their behaviors.

Avolio, Bass, and Jung (1996) determined the choice of the 45 items on the MLQ. Avolio and his colleagues conducted a validation study (using 14 samples, containing a
total of 3,570 cases) which confirmed that the items on the survey are the best indicators of their constructs.\textsuperscript{4} Table 4 shows the scales and number of items per scale (Bass & Avolio, 1997, p. 13). In Appendix C, I summarize each of the factors on the MLQ by representative items for each factor (Bass & Avolio, 1997, pp. 34-35).

\textsuperscript{4} See Avolio, Bass, and Jung (1996) for further information concerning validation and replication.
Table 4

Components of Leadership Measured by the Multifactor Leadership Questionnaire

<table>
<thead>
<tr>
<th>Scale</th>
<th>Number of Items (Revised)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transformational Leadership</td>
<td></td>
</tr>
<tr>
<td>Idealized Influence (Behavior)</td>
<td>4</td>
</tr>
<tr>
<td>Idealized Influence (Attributed)</td>
<td>4</td>
</tr>
<tr>
<td>Inspirational Motivation</td>
<td>4</td>
</tr>
<tr>
<td>Intellectual Stimulation</td>
<td>4</td>
</tr>
<tr>
<td>Individualized Consideration</td>
<td>4</td>
</tr>
<tr>
<td>Transactional Leadership</td>
<td></td>
</tr>
<tr>
<td>Constructive Transactions</td>
<td></td>
</tr>
<tr>
<td>Contingent reward</td>
<td>4</td>
</tr>
<tr>
<td>Corrective Transactions</td>
<td></td>
</tr>
<tr>
<td>Management-by-exception (active)</td>
<td>4</td>
</tr>
<tr>
<td>Management-by-exception (passive)</td>
<td>4</td>
</tr>
<tr>
<td>Nontransactional Leadership</td>
<td></td>
</tr>
<tr>
<td>Laissez-Faire</td>
<td>4</td>
</tr>
<tr>
<td>Outcome Factors</td>
<td></td>
</tr>
<tr>
<td>Satisfaction with the leader</td>
<td>2</td>
</tr>
<tr>
<td>Individual, Group, and Org Effectiveness</td>
<td>4</td>
</tr>
<tr>
<td>Extra Effort by Associates</td>
<td>3</td>
</tr>
<tr>
<td>TOTAL</td>
<td>45</td>
</tr>
</tbody>
</table>

Other Independent Variables:

Enrollment, Attendance, Mobility, Free/Reduced Lunch, and Interaction Variable

(Transformational Leadership interacting with High-School Type)

The 1998-1999 New Jersey School Report Card from the selected vocational and comprehensive high schools provided enrollment, attendance, and mobility data for this
study. The New Jersey Department of Education defined enrollment, attendance, and mobility in the New Jersey Report Card as follows:

Enrollment: “The count of students on-roll in October of each school year. Students who attend two different schools in a single day are considered shared time and thus counted as one-half at each location. The reported total school enrollment is based only on the grade categories appearing in the School Report Card” (New Jersey Department of Education, 1998).

Student Attendance Rate: “The average percentage of students each day in the school. These percentages are calculated by dividing the average daily student attendance (ADA) or ‘days present for the school’ by the average daily student enrollment (ADE) or ‘possible days for the school’” (New Jersey Department of Education, 1998).

Student Mobility Rate: “A measure of the disruption to teaching and learning caused by students entering or exiting other than at the beginning or end of the year. These rates are calculated by dividing the number of students who entered or exited the school after October by the October school enrollment” (New Jersey Department of Education, 1998).

Regarding enrollment, the majority of high school enrollment data appearing in the Report Card came from enrollment in grades 9-12. However, several high schools had data based on alternative grade configurations. In this study, 47 of the 57 high schools had data reported by the New Jersey Department of Education based on 9-12 grade configurations. Ten had data they based on configurations such as 9-11, 11-12, 7-
12, 6-11, 8-12, and 5-12. Kanarick (1992) reported no significant relationship between grade level configuration and HSPT passing rates. However, I attempted to compensate, although by an approximate method of adjustment, for differences in grade configurations. I compensated for the differences in grade level configurations by adjusting the enrollment data with a ratio proportionate to a 9-12 configuration. I multiplied the enrollment of an 8-12 (five grade levels) school, for example, by 4/5 to make the enrollment approximately proportionate to a 9-12 school.

Further, the vocational high school report card differs somewhat from the comprehensive high school report card. For example, vocational high schools report data on Occupational Program assessment results, unlike the comprehensive high schools. Comprehensive high schools report data on the average class size of an English class, whereas vocational high schools do not. Appendix D shows enrollment, attendance, and mobility as categories of school level data on the New Jersey School Report Card common to both vocational and comprehensive high schools.

The 1998 Fall Survey from the selected schools provided data on free/reduced lunch. The Income Eligibility Guidelines of the State of New Jersey Bureau of Child Nutrition Program defined free/reduced lunch as follows:

Free/Reduced Lunch: The percentage of students eligible for free/reduced lunch based on State of New Jersey income eligibility guidelines.

Students are determined to be eligible for free/reduced lunch based on total household income falling below a certain amount. Students must complete an application form to apply for this benefit (New Jersey State
In addition, I created an interaction variable, consisting of high school-type (vocational vs. comprehensive) and leadership, for the initial regression model. The New Jersey Department of Education identifies schools as vocational by its DFG classification of "V." Categorizing a high school as either vocational or comprehensive enabled me to control for the differences in vocational and comprehensive high schools for all variables. Then, to see the effect of transformational leadership in vocational high schools as compared to that in comprehensive high schools, I formulated an interaction variable (leadership variable interacting with vocational or comprehensive).

Data Collection

This section describes the data collection in terms of how I selected schools and my method of surveying principals. I describe in detail the method and rationale for scoring the MLQ to create the leadership variable. I also present the method of interviewing principals and teachers, as well.

Surveying Principals

To maximize the success of the data collection, I conducted a pilot study, with two randomly chosen high school principals, using the methodology described below. The purpose of the pilot study was two-fold. First, it provided me with the opportunity to practice the methods and procedures of data collection with a small sample of principals. Second, the pilot study generated feedback from the principals regarding the methods I
used in the data collection. This feedback was useful since it led to minor modifications in the methodology I found necessary for the success of the actual study.

I used the MLQ to survey principals of the 22 “full-time” vocational high schools in New Jersey for which HSPT scores are reported by the New Jersey Department of Education (1999b). I also used the MLQ to survey principals of 44 comprehensive high schools (see footnote 2). Through a method of stratified random sampling, I selected two comprehensive high schools for each county in which a vocational school was located.

I used a stratified random sampling methodology to select the 44 schools to eliminate the possibility of skewed data related to District Factor Group (DFG) identification. To illustrate, I encountered a problem in selecting one representative comprehensive high school from each of the counties in which there is a full-time vocational high school. The problem was that many of these counties had several comprehensive high schools. In addition, in many instances the New Jersey Department of Education classified each comprehensive high school in its respective county as

\[\text{There are other “shared-time” vocational high school districts in New Jersey. These schools do not report HSPT scores since students attend only vocational (shop) classes in these schools. The HSPT scores of the shared-time vocational students are included in the data of the sending district’s comprehensive high school where students attend their academic classes.}\]

\[\text{According to the New Jersey Department of Education (1999c), the DFG “is an indicator of the socioeconomic status of citizens in each district and has been useful for the comparative reporting of test results from the New Jersey’s statewide testing programs…. They range from A (lowest socioeconomic districts) to J (highest socioeconomic districts).”}\]
belonging to a different DFG.\textsuperscript{7} My selecting the 44 comprehensive high schools by a random sampling method eliminated this problem.

\textbf{The MLQ}

I mailed the MLQ self-rating survey to each of the selected principals with a letter in which I indicated the purpose of the survey and my request for its return within one week (see Appendix E). I included a self-addressed, stamped envelope. I asked the principals to complete the 45 questions on the survey by indicating how frequently or to what degree they believed they engaged in particular leadership behaviors according to the following scale:

\begin{itemize}
\item \textbf{Scale for Leadership Items (Bass \& Avolio, 1997, p. 14):}
\item 0 = Not at all
\item 1 = Once in a while
\item 2 = Sometimes
\item 3 = Fairly often
\item 4 = Frequently, if not always
\end{itemize}

Bass and Avolio (1997) explained that the MLQ contains simple, clear instructions and takes approximately 15 minutes to complete. Nevertheless, prior to the

\textsuperscript{7} In Passaic County, for example, Passaic High School, located in Passaic, was categorized by the New Jersey Department of Education as belonging to DFG: A. It categorized Passaic Valley High School, located in Little Falls, as belonging to DFG: DE.
mailing of the surveys. I telephoned the principals as a way to maximize the completion
and return of the surveys. I requested the cooperation of each principal to help with my
research. In addition, I made follow-up phone calls to those principals who did not return
the survey to me within one week’s time. Bass and Avolio reported response rates for
mailed surveys in various studies to be from as high as 90 per cent in a large insurance
firm to as low as 20 percent in a study involving employed MBA graduates. The
response rate in this study was 86% (57 of the 66 principals completed and returned their
surveys). The researcher scored the completed surveys.

The MLQ Scoring Key (Bass & Avolio, 1995) (see Appendix F) describes the
general method of scoring. The MLQ scale scores are average scores for the items on the
scale. Summing the items and dividing by the number of items that make up the scale
yields each scale score. All the leadership style scales have four items (Outcome scales
differ in number of items: Extra Effort has three items, Effectiveness has four items, and
Satisfaction has two items).

Transformational Leadership Variable

In order to tailor the results of the MLQ to the specific purposes of this study and
to address relevant theoretical issues as well, I explored four alternative ways to
operationalize transformational leadership style in the regression model. Central to my
exploration was the fact that Bass and Avolio (1997) consider “contingent reward” as
transactional leadership behavior and Leithwood, Jantzi, and Steinbach (1999) consider it
as transformational leadership behavior. Each of the following four alternatives
represents different ways of scoring the MLQ, reflecting the transformational leadership theories of one or a combination of both Bass and Avolio, and Leithwood and his colleagues.

The first alternative I explored was a higher order transformational scale. I designed this scale by combining the five transformational scales (that is, Idealized Attributes, Idealized Behaviors, Inspirational Motivation, Intellectual Stimulation, and Individualized Consideration) into one mean. There are 20 questions (out of a total of 45) on the MLQ comprising the five transformational components that measure the frequency of time principals self-report transformational leadership behavior, as defined by Bass and Avolio (1995). For each surveyed principal, I used the average of the responses to these 20 questions (MLQ questions 2, 6, 8, 9, 10, 13, 14, 15, 18, 19, 21, 23, 25, 26, 29, 30, 31, 32, 34, 36) to create the first alternative transformational leadership scale (mtrls).

The second alternative I explored was consistent with Bass and Avolio (1993) who argued that effective leaders are both transactional and transformational. Indeed, they stated, “Fundamental to a full range of leadership is that more effective leaders display each style to some degree” (Bass & Avolio, 1996). There are 12 questions on the MLQ that measure transactional behavior, as defined by Bass and Avolio: 1, 3, 4, 11, 12, 16, 17, 20, 22, 24, 27, 35. Therefore, for each surveyed principal, I created a second alternative transformational leadership scale (tr_trans) using the ratio of the average transformational score to the average transactional score.

The third alternative I explored was congruent with Leithwood, Jantzi, and

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8 Based on personal correspondence with Bruce Avolio, November 28, 1999.
Steinbach (1999). They contended that the leadership dimension Contingent Reward should be considered as part of transformational leadership. Their contention is different from that of Bass and Avolio (1997) who viewed the leadership dimension Contingent Reward to be only transactional. In defense of their contention, Leithwood and his colleagues stated:

The possibility of providing informative feedback about performance in order to enhance teachers' sense of professional self-efficacy, as well as contributing to their day to day sense of job satisfaction, makes this set of leadership practices [Contingent Reward] potentially transforming, as well. (p. 73)

Thus, for each surveyed principal, I created a third alternative transformational leadership scale (trcr) consisting of the average of the 20 transformational leadership responses plus the responses to the four questions (MLQ questions 1, 11, 16, 35) measuring contingent reward behaviors.

Finally, consistent with Bass and Avolio (1997) and Leithwood, Jantzi, and Steinbach (1999), I developed a fourth and final alternative scale. This scale aligns with two important theoretical issues relevant to this study. First, as stated by Bass and Avolio, the most effective leaders demonstrate both transformational and transactional behaviors. Second, as argued by Leithwood and his colleagues, contingent reward behaviors are also transformational. For this scale, for each surveyed principal, I calculated a ratio by dividing the average of the transformational score plus the scores of the four contingent reward responses by the average of the 12 transactional responses. In
short, by adjusting Bass and Avolio’s method of scoring the MLQ, I created a transformational leadership scale that conforms to Leithwood’s transformational leadership model. (As I mentioned in Chapter 2, I have adopted Leithwood’s model as a foundation for this study because it is the most current and comprehensive model of transformational leadership in schools.) Because of its theoretical relevance, I used this fourth alternative scale (trcr_tra) to operationalize principal transformational leadership as the independent variable in the regression model.

My analysis of the quantitative data provided additional justification for choosing the fourth alternative scale. First, a correlation analysis between the dependent variables and the four alternatives (see Table 9 in Chapter 4) revealed the most significant correlations between transformational leadership (operationalized by the researcher as the fourth alternative, trcr_tra) and HSPT passing rates. Simply stated, compared to the other alternatives, the fourth alternative had the most significant positive relationship with passing rates.

Second, I developed regression Models B through E (see Table L1 in Appendix L) to test the four alternate definitions of transformational leadership in the regression equation for HSPT passing rates in reading. The regression equation in Model E using the fourth alternative (trcr_tra) as the leadership variable explained 77% of the variation in HSPT passing rates in reading. In addition, this leadership variable had a highly significant $p$ value of .007. The regression equations using the other three alternatives (mtrls, trcr, and tr_trans) as leadership variables, explained less of the variation in passing rates and with less significant $p$ values (.015, .037, .009, respectively). I found similar
results when I did the same analyses for the regression equations for HSPT passing rates in mathematics, writing, and all sections combined (see Tables L2, L3, and L4 in Appendix L). Therefore, the results of the regression analyses of Models B through E highly supported my choice of the fourth alternative (trcr_tra) to operationalize transformational leadership.

Table 5 summarizes the four alternative scales, which are based on responses on the MLQ. (See Appendix K for code abbreviations sheet for alternatives.)
Table 5

Alternatives to Operationalizing Transformational Leadership Based on Responses to the MLQ

<table>
<thead>
<tr>
<th>Alternatives</th>
<th>Method of Operationalizing Transformational Leadership</th>
<th>Theoretical Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 mtrls</td>
<td>Average of responses to 20 MLQ Transformational questions.</td>
<td>Bass and Avolio (1997)</td>
</tr>
<tr>
<td>2 tr_trans</td>
<td>Ratio of the average of responses to 20 MLQ Transformational questions to the average of responses to 12 MLQ Transactional questions.</td>
<td>Bass and Avolio (1997)</td>
</tr>
<tr>
<td>3 trcr</td>
<td>Average of responses to 20 MLQ Transformational plus four MLQ Contingent Reward questions.</td>
<td>Leithwood, Jantzi, and Steinbach (1999)</td>
</tr>
<tr>
<td>4 *trcr_tra</td>
<td>Ratio of the average of responses to 20 MLQ Transformational plus four MLQ Contingent Reward questions to the average of responses to 12 MLQ Transactional questions.</td>
<td>Bass and Avolio (1997); Leithwood, Jantzi, and Steinbach (1999)</td>
</tr>
</tbody>
</table>

* Denotes alternative I used in the regression model.
Principal and Teacher Interviews

To gain a deeper and richer understanding of the influence of principal leadership style on student HSPT scores in vocational and comprehensive high schools, I conducted qualitative research, which consisted of principal and teacher interviews. I conducted the interviews in late spring 2000, after I completed the survey portion of the study.

I conducted these interviews for three reasons. First, the interviews provided additional insight for my interpretation of the quantitative results of this study. House (1988) maintained, “qualitative research can be used to elaborate on quantitative findings” (p. 259). Thus, because survey results do not necessarily reveal what people believe or identify how they feel, it is important to capture these feelings in the form of interview responses. If, for example, I found principals to be highly transformational based on their scores on the MLQ, the principal and teacher interviews could support, or possibly contradict, these findings. The interviews, thus, enabled me to have a richer and more comprehensive understanding of the principals’ leadership styles.

Second, teacher interviews added an additional dimension to the analysis of results since, due to the limitations of this study, I did not request teachers to complete the MLQ about their principals. As such, the interview process gave teachers the opportunity to verbalize their opinions regarding their principals’ leadership styles. The interviews facilitated my analysis of principal leadership style from another perspective -- that of the teacher.

Third, the interviews provided me with a more insightful look at principal leadership style in vocational schools compared to that in comprehensive high schools.
By focusing on issues and challenges specific to principal leadership in both vocational and comprehensive high schools, I developed a more comprehensive understanding of the relationship of principal leadership style to student achievement.

I selected and interviewed two vocational high school principals and two comprehensive high school principals whose leadership styles were identified using the MLQ (see Appendix G). I asked each principal to read and sign an interview permission form (see Appendix H), which explained the nature and purpose of the interview portion of the study. It was important to select principals who had been in their positions in the same school since October 1993 when the HSPT was first administered. I conjectured that HSPT scores would more likely reflect the principal’s leadership style if the principalship had been consistent since the inception of the test. Therefore, I selected principals of the following four high schools for the interview process. The principals had each been in their positions at least since October 1993. I matched the two pairs of selected vocational and comprehensive schools to be in the same county as follows:

Vocational High School A, County A
Comprehensive High School A, County A
Vocational High School B, County B
Comprehensive High School B, County B

I also selected and interviewed two teachers, one 11th grade English and one 11th grade mathematics, in each of the two vocational and comprehensive high schools (see Appendix I). I asked each teacher to read and sign an interview permission form (see
Appendix J), which explained the nature and purpose of the interview portion of the study. Since the HSPT assesses reading, mathematics, and writing skills at the beginning of the 11th grade, I decided that 11th grade English and mathematics teachers were best qualified to comment on principals’ leadership styles and how they affect student success on the HSPT. I also believed that it was important to select teachers who had been in the school with the principal since October 1993. If I could not identify teachers who met the above criteria and were available for interviewing, I attempted to identify teachers who had been teaching for the longest period of time within the given content and grade areas. Seven out of the eight teachers I interviewed were in the schools with the principal since October 1993. Only one mathematics teacher was in the school with the principal for a shorter period of time.\(^9\)

The design of the interview process consisting of twelve interviews can be summarized as follows:

Vocational High School A: Principal + English teacher + mathematics teacher

Comprehensive High School A: Principal + English teacher + mathematics teacher

Vocational High School B: Principal + English teacher + mathematics teacher

\(^9\) I determined that although this teacher was in the school for a little over two years, the quality of his contact with the principal, experience in the content area, and availability to speak with me, made him a suitable candidate for the interview process.
I analyzed the answers to both the principals’ and teachers’ open-ended interview questions in a qualitative fashion. My handwritten field notes consisted of principal and teacher responses to my interview questions (see Appendices G and I). I coded the qualitative data, which was generated by the principal and teacher responses, as text units using Leithwood’s model of school transformational leadership as a framework.

The coding process led to my categorizing principals’ leadership practices, as reported by both principals and teachers, according to the three main categories of Leithwood’s model: Setting Directions; Developing People; Redesigning the Organization. For example, I coded text units containing references to principals’ behavior related to their helping provide colleagues with an overall sense of purpose, as belonging to the category of Setting Directions. Likewise, I coded text units that referenced principals as treating everyone equally, as belonging to the category of Developing People. The coding process and subsequent analysis of the qualitative data supported my final analysis and discussion of the statistical findings, conclusions, and implications of this study.

Summary

This study utilized both quantitative and qualitative methods to explore the influence of principal leadership style on student HSPT passing rates in reading, mathematics, writing, and all sections combined in a sample of New Jersey vocational
and comprehensive high schools. The quantitative portion consisted of an Ordinary Least Squares regression model. The model consisted of HSPT passing rates as the dependent variables and the following six independent variables: transformational leadership style of the principal; student enrollment size; student attendance rate; student mobility rate; eligibility of free/reduced lunch; and an interaction variable (leadership interacting with school-type). The qualitative portion, which consisted of principal and teacher interviews in a sample of vocational and comprehensive high schools, was guided by Leithwood’s framework. The interviews focused on principal transformational leadership and its relationship to student success on the HSPT.
CHAPTER IV
PRESENTATION AND ANALYSIS OF QUANTITATIVE DATA

I analyze the quantitative data\(^1\) by first exploring each of the variables using descriptive statistics and graphs. I discuss the variables first at the aggregate level, across both school types (comprehensive and vocational), and then at the school-type level.\(^2\)

I then analyze the data using four related regression models, which are each based on one generic model (see Chapter 3), and six hypotheses for each model. The four regression models are all essentially the same, differing only by dependent variables: passing rates in the reading, mathematics, and writing sections, and all sections combined of the HSPT. Finally, I test the hypotheses for each model using statistical techniques that include analysis of variance and multiple linear regression analysis. A complete listing of code abbreviations for all the data analyses appears in Appendix K.

\(^1\) I used the computer program SPSS for my statistical analysis. The name SPSS is derived from “Statistical Package for the Social Sciences.”

\(^2\) In order to assure anonymity and confidentiality, as promised to the respondents, I do not disclose names of principals, schools, school districts, and counties.

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Exploratory Data Analysis

Aggregate Level

My purpose in conducting the exploratory data analysis was to understand each variable alone before using it in the regression model. The first step in my analysis was the use of descriptive statistics to examine each dependent and independent variable and to look for group patterns, linear trends, and anomalies (for example, outliers or oddities) in the data. Table 6 is a summary of the dependent and independent variables and the code abbreviation for each variable.
### Summary of Dependent and Independent Variables

<table>
<thead>
<tr>
<th>VARIABLE</th>
<th>CODE ABBREVIATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dependent Variables</strong></td>
<td></td>
</tr>
<tr>
<td>HSPT Reading Score</td>
<td>HSPT_R</td>
</tr>
<tr>
<td>HSPT Mathematics Score</td>
<td>HSPT_M</td>
</tr>
<tr>
<td>HSPT Writing Score</td>
<td>HSPT_W</td>
</tr>
<tr>
<td>HSPT All Sections Score</td>
<td>HSPT_ALL</td>
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<tr>
<td><strong>Independent Variables</strong></td>
<td></td>
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<tr>
<td>Attendance Rate</td>
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<tr>
<td>Enrollment (adjusted) Size</td>
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<tr>
<td>Mobility Rate</td>
<td>MOB</td>
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<tr>
<td>Free/Reduced Lunch Eligibility</td>
<td>X_F_R_LU</td>
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<tr>
<td>Transformational Leadership Variable:</td>
<td>Trcr_tra</td>
</tr>
<tr>
<td>Ratio of average of responses to MLQ transformational plus MLQ contingent reward questions to average of responses to MLQ transactional questions.</td>
<td>Trcr_tr4</td>
</tr>
<tr>
<td>Leadership Interaction Variable:</td>
<td></td>
</tr>
<tr>
<td>Transformational Leadership Variable (see above) multiplied by School-Type (Vocational=1 or Comprehensive = 0)</td>
<td></td>
</tr>
</tbody>
</table>

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3 School-type is a dummy variable. According to Gujarati (1992), a dummy variable represents the quantification of a qualitative (non-numerical) factor. For example, a dummy variable is used to quantify the categories male-female (male=1, female=0) and present-absent (present=1, absent=0). Without this quantification process, these qualitative factors cannot be used in a regression model (p. 251-252).
Table 7 shows descriptive summaries of each dependent and independent variable.

Table 7

**Descriptive Statistics of Dependent and Independent Variables**

<table>
<thead>
<tr>
<th>Variables</th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
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<td>100.0</td>
<td>80.946</td>
<td>17.670</td>
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<tr>
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<td>16.139</td>
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<td>13.161</td>
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<tr>
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<td>100.0</td>
<td>72.330</td>
<td>21.950</td>
</tr>
<tr>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
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<td>80.1</td>
<td>96.3</td>
<td>92.549</td>
<td>2.980</td>
</tr>
<tr>
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<td>2514.50</td>
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<tr>
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<td>48.7</td>
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<td>.79</td>
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<td>.2346</td>
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<tr>
<td>Trcr_tra</td>
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<td>5.67</td>
<td>1.7950</td>
<td>.6592</td>
</tr>
<tr>
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<td>.6119</td>
<td>1.0654</td>
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<tr>
<td><strong>N</strong></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Figure 2 shows the mean of each dependent variable

![Bar chart showing the mean of HSPT Reading, HSPT Mathematics, HSPT Writing, and HSPT All Sections Combined.]

The mean of the HSPT-W variable is highest, indicating that students do best on the writing section of the HSPT. The mean of the HSPT-ALL variable is lowest, which is a result I expected since passing all three sections of the HSPT is much more difficult than passing any one or two of the three sections. The standard deviations are all close, except for the variable HSPT-ALL which, again, is a result I expected because of the difficulty associated with passing all three sections of the HSPT.

Each of the dependent variables has 100% as its maximum passing rate, indicating that at least one school reached this level. My review of the data shows that two schools have 100% passing rates in the reading section of the HSPT, two schools have 100%
passing rates in the mathematics section, six schools have 100% passing rates in the writing section, and one school has a 100% passing rate in all sections combined.\textsuperscript{4} The minimum-maximum ranges for the variables HSPT-R, HSPT-M, HSPT-W, and HSPT-ALL are 83.2, 70.2, and 67.6, and 94.0 respectively, indicating that schools ranged from very low to very high in student achievement. For the variable HSPT-ALL, in particular, the wide range of passing rates underscores the disparate nature of the schools in terms of student academic achievement.

Further supporting the dissimilarity of schools in terms of achievement is the fact that minimum and maximum values of the dependent variables are all rather extreme in terms of standard deviations from the mean.\textsuperscript{5} The minimum value for the variable HSPT-R, for instance, is 3.63 standard deviations below its mean, the minimum value for the variable HSPT-M is 3.40 standard deviations below its mean, and the minimum value for the variable HSPT-W is 4.32 standard deviations below its mean. The minimum value for the variable HSPT-ALL is 3.02 standard deviations below its mean.

The minimum value for the attendance rate variable is also extreme; it is 4.18 standard deviations below the mean. There is a large difference between the minimum and maximum values for the enrollment size variable. This result is due, in part, to differences in grade configurations in some of the high schools. The large difference occurred even though I made approximate adjustments to enrollment sizes in these

\textsuperscript{4} Data exclude Special Education and Limited English Proficient students (New Jersey Department of Education, 1999c).

\textsuperscript{5} I based this calculation on (Mean-Minimum)/SD.
schools (see Chapter 3 for discussion of enrollment size adjustments). There is a large difference between minimum and maximum values for the mobility rate and free/reduced lunch eligibility variables. With respect to the mobility rate variable, the result indicates that some schools have very stable student populations, while others have populations that are changing at a high rate. Regarding the free/reduced lunch eligibility variable, the result suggests that schools range from low SES (socioeconomic status) to high SES.

Although there is a large difference between the minimum and maximum values for leadership scores, 1.12 and 5.67 respectively, the frequency distribution in Figure 3 shows that the variability of the majority of leadership scores is fairly small. Only one individual score appears to be unusually high.\(^6\) That is to say, all of the principals, except for one, appear to be self-reporting leadership scores that are close in value.

\(^6\) I verified that this score was correct, recognizing that it was self-reported by the principal.
I calculated Pearson correlation coefficients for the dependent and independent variables, as shown in Table 8.

### Table 8

**Correlations of Dependent and Independent Variables**

<table>
<thead>
<tr>
<th></th>
<th>HSPT_R</th>
<th>HSPT_M</th>
<th>HSPT_W</th>
<th>HSPT_ALL</th>
<th>ATT</th>
<th>EN_ADJ</th>
<th>MOB</th>
<th>F/R</th>
<th>TRCR_TRA</th>
<th>TRCR_TRA</th>
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<tr>
<td>HSPT_M</td>
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<td></td>
</tr>
<tr>
<td>HSPT_W</td>
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<td>.89**</td>
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<td>.93**</td>
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<td>.80**</td>
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<td>.01</td>
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<td>-.61**</td>
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<td>-.05</td>
<td>1.0</td>
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<td></td>
</tr>
<tr>
<td>F/R LUNCH</td>
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<td>-.65**</td>
<td>-.72**</td>
<td>-.53**</td>
<td>-.08</td>
<td>.50**</td>
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<tr>
<td>TRCR_TRA</td>
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<td>.24</td>
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<tr>
<td>TRCR_TRA</td>
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<td>-.01</td>
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<td>-.22</td>
<td>-.16</td>
<td>.25</td>
<td>.57**</td>
<td>1.0</td>
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</tbody>
</table>

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

** Figure 3. **Histogram of transformational leadership scores of principals.
I examined the relationships among the four dependent variables and the six independent variables. The results reveal significant correlations between the variables HSPT-R, HSPT-M, HSPT-W, and HSPT-ALL at the .01 level. This finding indicates that there is a strong relationship between passing rates on each of the HSPT sections and all sections combined. The variables HSPT-R and HSPT-M most highly correlate with the variable HSPT-ALL at .978 (p< .01) and .947 (p< .01), respectively. This result suggests that students, for example, who have high passing rates in the reading and/or mathematics sections of the HSPT also have high passing rates in all sections combined of the test. The variable HSPT-W most highly correlates with the variable HSPT-R at .932 (p< .01). The strong relationship between passing rates in the reading section and passing rates in the writing section of the test was not a surprising result considering that reading and writing have many of the same language arts skills in common.

The attendance rate variable highly correlates with all the dependent variables. However, the attendance rate variable most highly correlates with the variable HSPT-M at .803 (p< .01), indicating that achievement in mathematics is affected by the number of days students attended school and received mathematics instruction. The mobility rate variable shows a highly significant inverse relationship with each dependent variable, the highest being with the variable HSPT-W at -.652 (p< .01). Similarly, the free/reduced lunch eligibility variable also shows a highly significant inverse relationship with each dependent variable, the most significant being with the variable HSPT-All at -.723 (p< .01).

The correlation analysis reveals no significant relationship between the enrollment
size variable and any dependent variable, contradicting Kanarick’s (1992) finding that school size was an important facilitator of academic achievement. There is also no significant relationship between the enrollment size variable and any other independent variable.

The mobility rate and free/reduced lunch eligibility variables significantly correlate. This finding was not surprising, as educators often relate high mobility rates to low socioeconomic conditions (see Paredes, 1993, for example). The mobility rate and free/reduced lunch eligibility variables both significantly inversely correlate with the attendance rate variable. This finding, again, was not surprising as generally schools that have high mobility and low SES do not have good attendance (see Crone, 1993, for example).

The transformational leadership variable moderately correlates with the variables HSPT-R, HSPT-W, and HSPT-ALL at the .05 level. The transformational leadership variable most highly correlates with the variable HSPT-ALL at .323 (p<.05). The analysis, however, reveals no significant relationship between the transformational leadership variable and the HSPT-M variable. The leadership interaction variable (transformational leadership variable multiplied by vocational or comprehensive school) does not significantly correlate with any dependent or independent variable.

Scatterplots in Figure 4 show the relationship between the transformational leadership variable and the dependent variables.
Figure 4. Scatterplots showing correlations between transformational leadership and HSPT Reading, HSPT Mathematics, HSPT Writing, and HSPT All Sections Combined.
The correlation analysis also confirmed my decision to operationalize principal transformational leadership as the ratio of the average of responses to MLQ transformational plus MLQ contingent reward questions to the average of responses to MLQ transactional questions, trcr_tra (see Table 5 in Chapter 3). Table 9 shows the correlations between the four alternative leadership variables and each dependent variable.

<table>
<thead>
<tr>
<th></th>
<th>HSPT_R</th>
<th>HSPT_M</th>
<th>HSPT_W</th>
<th>HSPT_ALL</th>
<th>MTRLS</th>
<th>TR_TRANS</th>
<th>TRCR</th>
<th>TRCR_TRA</th>
</tr>
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<td></td>
</tr>
<tr>
<td>HSPT_W</td>
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<td>.90**</td>
<td>1.00</td>
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<td></td>
</tr>
<tr>
<td>HSPT_ALL</td>
<td>.98**</td>
<td>.95**</td>
<td>.93**</td>
<td>1.00</td>
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<td>MTRLS</td>
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<td>.18</td>
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<td>1.00</td>
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<td>.999**</td>
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<td>1.00</td>
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** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

Note. See Table 5 in Chapter 3 for description of four alternatives (MTRLS, TR_TRANS, TRCR, and TRCR_TRA).
There is no significant correlation between the variable mtrls (average of responses to the MLQ transformational leadership questions) and any of the dependent variables. The variable tr_trans (the ratio of the average of responses to MLQ transformational questions to the average of responses to MLQ transactional questions) moderately correlates with the variables HSPT-R at .304 (p < .05), HSPT-W at .270 (p < .05), and HSPT-ALL at .309 (p < .05). The tr_trans variable most significantly correlates with the HSPT-ALL variable. The analysis reveals no significant correlation between the variable trcr (the average of responses to MLQ transformational plus MLQ contingent reward questions) and any of the dependent variables. The variable trcr_tra (the ratio of the average of responses to MLQ transformational plus MLQ contingent reward questions to the average of responses to MLQ transactional questions) shows the strongest moderate correlation with the dependent variables, although not with the variable HSPT-M. The variable trcr_tra correlates with the variables HSPT-R at .318 (p < .05), HSPT-W at .283 (p < .05), and HSPT_ALL at .323 (p < .05). The variable trcr_tra most significantly correlates with the HSPT-ALL variable. Although the variable trcr_tra does not significantly correlate with the HSPT-M variable at the .05 level, it does near the .05 significance level at .248 (p = .06). In sum, the correlation analysis reveals that the most significant relationships occurred when I operationalized principal leadership as trcr_tra, the fourth alternative variable. Moreover, this result confirmed my decision to use trcr_tra as the transformational leadership variable in the regression models.

I used boxplots to examine the shapes of the distributions of the dependent and independent variables. Figure 5 shows the distributions of the four dependent variables.
Case numbers identify the individual schools.

Figure 5. Boxplots showing dependent variables where case numbers identify the individual schools.

The boxplots show that the medians of percent passing rates in the variables HSPT-ALL, HSPT-R, HSPT-M, and HSPT-W are in ascending order. The medians of the variables HSPT-ALL, HSPT-R, HSPT-M, and HSPT-W are 78.6, 86.9, 90.2, and 93.6 respectively. Passing rates on the reading section of the HSPT are the lowest, and passing rates on the writing section are the highest, which is consistent with the previous analysis.

Boxplots are a visual representation of a distribution of the data. They are based on key statistical measures: median, the interquartile range, and minimum and maximum values.
of means in Figure 2. This result is also consistent with statewide testing results reported by the New Jersey Department of Education.\(^8\)

The boxplots also show that 50% of the schools in the data set are meeting the New Jersey Department of Education’s monitoring requirement for all high school districts by their achievement of passing rates of at least 85% in the reading, mathematics, and writing sections of the HSPT. The median of the HSPT-ALL variable (78.6) is the lowest of all dependent variables, indicating, once again, that it is more difficult for students to pass all three sections of the HSPT than it is for them to pass one or two of the three sections of the test.

The variable HSPT-W appears to have the least variability and the variable HSPT-ALL has the greatest variability. Writing passing rates are all fairly high and tightly packed around the median, whereas passing rates of the variable HSPT-ALL have larger variability, with the distribution negatively skewed. Although the distributions of the variables HSPT-R and HSPT-M are similar, it appears that reading passing rates are more negatively skewed. Furthermore, there is a total of twelve outliers in the data. Six schools reported scores that are significantly lower than the majority of all the other schools. All but one (school number 32) of the six schools are from the same county.

---
\(^8\) New Jersey statewide results for Grade 11 students who took the October 1998 HSPT indicate that statewide students had the highest scores in writing, followed by mathematics, reading, and all sections combined. Of the 65,646 Grade 11 students tested with the Reading section, 83.5% passed the Reading section. Of the 65,774 Grade 11 students tested with the Mathematics section, 87.0% passed the Mathematics section. Of the 65,549 Grade 11 students tested with Writing section, 91.4% passed the Writing section. Of the 65,560 Grade 11 students tested on all three sections, 77.0% passed all three sections combined (New Jersey Department of Education, 1999c, p.ii).
County X, indicating that schools in this county generally have passing rates significantly lower than all the other schools.

Figure 6 shows distributions of the independent variables that are based on school-level data: attendance rate, enrollment size, mobility rate, and free/reduced lunch eligibility. The variable attendance rate shows little variability and is tightly packed around the median. The three extreme instances (case numbers 19, 20, and 21) are all from the same county, County X. The variable enrollment size shows large variability and the distribution is positively skewed. The large variability in the distribution is most likely reflective of the alternate grade configurations of ten high schools. There is a moderate amount of variability in the mobility rate variable. Two out of the three extreme values (case numbers 20, 21) are from County X. The variable free/reduced lunch eligibility has a wide distribution that is positively skewed. This result indicates that there is a wide range of percentages of free/reduced lunch eligibility lying above the median.

---

9 County X is a large urban school district with a mix of students, a majority of which is low SES.
Figure 6. Boxplots showing distributions of independent variables.

Figure 7 shows the distribution of the transformational leadership variable. There is little variability in this distribution, and the data appear to be symmetrically distributed. According to Bass and Avolio (1997), self-ratings of transformational leadership are generally somewhat “inflated.” Therefore, I was not surprised by the result of this distribution because most principals most likely rated themselves in a similar and positive way. Principals’ self-reporting on the MLQ is a limitation of this study which I will
discuss, in detail, in Chapter 6.

Further, there are two very high scores (case numbers 1 and 6) in the data which, in this case, are not from County X.

Figure 7. Boxplot showing distribution of transformational leadership variable.
School-Type Level

A comparison of the means of the dependent variables between comprehensive (C) and vocational (V) high schools appears in Figure 8.

![Figure 8. Comparison of dependent variable means in comprehensive (C) and vocational (V) high schools](image)

For each dependent variable, the mean is substantially higher in comprehensive than in vocational high schools. The result indicates that students in comprehensive high schools are higher achievers in the reading, mathematics, and writing sections of the HSPT than vocational students are. This result is not surprising, as vocational schools generally attract students who are interested in entry-level occupational training and who are not college-bound. In many instances, guidance counselors advise students who have
been identified as “academically at risk” by their schools, to attend vocational schools because they would have a better chance of succeeding in a non-academic setting.

Figure 9 shows a comparison of means of the independent variables for comprehensive (C) and vocational (V) high schools. The means of the variables attendance rate and free/reduced lunch eligibility are both greater in vocational schools than in comprehensive schools. The fact that the mean of the variable free/reduced lunch eligibility is greater in vocational schools indicates that more students in vocational schools were of low socio-economic status compared to students in comprehensive high schools, a finding supported by the 1996 NCES study (National Center for Educational Statistics, 1996). The mean of the mobility rate variable is greater in comprehensive schools, meaning less stability and more movement in the student population in this type of school.
A major result in the school-type level analysis, however, is that the mean of the transformational leadership variable is substantially greater in vocational schools than in comprehensive schools, as shown in Figure 10. That is to say, more principals self-
reported to be transformational leaders in vocational high schools than in comprehensive high schools. The large disparity in the means of the transformational leadership variables in both school types suggests that transformational leadership is a necessary component of the specialized nature of vocational schools. I will discuss the implications of this finding, in detail, in Chapter 6.

Figure 10. Comparison of transformational leadership means in comprehensive (C) and vocational (V) high schools.

Figure 11 shows boxplots of the dependent variables with school type (comprehensive or vocational) identifying the individual schools. Of the twelve outliers, two are vocational schools and ten are comprehensive high schools. That is to say, two vocational and ten comprehensive schools had lower passing rates than the majority of the schools. This result is not surprising because, as shown in Figure 5, all ten
comprehensive schools that have extremely low passing rates are from County X, where passing rates on the HSPT are historically extremely low.

![Boxplots showing distributions of dependent variables where school type, comprehensive (C) or vocational (V), identifies the individual schools.](image)

**Figure 11.** Boxplots showing distributions of dependent variables where school type, comprehensive (C) or vocational (V), identifies the individual schools.

Boxplots in Figure 12 show the distributions of the dependent variables in comprehensive and vocational schools. Comprehensive schools have overall higher medians than vocational schools. However, the pattern of median passing rates of the dependent variables is the same for both school types. That is to say, the medians for
both comprehensive and vocational schools are in lowest to highest order as follows: all sections combined, reading, mathematics, and writing sections of the HSPT.

In addition, Figure 12 shows that all dependent variables in comprehensive schools have less variability (smaller distributions) than those dependent variables in vocational schools. The distributions show that the range of passing rates in the comprehensive schools is much smaller than the range of passing rates in the vocational schools. Moreover, the distributions indicate that comprehensive schools are more uniform in how students perform in the reading, mathematics, writing, and all sections combined on the HSPT. The results suggest that comprehensive schools have the same quality of students and the same instructional mode, whereas vocational schools have more of a disparity in the type of students they have and the instruction they offer.

For example, the boxplots in Figure 12 shows that writing passing rates are more widely distributed in vocational schools than in comprehensive schools. This means that there is a large range of writing passing rates for students in vocational schools in contrast to the writing passing rates in comprehensive schools, which are all very close in value. To illustrate further, the spread of the distribution for the variable HSPT-ALL is negatively skewed and much greater in vocational schools than in comprehensive schools. This results suggests that, compared to comprehensive high schools, vocational schools have a wider variety of students in terms of their ability to pass all sections combined of the HSPT.
Figure 12. Boxplots showing distributions of dependent variables in comprehensive (C) and vocational (V) high schools.

Figure 13 compares the distributions of the variables attendance rate, enrollment size, mobility rate, and free/reduced lunch eligibility in comprehensive schools to those in vocational schools. The distributions of both attendance rate variable distributions are about the same. Regarding the distributions of the enrollment size variable, the median enrollment size of vocational schools is smaller than that of the comprehensive schools and the spread of the vocational distribution is far less than that of the comprehensive distribution. This finding indicates that, compared to vocational schools, which show small enrollment sizes, comprehensive schools have larger enrollment sizes. Further,
comprehensive schools have much more of a variety in the enrollment sizes, particularly in the schools that have larger enrollments.

The medians of the mobility rate variable distributions in vocational and comprehensive schools are about the same. However, there is a wider spread in the vocational distribution for mobility rate. This result suggests that the mobility rates in vocational schools are more varied than the mobility rates in comprehensive schools. Last, the distribution of free/reduced lunch eligibility shows two things. First, the median of the vocational schools is higher than that of the comprehensive schools, which indicates that vocational schools have a higher percentage of students who are eligible for free/reduced lunch compared to comprehensive schools. Second, both school type distributions show large variability and are positively skewed. This second finding suggests that there is a wide range of values for percentage of free/reduced lunch eligibility lying above the median percentage for both school types.
Figure 13. Boxplots showing distributions of independent variables of comprehensive (C) and vocational (V) high schools.

Figure 14 shows the distributions of the transformational leadership variable in the vocational and comprehensive high schools. The distributions show that the medians are about the same. However, there is more variability in the transformational leadership
variable in the vocational schools than in the comprehensive high schools. Further, the vocational transformational leadership variable distribution is positively skewed. This result suggests that that there is more variety in the higher transformational leadership scores in vocational schools compared to comprehensive schools.

Figure 14. Boxplots showing distributions of transformational leadership variable in comprehensive (C) and vocational (V) high schools.

Summary

I conducted an exploratory data analysis to examine each of the dependent and independent variables, prior to using them in the regression modeling. For this analysis, I utilized descriptive statistics, Pearson correlation coefficients, and distributions of the data.
My analysis of the data reveals that schools have higher passing rates in the mathematics and writing sections of the HSPT than in the reading section. The lowest passing rates on the HSPT are for all sections combined. Passing rates on the writing section of the HSPT are high and show little variability, suggesting that schools are generally teaching writing to the effectiveness level. Comprehensive high schools have higher HSPT passing rates in the reading, writing, and mathematics sections, and all sections combined than vocational high schools. However, there is much more variability in the HSPT passing rates in vocational schools, particularly in the range of higher passing rates.

The variable enrollment size has the largest variability of the independent variables. Although I adjusted for enrollment size, the large variability may be a consequence of the fact that the data set includes enrollment data of several alternative (non 9-12) high school grade configurations. The variable attendance rate has the least variability of the independent variables. Although the variables mobility rate and free/reduced lunch eligibility have fairly symmetric distributions, their distributions show a moderate amount of variability as they were both positively skewed. My comparisons of comprehensive and vocational schools show attendance rate and free/reduced lunch eligibility to be higher in vocational schools. Enrollment sizes and mobility rates are higher in comprehensive high schools than in vocational schools. Transformational leadership scores are substantially higher in vocational schools than in comprehensive schools.
The dependent variables HSPT-R, HSPT-M, HSPT-W, and HSPT-ALL all highly correlate with each other. For example, high passing rates in any one section of the HSPT are strongly related to high passing rates on any other section, or all sections combined, of the test. The independent variables attendance rate, mobility rate, and free/reduced lunch eligibility all highly correlate with each other, as well. Attendance rate, mobility rate, and free/reduced lunch eligibility all significantly correlate with the variables HSPT-R, HSPT-M, HSPT-W, and HSPT-ALL. However, the variable enrollment size does not significantly correlate with any of the dependent or independent variables.

The correlation analysis supported my decision to operationalize (see Table 5 in Chapter 3) transformational leadership in the regression models as trcr_tra (the ratio of the average of responses to the MLQ transformational plus the MLQ contingent reward questions to the average of responses to the MLQ transactional questions). I found the strongest and most significant correlations when I defined the leadership variable in this way. Significant correlations between the variables HSPT-R, HSPT-W, HSPT-ALL, and the transformational leadership variable are all at the .05 significance level. In addition, the correlation between the variable HSPT-M and the transformational leadership variable is near significance at the .06 level. The transformational leadership variable is most significantly correlated with the variable HSPT-ALL.

The distribution analysis reveals that a majority of outliers in the data are from one particular county, County X. It appears that in County X, schools have extremely low passing rates in the reading, mathematics, and writing sections, and all sections combined of the HSPT.
In sum, the data analysis led to several important conclusions, which were important to my formulation of the regression models. First, there is a strong relationship between transformational leadership and passing rates in the reading, writing, and all sections combined of the HSPT; the strongest relationship is with HSPT passing rates in all sections combined. Second, passing rates on the mathematics section of the HSPT appear to be less related to transformational leadership than are the passing rates on the other sections of the HSPT. Third, transformational leadership is greater in vocational schools than in comprehensive high schools. Fourth, although I made an approximate adjustment to enrollment size data of schools with alternate grade configurations, I found no significant relationship between enrollment size and the dependent or independent variables. Fifth and finally, schools from one particular county, County X, have unusually low passing rates in all areas of the HSPT. In addition, the vast majority of the low achieving schools from County X are comprehensive, not vocational high schools.

Multiple Regression Analysis

Introduction

I performed multiple regression analyses to investigate the relationship between principal transformational leadership and HSPT passing rates in reading, mathematics, writing, and all sections combined of the HSPT. In the regression analyses I controlled for attendance rate, enrollment size, mobility rate, free/reduced lunch eligibility, and school-type factors (comprehensive or vocational) in vocational and comprehensive high schools. Researchers use multiple regression analysis, given a set of statistically
significant variables, to estimate the relative predictive power of the independent variables.

I developed four related regression models for two reasons. The first reason was to determine the differential importance of each independent variable. I wanted to determine the importance of transformational leadership, in particular, and the effect of this leadership in vocational high schools compared to comprehensive high schools. The second reason was to be able to predict HSPT passing rates in reading, mathematics, writing, and all sections combined of the HSPT, given the set of statistically significant variables.

Development of Regression Models

For each dependent variable, HSPT-R, HSPT-M, HSPT-W, and HSPT-ALL, I included the school report card and fall survey independent variables of attendance rate, enrollment size, mobility rate, and free/reduced lunch eligibility, in a regression model with the transformational leadership and leadership interaction variables.

I based my choice of the correct or "right" model for each variable on criteria that Gujarati (1992) contended are "attributes of a good model" (p. 380). They are as follows:

1. parsimony -- the model should be kept as simple as possible;
2. identifiability -- for a given set of data, the estimated parameters must have unique values. That is to say, there is only one estimate per parameter;
3. goodness of fit -- the adjusted $R^2$ is as high as possible$^{10}$;

4. theoretical consistency;

5. predictive power -- a test of a good model is the degree to which its theoretical predictions are proven to be true by actual experience.

Using the above criteria and guided by the results of the preliminary data analysis, I developed four related regression models, one for each dependent variable. In the following sections, I present the models and discuss each one in terms of significant findings in relation to the following six hypotheses:

$H_{A1}$: the transformational leadership style of the principal has a positive effect on scores such that a school that has a principal with a high transformational score achieves higher HSPT passing rates;

$$(\beta_{11} > 0)$$

$H_{A2}$: enrollment size has a negative effect on scores such that higher enrollment results in lower HSPT passing rates;

$$(\beta_{12} < 0)$$

---

$^{10}$ According to Moore and McCabe (1996), the adjusted $R^2$ statistic is the proportion of the variability in the response variable that is explained by the explanatory variables in a multiple linear regression, adjusting for the number of explanatory variables in the model.
$H_{A3}$: student attendance rate has a positive effect on scores such that higher attendance results in higher HSPT passing rates;

\[(\beta_3 > 0)\]

$H_{A4}$: student mobility rate has a negative effect on scores such that higher mobility results in lower HSPT passing rates;

\[(\beta_4 < 0)\]

$H_{A5}$: eligibility for free/reduced lunch has a negative effect on scores such that a higher percentage of eligibility results in lower HSPT passing rates;

\[(\beta_5 < 0)\]

$H_{A6}$: The transformational leadership style of principals has less of an effect on HSPT passing rates in vocational schools compared to comprehensive high schools.

\[(\beta_6 < 0)\]
Dependent Variable: HSPT-R

In order to achieve the best fit to explain passing rates in the reading section of the HSPT by the transformational leadership variable, I formulated several regression models. Table 10 shows the initial regression Model A, which includes all six independent variables.

Table 10

Model A: Multiple Regression Analysis for School Report Card, Fall Survey, and Transformational Leadership Variables for HSPT Reading

<table>
<thead>
<tr>
<th>Model Summary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
</tr>
<tr>
<td>-------</td>
</tr>
<tr>
<td>1</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), trcr_tr4, MOB, enro_adj, X_F_R_LUNC, trcr_tra, ATT

<table>
<thead>
<tr>
<th>ANOVAa</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
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</tr>
<tr>
<td>1</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), trcr_tr4, MOB, enro_adj, X_F_R_LUNC, trcr_tra, ATT
b. Dependent Variable: HSPT_R

<table>
<thead>
<tr>
<th>Coefficientsa</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
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<tr>
<td>ATT</td>
</tr>
<tr>
<td>enro_adj</td>
</tr>
<tr>
<td>MOB</td>
</tr>
<tr>
<td>X_F_R_LUNC</td>
</tr>
<tr>
<td>trcr_tra</td>
</tr>
<tr>
<td>trcr_tr4</td>
</tr>
</tbody>
</table>

c. Dependent Variable: HSPT_R
In this model, the regression equation is significant -- $F = 29.475$ (p < .001, df = 6, 50) and explained 78% of the variance in passing rates in the reading section of the HSPT. Four independent variables make significant contributions to the equation: attendance rate, free/reduced lunch eligibility, and transformational leadership, at the .001 level of significance; the leadership interaction variable at the .05 level of significance.

The enrollment size and mobility rate variables, however, are both insignificant with p values of .392 and .909 respectively. That is, statistically these two independent variables have no effect on passing rates in the reading section of the HSPT. Consequently, I removed these variables from the regression equation, and I modified Model A.

Table L1 in Appendix L presents a summary of several modified versions I developed of Model A. In these modified versions, I removed and added several independent variables. I did so in an attempt to develop the best model to explain HSPT passing rates in reading by transformational leadership.

First, in Models B through H, I removed the variables enrollment size and mobility rate because they were not significant predictors of the variable HSPT-R in Model A. Second, in Models B through E, I added a new independent dummy variable, voc_or_c. This new dummy variable, voc_or_c, is not in the original Model A. However, I tried the new variable in the modified versions of Model A in lieu of the original leadership interaction variable, trcr_tr4. I did so to see whether the new variable would make a difference in the significance of the transformational leadership variable. It did make a difference. However, because this new variable generally lessened the
significance of the transformational leadership variable, rather than increase it, I did not use it in the final regression model.

I also developed Models B through E to test alternate definitions of transformational leadership in the regression model for the variable HSPT-R. The correlation analysis (see Table 9) reveals the most significant correlation between the transformational leadership variable and the HSPT-R variable when I operationalize principal transformational leadership as trcr_tra (the ratio of the average of responses to MLQ transformational plus MLQ contingent reward questions to the average of responses to MLQ transactional questions) as shown in Table 5 in Chapter 3. This result is confirmed in regression Models B through E, as the p values of significance of the alternate leadership variables mtrls, trcr, tr_trans, and trcr_tra are .015, .037, .009, and .007, respectively. Thus, the regression equation in Model E ($F = 46.811$, $R^2 = .783$) where I use trcr_tra (the ratio of the average of responses to MLQ transformational plus MLQ contingent reward questions to the average of responses to MLQ transactional questions) as the transformational leadership variable, is the most highly significant of the four models B, C, D, and E.

I ran Model F using both the new dummy variable, voc_or_c, and the leadership interaction variable, trcr_tr4. I removed the transformational leadership variable, trcr_tra, from the model to see whether the leadership interaction variable alone would be a significant contributor to the model. In Model F, the leadership interaction variable is significant with a p value of .017. However, because Model F has less explanatory power ($R^2 = .776$) than Model E ($R^2 = .783$), I abandoned this model for reading.
I ran Model G with the transformational leadership variable, trcr_tra, the new dummy variable, voc_or_c, and the leadership interaction variable, trcr_tr4. Although the $R^2$ of this model is high at .783, I abandoned this reading model. I did so because the transformational leadership and the leadership interaction variables are both insignificant with $p$ values of .217 and .817, respectively.

Finally, I ran Model H with the transformational leadership variable, trcr_tra, the leadership interaction variable, trcr_tr4, but without the new dummy variable, voc_or_c. In this model ($F= 45.115$, $R^2 = .776$), the leadership variable and the leadership interaction variable are both highly significant with a $p$ values of .001 and .016, respectively. Further, the variables attendance rate and free/reduced lunch eligibility are both highly significant, each with a $p$ value of .000.

I chose Model H as the one with the best fit of all the modified versions of Model A, using Gujarati’s (1992) criteria for a good model. Essentially, Model H is a duplicate of Model A, but without the enrollment size and mobility rate variables, which I removed because these variables are insignificant predictors of the dependent variable HSPT-R. Table 11 presents a summary of Model H.
Table 11

Model H: Multiple Regression Analysis for School Report Card, Fall Survey, and Transformational Leadership Variables for HSPT Reading

<table>
<thead>
<tr>
<th>Model Summary</th>
</tr>
</thead>
<tbody>
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<td>Model</td>
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<tr>
<td>-------</td>
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<tr>
<td>1</td>
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</tbody>
</table>

* a. Predictors: (Constant), trcr_tr4, ATI, trcr_tra, X_F_R_LUNC

<table>
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<tr>
<th>ANOVA</th>
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<tbody>
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<td>Model</td>
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</tr>
<tr>
<td>Residual</td>
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<tr>
<td>Total</td>
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</table>

* a. Predictors: (Constant), trcr_tr4, ATI, trcr_tra, X_F_R_LUNC

<table>
<thead>
<tr>
<th>Coefficients</th>
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<tbody>
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<td>Model</td>
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</tbody>
</table>

* a. Dependent Variable: HSPT_R

In this model, the regression equation is significant -- $F = 45.115$ ($p < .001$, $df=4, 52$) and explained 77.6% of the variance in passing rates in the reading section of the HSPT. Four independent variables make significant contributions to the equations:
attendance rate, free/reduced lunch eligibility, and transformational leadership, at the .001 level of significance; the leadership interaction variable at the .05 level of significance.

To determine whether the regression model is appropriate for the data, I plotted the residuals\(^{11}\), which show no clear pattern. This finding indicates that the data do not deviate from the model in any systematic way, thus verifying that the data met the model's assumptions. Figure 15 shows the standardized residuals, which I plotted against the standardized predicted values.

![Scatterplot](image)

**Figure 15.** Standardized residuals plotted against the standardized predicted values for HSPT Reading.

\(^{11}\) According to Moore and McCabe (1996), a residual is the difference between an observed value of the response variable and the value predicted by the model. That is, residual = observed \(y\) – predicted \(y\).
The regression results are a test for the six hypotheses as follows:

Hypothesis 1: The transformational leadership style of the principal has a positive effect on scores such that a school that has a principal with a high transformational score achieves a higher passing rate in the reading section of the HSPT.

The coefficient for the transformational leadership variable is 7.749 ($\beta_{11} > 0$). The variable makes a significant contribution to the regression equation with a $p$ value of .001; therefore, the regression results support the first hypothesis.

Hypothesis 2. Enrollment size has a negative effect on scores such that higher enrollment size results in lower passing rates in the reading section of the HSPT.

The coefficient for the enrollment size variable in Model A is $-2.1E-03$ ($\beta_{12} < 0$). The variable does not make a significant contribution to the regression equation as the $p$ value of .392 is well beyond the acceptable significance level of .05; therefore, the regression results do not support the second hypothesis.

Hypothesis 3: Student attendance rate has a positive effect on scores such that a higher attendance rate results in higher passing rates in the reading section of the HSPT.

The coefficient for the attendance rate variable is 3.344 ($\beta_{13} > 0$). This variable makes a significant contribution to the regression equation with a $p$ value of .000; the regression results support the third hypothesis.

Hypothesis 4: Student mobility rate has a negative effect on scores such that a higher mobility rate results in lower passing rates in the reading section of the HSPT.
The coefficient for the mobility rate variable in Model A is \(-1.67E-02 (\beta_{4} < 0)\). This variable does not make a significant contribution to the regression equation as the p value of \(0.909\) is well beyond the acceptance significance level of \(0.05\); therefore, the regression results do not support the fourth hypothesis.

Hypothesis 5: Eligibility for free/reduced lunch has a negative effect on scores such that a higher percentage of eligibility results in lower passing rates in the reading section of the HSPT.

The coefficient for the free/reduced lunch eligibility variable is \(-26.025 (\beta_{5} < 0)\). This variable makes a significant contribution to the regression equation with a p value of \(0.000\); therefore, the regression results support the fifth hypothesis.

Hypothesis 6: The transformational leadership style of principals has less of an effect on HSPT passing rates in the reading section of the HSPT in vocational schools compared to comprehensive high schools.

The coefficient for the leadership interaction variable is \(-3.726 (\beta_{6} < 0)\). This variable makes a significant contribution to the regression equation with a p value of \(0.016\); therefore, the regression results support the sixth hypothesis.

**Model Summary and Discussion**

The equation for the regression Model H, where HSPT-R is the dependent variable, is as follows (see Table 11 for coefficients of each variable):

\[
\text{HSPT}_r = -233.552 + 7.749\text{TrLS} + 3.344\text{ATT} - 26.025\text{FRL} - 3.726(\text{TrLS})V
\]
This model is significant and explained 77.6% of the variance in HSPT passing rates in the reading section of the HSPT. Results of the multiple regression analysis show that, controlling for the statistically significant variables attendance rate, free/reduced lunch eligibility, and the leadership interaction variable, transformational leadership is a significant explanatory variable in predicting passing rates on the reading section of the HSPT. The results also reveal that student attendance rate has a significantly positive effect on passing rates in the reading section of the test. Further, percentage of eligibility for free/reduced lunch has a significant negative effect on passing rates in the reading section.

Both variables enrollment size and mobility rate have no significant effect on passing rates in the reading section of the HSPT, and I subsequently excluded these variables from the regression equation. I expected this result for the enrollment variable since this variable does not significantly correlate with the variable HSPT-R in the correlation analysis. The mobility rate variable significantly correlates with the variable HSPT-R at - .593 (p < .01). Therefore, the fact that the mobility rate variable is not a significant predictor in the regression model was surprising to me. I will discuss the implications of this inconsistency, in detail, in Chapter 6.

The leadership interaction variable significantly contributes to this regression model with a p value of .016. The negative coefficient of -3.726 reveals that transformational leadership has a mitigating effect on vocational school passing rates in the reading section of the HSPT as compared to those in comprehensive high schools. By mitigating effect, I mean that the same transformational leadership score predicts lower
passing rates in the HSPT reading section in vocational schools than in comprehensive high schools. Stated yet another way, principals need stronger transformational leadership in vocational schools compared to comprehensive high schools to achieve the same passing rates in the reading section of the HSPT.

Figure 16 illustrates the mitigating effect of the leadership interaction variable. This example (which will also serve as a detailed explanation for the HSPT-M, HSPT-W, and HSPT-ALL variables) shows that vocational school principals need higher transformational leadership scores than comprehensive school principals to achieve the same 85% passing rate on the reading section of the HSPT.
In sum, the regression model with dependent variable HSPT-R shows that the variables attendance rate and free/reduced lunch eligibility are predictors of passing rates in the reading section of the HSPT. Most importantly, transformational leadership is a significant predictor of passing rates in the reading section. Further, the effect of transformational leadership on passing rates in the reading section is less in vocational high schools than in comprehensive high schools.

---

12 Line AC represents the relationship between transformational leadership and passing rates in the reading section on the HSPT in comprehensive schools. Line AV represents the relationship between transformational leadership and passing rates in the reading section on the HSPT in vocational schools. There is a reduction in the slope of line AC when the analysis shifts from the comprehensive schools (represented by line AC, dummy variable = 0) to the vocational schools (represented by line AV, dummy variable = 1). (See Appendix M for a detailed explanation of the process of the reduction in slope).
Dependent Variable: HSPT-M

In order to achieve the best fit to explain passing rates in the mathematics section of the HSPT by the transformational leadership variable, I formulated several regression models. Table 12 shows the initial regression Model A, which includes all six independent variables.

Table 12

Model A: Multiple Regression Analysis for School Report Card, Fall Survey, and Transformational Leadership Variables for HSPT Mathematics

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.866a</td>
<td>.751</td>
<td>.721</td>
<td>8.529</td>
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</tbody>
</table>

a. Predictors: (Constant), trcr_tr4, MOB, enro_adj, X_F_R_LUNC, trcr_tr4, ATT
b. Dependent Variable: HSPT_M

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>10948.722</td>
<td>6</td>
<td>1824.787</td>
<td>25.086</td>
<td>.000a</td>
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<tr>
<td>Residual</td>
<td>3637.028</td>
<td>50</td>
<td>72.741</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>14585.750</td>
<td>56</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), trcr_tr4, MOB, enro_adj, X_F_R_LUNC, trcr_tr4, ATT
b. Dependent Variable: HSPT_M

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>(Constant)</td>
<td>-279.481</td>
<td>54.777</td>
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</tr>
<tr>
<td></td>
<td>ATT</td>
<td>3.891</td>
<td>.572</td>
<td>6.800</td>
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<tr>
<td></td>
<td>enro_adj</td>
<td>-1.52E-03</td>
<td>.002</td>
<td>- .651</td>
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<td></td>
<td>MOB</td>
<td>.126</td>
<td>.140</td>
<td>.894</td>
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<tr>
<td></td>
<td>X_F_R_LUNC</td>
<td>-16.972</td>
<td>6.700</td>
<td>-2.533</td>
</tr>
<tr>
<td></td>
<td>trcr_tr4</td>
<td>5.676</td>
<td>2.439</td>
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<td></td>
<td>trcr_tr4</td>
<td>-3.655</td>
<td>1.592</td>
<td>-2.296</td>
</tr>
</tbody>
</table>

a. Dependent Variable: HSPT_M
In this model, the regression equation is significant -- $F = 25.086 (p< .001, \text{df} = 6, 50)$ and explained 75.1 % of the variance in passing rates in the mathematics section of the HSPT. Four independent variables make significant contributions to the equation: attendance rate, free/reduced lunch eligibility, transformational leadership, at the .001 level of significance; the interaction variable at the .05 level of significance.

In contrast, the enrollment and mobility independent variables are both insignificant with $p$ values of .518 and .376 respectively. That is, statistically the two independent variables have no effect on passing rates in the mathematics section of the HSPT. Consequently, I removed these variables from the regression equation, and I modified Model A.

Table L2 in Appendix L presents a summary of several modified versions I developed of Model A. In these modified versions, I removed and added several independent variables. I did so in an attempt to develop the best model to explain HSPT passing rates in mathematics by transformational leadership.

First, in models B through H, I removed enrollment size and mobility rate as variables because they were not significant predictors of the variable HSPT-M in Model A. Second, in Models B through E, I added a new independent dummy variable, voc_or_c. This new dummy variable, voc_or_c, is not in the original Model A. However, I tried the new variable in the modified versions of Model A in lieu of the original leadership interaction variable, trcr_tr4. I did so to see whether this new variable would make a difference in the significance of the transformational leadership variable. It did make a difference. However, because this new variable generally lessened the
significance of the transformational leadership variable, rather than increase it, I did not use it in the final regression model.

As in the HSPT reading models, I also developed Models B through E to test alternative definitions of transformational leadership in the regression model for the variable HSPT-M. Unlike in the alternative HSPT-R models, however, Models B through E for the variable HSPT-M show the transformational leadership variable, trcr_tr4, to be insignificant, although nearing significance, as a predictor of HSPT passing rates in mathematics. The p values of the alternate leadership variables mtrls, trcr, tr_trans, and trcr_tr4 are .274, .353, .234, and .216, respectively. Thus, the regression equation in Model E (F = 38.684, R^2 = .748) where I use trcr_tr4 (the ratio of the average of responses to MLQ transformational plus MLQ contingent reward questions to the average of responses to MLQ transactional questions) as the leadership variable, is the most significant of the four models B, C, D, and E.

I ran Model F using both the new dummy variable, voc_or_c, and the leadership interaction variable, trcr_tr4. I removed the transformational leadership variable, trcr_tr4, from the model to see whether the leadership interaction variable alone would be a significant contributor to the model. The results show that when I removed the transformational leadership variable, the leadership interaction variable became insignificant, with a p value of .277. Although the R^2 of Model F is high at .747, I abandoned this model for mathematics. I did so because the leadership interaction variable is not a significant contributor to the regression equation.
I ran Model G with the transformational leadership variable, trcr_tra, the new dummy variable, voc_or_c, and the leadership interaction variable, trcr_tr4. As in the alternate reading models, I abandoned this mathematics model. I did so because, although $R^2$ is high at .748, the transformational leadership and the leadership interaction variables are insignificant with $p$ values of .558 and .946, respectively.

Finally, I ran Model H using the transformational leadership variable, trcr_tra, the leadership interaction variable, trcr_tr4, but without the new dummy variable, voc_or_c. In this model ($F = 37.768, R^2 = .744$), the transformational leadership variable and the leadership interaction variable are both highly significant, although not as significant as in the reading models, with $p$ values of .036 and .029, respectively. Further, the variables attendance rate and free/reduced lunch eligibility have high significance levels, with $p$ values of .000 and .020, respectively.

As with the HSPT reading models, I chose Model H as the one with the best fit, using Gujarati’s (1992) criteria for a good model. Essentially, Model H is a duplicate of Model A but without the enrollment size and mobility rate variables, which I removed because these variables are insignificant predictors of the dependent variable HSPT-M. Table 13 presents a summary of Model H.
Table 13

Model H: Multiple Regression Analysis for School Report Card, Fall Survey, and Transformational Leadership Variables for HSPT Mathematics

**Model Summary**

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.863</td>
<td>.744</td>
<td>.724</td>
<td>8.475</td>
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a. Predictors: (Constant), trcr_tr4, ATT, trcr_tra, X_F_R_LUNC
b. Dependent Variable: HSPT_M

**ANOVA**

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>10850.809</td>
<td>4</td>
<td>2712.702</td>
<td>37.768</td>
<td>.000</td>
</tr>
<tr>
<td>Residual</td>
<td>3734.941</td>
<td>52</td>
<td>71.826</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>14585.750</td>
<td>56</td>
<td>261.2702</td>
<td></td>
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</tbody>
</table>

a. Predictors: (Constant), trcr_tr4, ATT, trcr_tra, X_F_R_LUNC
b. Dependent Variable: HSPT_M

**Coefficients**

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>(Constant)</td>
<td>-260.775</td>
<td>47.015</td>
<td>-.547</td>
<td>.000</td>
</tr>
<tr>
<td>ATT</td>
<td>3.708</td>
<td>500</td>
<td>.685</td>
<td>.000</td>
</tr>
<tr>
<td>X_F_R_LUNC</td>
<td>-15.450</td>
<td>6.461</td>
<td>-.225</td>
<td>.020</td>
</tr>
<tr>
<td>trcr_tra</td>
<td>4.603</td>
<td>2.140</td>
<td>.188</td>
<td>.038</td>
</tr>
<tr>
<td>trcr_tr4</td>
<td>-3.280</td>
<td>1.460</td>
<td>-.217</td>
<td>.228</td>
</tr>
</tbody>
</table>

a. Dependent Variable: HSPT_M

In this model, the regression equation is significant -- \( F = 37.768 \) (\( p < .001 \), df = 4, 52) and explained 74.4% of the variance in passing rates in HSPT mathematics. Four independent variables make significant contributions to the equation: attendance rate at
the .001 level of significance; free/reduced lunch eligibility, transformational leadership, and the leadership interaction variable at the .05 level of significance.

To determine whether the regression model is appropriate for the data, I plotted the residuals, which show no clear pattern. The finding indicates that the data do not deviate from the model in any systematic way, thus verifying that the data met the model's assumptions. Figure 17 shows the standardized residuals, which I plotted against the standardized predicted values.

---

**Figure 17.** Standardized residuals plotted against the standardized predicted values for HSPT Mathematics.

---

The regression results were a test for the six hypotheses as follows:
Hypothesis 1: The transformational leadership style of the principal has a positive effect on scores such that a school that has a principal with a high transformational score achieves a higher passing rate in the mathematics section of the HSPT.

The coefficient for the transformational leadership variable is 4.603 ($\beta_{m1} > 0$). The variable makes a significant contribution to the regression equation with a $p$ value of .036; therefore, the regression results support the first hypothesis.

Hypothesis 2: Enrollment size has a negative effect on scores such that higher enrollment size results in lower passing rates in the mathematics section of the HSPT.

The coefficient for the enrollment size variable in Model A is $-1.5E-03$ ($\beta_{m2} < 0$). The variable does not make a significant contribution to the regression equation as the $p$ value of .518 is well beyond the acceptable significance level of .05; therefore, the regression results do not support the second hypothesis.

Hypothesis 3: Student attendance rate has a positive effect on scores such that a higher attendance rate results in higher passing rates in the mathematics section of the HSPT.

The coefficient for the attendance rate variable is 3.708 ($\beta_{m3} > 0$). This variable makes a significant contribution to the regression equation with a $p$ value of .000; therefore, the regression results support the third hypothesis.

Hypothesis 4: Student mobility rate has a negative effect on scores such that a higher mobility rate results in lower passing rates in the mathematics section of the HSPT.

The coefficient for the mobility rate variable in model A is .126 ($\beta_{m4} > 0$). This variable does not make a significant contribution to the regression equation, as the $p$
value of .376 is well beyond the acceptance significance level of .05; therefore, the regression results do not support the fourth hypothesis.

Hypothesis 5: Eligibility for free/reduced lunch eligibility has a negative effect on scores such that a higher percentage of eligibility results in lower passing rates in the mathematics section of the HSPT.

The coefficient for the free/reduced lunch eligibility variable is \(-15.540 (\beta_{m3} < 0)\). This variable makes a significant contribution to the regression equation with a p value of .020; therefore, the regression results support the fifth hypothesis.

Hypothesis 6: The transformational leadership style of principals has less of an effect on passing rates on the mathematics section of the HSPT in vocational schools compared to comprehensive high schools.

The coefficient for the leadership interaction variable is \(-3.28 (\beta_{m6} < 0)\). This variable makes a significant contribution to the regression equation with a p value of .029; therefore, the regression results support the sixth hypothesis.

**Model Summary and Discussion**

The equation for the regression Model H, where HSPT-M is the dependent variable, is as follows (see Table 13 for coefficients of each variable):

\[
HSPT_m = -260.775 + 4.603\text{TrLS} + 3.708\text{ATT} - 15.540\text{FRL} - 3.28(\text{TrLS})V
\]

The regression model is significant and explained 74.4% of the variance in passing rates in the mathematics section of the HSPT. Results of the multiple regression analysis show that transformational leadership is a significant explanatory variable in
predicting passing rates in the mathematics section of the test. The predictive significance, however, is less in the mathematics section than it is in the reading section, as \( p \) values for transformational leadership in the reading section and mathematics section are .001 and .036, respectively.

The results also reveal that student attendance rate has a significant positive effect on passing rates in the mathematics section of the HSPT. Further, percentage of eligibility for free/reduced lunch has a significant negative effect on passing rates in the mathematics section.

Both the enrollment size and mobility rate variables have no significant effect on passing rates in the mathematics section of the HSPT, and I subsequently excluded these variables from the regression equation. I expected this result for the enrollment size variable since this variable does not significantly correlate with the variable HSPT-M in the correlation analysis. Because this variable significantly correlates with the variable HSPT-M at \(-.532 (p<.01)\), it was surprising that the variable mobility rate was not a significant predictor in the regression model. I will discuss the implications of this inconsistency, in detail, in Chapter 6.

The leadership interaction variable significantly contributes to this regression model with a \( p \) value of .029. The negative coefficient of \(-3.28\) reveals that transformational leadership has a mitigating effect on vocational school passing rates in the mathematics section of the HSPT, as compared to those in comprehensive high schools. By mitigating effect, I mean that the same transformational leadership score predicts lower passing rates in the HSPT mathematics section in vocational schools than
in comprehensive high schools. Stated yet another way, principals need stronger transformational leadership in vocational schools compared to comprehensive high schools to achieve the same passing rates in the mathematics section of the HSPT.

Figure 18 illustrates the mitigating effect of the leadership interaction variable (see Figure 16, earlier in this chapter, for a detailed explanation of the mitigating effect).
Figure 18. The effect of the negative interaction term of the regression model with dependent variable HSPT-M.\(^{13}\)

In sum, the regression model with dependent variable HSPT-M shows that the variables attendance rate and free/reduced lunch eligibility are predictors of passing rates in the mathematics section of the HSPT. Most importantly, however, transformational leadership is a significant predictor of passing rates in the mathematics section of the test, although not as significantly as in the reading section of the test. Further, the effect of transformational leadership on passing rates in the mathematics section is less in

\(^{13}\) Line AC represents the relationship between transformational leadership and passing rates in the mathematics section of the HSPT in comprehensive schools. Line AV represents the relationship between transformational leadership and passing rates in the mathematics section of the HSPT in vocational schools. There is a reduction in the slope of line AC when the analysis shifts from the comprehensive schools (represented by line AC, dummy variable = 0) to the vocational schools (represented by line AV, dummy variable = 1). (See Appendix M for a detailed explanation of the process of the reduction in slope).
vocational high schools than in comprehensive high schools. This effect is similar to the
effect of transformational leadership on the passing rates in the reading section of the
HSPT.
Dependent Variable: HSPT-W

In order to achieve the best fit to explain passing rates in the writing section of the HSPT by the transformational leadership variable, I formulated several regression models. Table 14 shows the initial regression Model A, which includes all six independent variables.

Table 14

Model A: Multiple Regression Analysis for School Report Card, Fall Survey, and Transformational Leadership Variables for HSPT Writing

<table>
<thead>
<tr>
<th>Model Summary²</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
<td>R</td>
</tr>
<tr>
<td>1</td>
<td>.87³</td>
</tr>
<tr>
<td>a. Predictors: (Constant), trcr_tr4, MOB, enro_adj, X_F_R_LUNC, trcr_tra, ATT</td>
<td></td>
</tr>
<tr>
<td>b. Dependent Variable: HSPT_W</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ANOVA²</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
<td>Sum of Squares</td>
</tr>
<tr>
<td>1 Regression</td>
<td>7384.519</td>
</tr>
<tr>
<td>Residual</td>
<td>2315.810</td>
</tr>
<tr>
<td>Total</td>
<td>9700.329</td>
</tr>
<tr>
<td>a. Predictors: (Constant), trcr_tr4, MOB, enro_adj, X_F_R_LUNC, trcr_tra, ATT</td>
<td></td>
</tr>
<tr>
<td>b. Dependent Variable: HSPT_W</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Coefficients³</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
<td>Unstandardized Coefficients</td>
</tr>
<tr>
<td></td>
<td>B</td>
</tr>
<tr>
<td>1 (Constant)</td>
<td>-153.927</td>
</tr>
<tr>
<td>ATT</td>
<td>2.619</td>
</tr>
<tr>
<td>enro_adj</td>
<td>-1.51E-03</td>
</tr>
<tr>
<td>MOB</td>
<td>-1.165</td>
</tr>
<tr>
<td>X_F_R_LUNC</td>
<td>-10.527</td>
</tr>
<tr>
<td>trcr_tra</td>
<td>5.130</td>
</tr>
<tr>
<td>trcr_tr4</td>
<td>-3.480</td>
</tr>
<tr>
<td>a. Dependent Variable: HSPT_W</td>
<td></td>
</tr>
</tbody>
</table>
In this model, the regression equation is significant -- $\hat{E} = 26.573 \ (p<.001, \ df=6, 50)$ and explained 76.1% of the variance in passing rates in the writing section of the HSPT. Four independent variables make significant contributions to the equation: attendance rate, at the .001 level of significance; free/reduced lunch eligibility (marginally), transformational leadership, and the interaction variable at the .05 level of significance.

The enrollment size and mobility rate variables, however, are both insignificant with $p$ values of .420 and .146, respectively. That is, statistically these two independent variables have no effect on passing rates in the writing section of the HSPT. Consequently, I removed these variables from the regression equation and I modified Model A.

Table L3 in Appendix L presents a summary of several modified versions I developed of Model A. In these modified versions, I removed and added several independent variables. I did so in an attempt to develop the best model to explain passing rates in the writing section of the HSPT by transformational leadership.

First, in Models B through H, I removed the variables enrollment size and mobility rate because they are not significant predictors of the variable HSPT-W in Model A. Second, in Models B through E, I added a new independent dummy variable, voc_or_c. This new dummy variable, voc_or_c, is not in the original Model A. However, I tried the new variable in the modified versions of Model A in lieu of the leadership interaction variable, trcr_tr4. I did so to see whether it would make a difference in the significance of the transformational leadership variable. It did make a difference.
However, because this new variable generally lessened the significance of the transformational leadership variable, rather than increase it, I did not use it in the final regression model.

As in the HSPT reading and mathematics models, I also developed Models B through E to test alternative definitions of transformational leadership in the regression model for the variable HSPT-W. The regression models for the variable HSPT-W show the transformational leadership variable, trcr_tra, to be the most significant predictor of passing rates in the writing section of the HSPT. The p values of the leadership variables mtrls, trcr, tr_trans, and trcr_tra are .07, .147, .07, and .067, respectively. Thus, the regression equation in Model E ($F= 40.707$, $R^2 = .758$) where I use trcr_tra (the ratio of the average of responses to MLQ transformational plus MLQ contingent reward questions to the average of responses to MLQ transactional questions) as the transformational leadership variable, is the most highly significant of the four models B, C, D, and E.

I ran Model F using both the new dummy variable, voc_or_c, and the leadership interaction variable, trcr_tr4. The results show that, as with the modified reading and mathematics models, when I removed the leadership variable, trcr_tra, from the model, the leadership interaction variable became insignificant with a p value of .079. Thus, although the $R^2$ of Model F is high at .757, I discarded this writing model. I did so because the leadership interaction variable is not a significant contributor to the regression equation.

I ran Model G with the transformational leadership variable, trcr_tra, the new dummy variable, voc_or_c, and the leadership interaction variable, trcr_tr4. As with the
modified reading and mathematics models, I abandoned this writing model. I did so because although R² was high at .759, the transformational leadership and the leadership interaction variables are both insignificant with p values of .524 and .702, respectively.

Finally, I ran Model H using the transformational leadership variable, trcr_tra, the leadership interaction variable, trcr_tr4, but without the new dummy variable, voc_or_c. In this model ($F=38.730, R^2 = .749$), the transformational leadership variable and the leadership interaction variable are both highly significant, with p values of .007 and .012, respectively. Further, the variables attendance rate and free/reduced lunch eligibility have high significance levels, with p values of .000 and .022 respectively.

As with the reading and mathematics models, I chose Model H as the one with the best fit, using Gujarati’s (1992) criteria for a good model. Essentially, Model H is a duplicate of Model A, but without the enrollment size and mobility rate variables because these variables are insignificant predictors of the dependent variable HSPT-W. Table 15 presents a summary of Model H.
Table 15

Model H: Multiple Regression Analysis for School Report Card, Fall Survey, and Transformational Leadership Variables for HSPT Writing

Model Summary

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
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<td>1</td>
<td>.865*</td>
<td>.749</td>
<td>.729</td>
<td>6.847</td>
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* Predictors: (Constant), trcr_tr4, ATT, trcr_tra, X_F_R_LUNC

ANOVA

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Regression</td>
<td>7262.589</td>
<td>4</td>
<td>1815.647</td>
<td>38.730</td>
</tr>
<tr>
<td></td>
<td>Residual</td>
<td>2437.739</td>
<td>52</td>
<td>46.880</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>9700.329</td>
<td>56</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Predictors: (Constant), trcr_tr4, ATT, trcr_tra, X_F_R_LUNC

Coefficients

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
</tr>
<tr>
<td>1</td>
<td>(Constant)</td>
<td>-189.130</td>
</tr>
<tr>
<td></td>
<td>ATT</td>
<td>2.968</td>
</tr>
<tr>
<td></td>
<td>X_F_R_LUNC</td>
<td>-12.369</td>
</tr>
<tr>
<td></td>
<td>trcr_tra</td>
<td>4.864</td>
</tr>
<tr>
<td></td>
<td>trcr_tr4</td>
<td>-3.056</td>
</tr>
</tbody>
</table>

* Dependent Variable: HSPT_W

In this model, the regression equation is significant -- F = 38.730 (p < .001, df = 4, 52) and explained 74.9% of the variance in passing rates in the writing section of the HSPT. Four independent variables make significant contributions to the equations: attendance rate at the .001 level of significance; free/reduced lunch eligibility, transformational leadership, and the interaction variable at the .05 level of significance.
To determine whether the regression model is appropriate for the data, I plotted the residuals, which show no clear pattern. The finding indicates that the data do not deviate from the model in any systematic way, thus verifying that the data met the model's assumptions. Figure 19 shows the standardized residuals, which I plotted against the standardized predicted values.

Figure 19. Standardized residuals plotted against the standardized predicted values for HSPT Writing.

The regression results were a test for the six hypotheses as follows:
Hypothesis 1: The transformational leadership style of the principal has a positive effect on scores such that a school that has a principal with a high transformational score achieves a higher passing rate in the writing section of the HSPT.

The coefficient for the transformational leadership variable is $4.864 (>0)$. The variable makes a significant contribution to the regression equation with a $p$ value of .007; therefore, the regression results supports the first hypothesis.

Hypothesis 2. Enrollment size has a negative effect on scores such that higher enrollment results in lower passing rates on the writing section of the HSPT.

The coefficient for the enrollment size variable in Model A is $-1.5E-03 (<0)$. The variable does not make a significant contribution to the regression equation as the $p$ value of .420 is well beyond the acceptable significance level of .05; therefore, the regression results do not support the second hypothesis.

Hypothesis 3: Student attendance rate has a positive effect on scores such that a higher attendance rate results in higher passing rates on the writing section of the HSPT.

The coefficient for the attendance rate variable is $2.968 (>0)$. This variable makes a significant contribution to the regression equation with a $p$ value of .000; therefore, the regression results support the third hypothesis.

Hypothesis 4: Student mobility rate has a negative effect on scores such that a higher mobility rate results in lower passing rates on the writing section of the HSPT.

The coefficient for the mobility rate variable in Model A is $-.165 (<0)$. This variable does not make a significant contribution to the regression equation, as the $p$
value of .146 is well beyond the acceptance significance level of .05; therefore, the regression results do not support the fourth hypothesis.

Hypothesis 5: Eligibility for free/reduced lunch eligibility has a negative effect on scores such that a higher percentage of eligibility results in lower passing rates on the writing section of the HSPT.

The coefficient for the free/reduced lunch eligibility variable is \(-12.369(\beta_{w5} < 0)\). This variable makes a significant contribution to the regression equation with a p value of .022; therefore, the regression results support the fifth hypothesis.

Hypothesis 6: The transformational leadership style of principals has less of an effect on passing rates on the writing section of the HSPT in vocational schools compared to comprehensive high schools.

The coefficient for the interaction variable is \(-3.056(\beta_{w6} < 0)\). This variable makes a significant contribution to the regression equation with a p value of .012; therefore, the regression results support the sixth hypothesis.

Model Summary and Discussion

The equation for the regression Model H, where HSPT-W is the dependent variable, is as follows (see Table 15 for coefficients for each variable):

\[
\text{HSPT}_w = -189.130 + 4.864\text{TrLS} + 2.968\text{ATT} -12.369\text{FRL} -3.056(\text{TrLS})V
\]

The regression model is significant and explained 74.9% of the variance in passing rates in the writing section of the HSPT. Results of the multiple regression
analysis show that transformational leadership is a significant explanatory variable in predicting passing rates in the writing section of the HSPT. The predictive significance, although less than for the reading section, is greater than for the mathematics section. The p values for the transformational leadership variable in the reading, mathematics, and writing sections of the HSPT are .001 and .036, and .007, respectively.

The results also reveal that attendance rate has a significantly positive effect on passing rates in the writing section of the HSPT. Further, percentage of free/reduced lunch eligibility has a significant negative effect on passing rates in the writing section. Both the enrollment size and mobility rate variables have no significant effect on passing rates in the writing section of the HSPT, and I subsequently excluded them from the regression equation. I expected this result for the enrollment variable since it does not significantly correlate with the HSPT-W variable in the correlation analysis. The mobility rate variable significantly correlates with the variable HSPT-W at -.652 (p < .01). Therefore, the fact that it is not a significant predictor in the regression model was surprising to me. I will discuss the implications of this inconsistency, in detail, in Chapter 6.

The leadership interaction variable significantly contributes to this regression model with a p value of .012. The negative coefficient of -3.056 reveals that transformational leadership has a mitigating effect on vocational school in passing rates in the writing section of the HSPT as compared to those in comprehensive high schools. By mitigating effect, I mean that the same transformational leadership score predicts lower passing rates in the HSPT writing section in vocational schools than in
comprehensive high schools. Stated yet another way, stronger transformational leadership is needed in vocational schools compared to comprehensive high schools to achieve the same passing rates in the writing section of the HSPT.

Figure 20 illustrates the mitigating effect of the leadership interaction variable (see Figure 16, earlier in this chapter, for a detailed explanation of the mitigating effect).
In sum, the regression model where HSPT-W is the dependent variable shows that the variables attendance rate and free/reduced lunch eligibility are predictors of passing rates in the writing section of the HSPT. Most importantly, transformational leadership is a significant predictor of passing rates in the writing section, although not as significantly as for the reading section. Further, the effect of transformational leadership on passing rates in the writing section is less in vocational high schools as compared to

---

14 Line AC represents the relationship between transformational leadership and passing rates in the writing section on the HSPT in comprehensive schools. Line AV represents the relationship between transformational leadership and passing rates in the writing section on the HSPT in vocational schools. There is a reduction in the slope of the line AC when the analysis shifts from the comprehensive schools (represented by line AC, dummy variable = 0) to the vocational schools (represented by line A, dummy variable = 1). (See Appendix M for a detailed explanation of the process of the reduction in slope).
comprehensive high schools. This effect is similar to the effect of transformational leadership on the passing rates in the reading and mathematics sections of the HSPT.
Dependent Variable: HSPT-ALL

In order to achieve the best fit to explain HSPT passing rates in all sections combined of the HSPT by the transformational leadership variable, I formulated several regression models. Table 16 shows the initial regression Model A, which includes all independent variables.

Table 16

Model A: Multiple Regression Analysis for School Report Card, Fall Survey, and Transformational Leadership Variables for HSPT All Sections Combined

<table>
<thead>
<tr>
<th>Model Summary</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
<td>R</td>
</tr>
<tr>
<td>1</td>
<td>.889</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), trcr_tr4, MOB, enro_adj, X_F_R_LUNC, trcr_tra, ATT
b. Dependent Variable: HSPT_ALL

<table>
<thead>
<tr>
<th>ANOVA</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
<td>Sum of Squares</td>
</tr>
<tr>
<td>1</td>
<td>Regression</td>
</tr>
<tr>
<td></td>
<td>Residual</td>
</tr>
<tr>
<td></td>
<td>Total</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), trcr_tr4, MOB, enro_adj, X_F_R_LUNC, trcr_tra, ATT
b. Dependent Variable: HSPT_ALL

c. Coefficients |  |
<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>(Constant)</td>
<td>-282.042</td>
<td>68.227</td>
<td>-4.134</td>
</tr>
<tr>
<td></td>
<td>ATT</td>
<td>3.774</td>
<td>.713</td>
<td>.512</td>
</tr>
<tr>
<td></td>
<td>enro_adj</td>
<td>-3.29E-03</td>
<td>.003</td>
<td>-0.085</td>
</tr>
<tr>
<td></td>
<td>MOB</td>
<td>-8.42E-02</td>
<td>.175</td>
<td>-0.044</td>
</tr>
<tr>
<td></td>
<td>X_F_R_LUNC</td>
<td>-32.645</td>
<td>8.345</td>
<td>-0.349</td>
</tr>
<tr>
<td></td>
<td>trcr_tra</td>
<td>11.773</td>
<td>3.038</td>
<td>.354</td>
</tr>
<tr>
<td></td>
<td>trcr_tr4</td>
<td>-6.085</td>
<td>1.983</td>
<td>-0.295</td>
</tr>
</tbody>
</table>

a. Dependent Variable: HSPT_ALL
In this model, the regression equation is significant -- $F = 31.514$ (p< .001, df = 6, 50) and explained 79.1 % of the variance in passing rates in all sections combined of the HSPT. Four independent variables make significant contributions to the equation: attendance rate, free/reduced lunch eligibility, and the transformational leadership variable at the .001 level of significance; the interaction variable at the .05 level of significance.

In contrast, the independent variables enrollment size and mobility rate are both insignificant with p values of .262 and .632, respectively. That is, statistically the two independent variables have no effect on passing rates in all sections combined of the HSPT. Consequently, I removed them from the regression equation, and I modified Model A.

Table L4 in Appendix L presents a summary of several modified versions I developed of Model A. In these modified versions, I removed and added several independent variables. I did so in an attempt to develop the best model to explain passing rates on all sections combined of the HSPT by transformational leadership.

First, in Models B through H, I removed enrollment and mobility as variables because they are not significant predictors of the variable HSPT-ALL in Model A. Second, in Models B through E, I added a new independent dummy variable, voc_or_c. This new dummy variable, voc_or_c, is not in the original Model A. However, I tried the new variable in the modified versions of Model A in lieu of the leadership interaction variable. I did so to see whether it would make a difference in the significance of the transformational leadership variable. It did make a difference. However, because this
new variable generally lessened the significance of the transformational leadership variable, rather than increase it, I did not use it in the final regression model.

As in the HSPT reading, mathematics, and writing models, I also developed Models B through E to test alternative definitions of transformational leadership in the regression model for the variable HSPT-ALL. Models B through E for the variable HSPT-ALL showed the leadership variables trcr_tra and tr_trans to be the most significant predictors of passing rates on all sections combined of the HSPT, each with $p$ values of .004.

I ran Model F using both the new dummy variable, voc_or_c, and the leadership interaction variable, trcr_tr4. I removed the transformational leadership variable, trcr_tra, from the model to see whether the leadership interaction variable alone would be a significant contributor to this model. The results showed that, unlike the reading, mathematics, and writing modified models, when I removed the transformational leadership variable, the interaction variable remained significant with a $p$ value of .007.

I ran Model G with the transformational leadership variable, trcr_tra, the new dummy variable, voc_or_c, and the leadership interaction variable, trcr_tr4. As in the reading, mathematics, and writing modified models, I abandoned this model for all sections combined of the HSPT. I did so because although $R^2$ is high at .796, the transformational leadership and the leadership interaction variables are both insignificant with $p$ values of .237 and .651, respectively.

Finally, I ran Model H using the transformational leadership variable, trcr_tra, the leadership interaction variable, trcr_tr4, but without the new dummy variable, voc_or_c.
In this model ($F = 47.439, R^2 = .785$), the transformational leadership and the leadership interaction variables are both highly significant, with $p$ values of .000 and .006, respectively. Further, the variables attendance rate and free/reduced lunch eligibility are both highly significant, with $p$ values of .000 each.

As with the reading, mathematics, and writing models, I chose Model H as the one with the best fit of all the modified versions of Model A, using Gujarati’s (1992) criteria for a good model. Essentially, Model H is a duplicate of Model A, but without the enrollment size and mobility rate variables, which I removed because these variables are insignificant predictors of the dependent variable HSPT-ALL. Table 17 presents a summary of Model H.
Table 17

Model H: Multiple Regression Analysis for School Report Card, Fall Survey, and Transformational Leadership Variables for HSPT All Sections Combined

<table>
<thead>
<tr>
<th>Model Summary</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
<td>R</td>
</tr>
<tr>
<td>1</td>
<td>.886^a</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), trcr_tr4 , ATT , trcr_tra, X_F_R_LUNC
b. Dependent Variable: HSPT_ALL

<table>
<thead>
<tr>
<th>ANOVA</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
<td>Sum of Squares</td>
</tr>
<tr>
<td>Regression</td>
<td>21177.177</td>
</tr>
<tr>
<td>Residual</td>
<td>5803.343</td>
</tr>
<tr>
<td>Total</td>
<td>26980.519</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), trcr_tr4, ATT, trcr_tra, X_F_R_LUNC
b. Dependent Variable: HSPT_ALL

<table>
<thead>
<tr>
<th>Coefficients</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
<td>Unstandardized Coefficients</td>
</tr>
<tr>
<td>1 (Constant)</td>
<td>-307.567</td>
</tr>
<tr>
<td>ATT</td>
<td>4.028</td>
</tr>
<tr>
<td>X_F_R_LUNC</td>
<td>-33.467</td>
</tr>
<tr>
<td>trcr_tra</td>
<td>10.431</td>
</tr>
<tr>
<td>trcr_tr4</td>
<td>-5.210</td>
</tr>
</tbody>
</table>

a. Dependent Variable: HSPT_ALL

In this model, the regression equation is significant -- F = 47.439 (p< .001, df = 4, 52) and explained 78.5% of the variance in passing all sections combined of the HSPT.

Four independent variables make significant contributions to the equations: attendance
rate, free/reduced lunch eligibility, and transformational leadership at the .001 level of significance; the interaction variable at the .05 level of significance.

To determine whether the regression model is appropriate for the data, I plotted the residuals, which show no clear pattern. The finding indicates that the data do not deviate from the model in any systematic way, thus verifying that the data met the model's assumptions. Figure 21 shows the standardized residuals, which I plotted against the standardized predicted values.

![Scatterplot](image)

**Figure 21.** Standardized residuals plotted against the standardized predicted values for All Sections Combined of the HSPT.

The regression results are a test for the six hypotheses as follows:
Hypothesis 1: The transformational leadership style of the principal has a positive effect on scores such that a school that has a principal with a high transformational score achieves a higher passing rate on all sections combined of the HSPT.

The coefficient for the transformational leadership variable is 10.431 ($\beta_{all1} > 0$). The variable makes a significant contribution to the regression equation with a $p$ value of .000; therefore, the regression results support the first hypothesis.

Hypothesis 2. Enrollment has a negative effect on scores such that higher enrollment results in lower passing rates on all sections combined of the HSPT.

The coefficient for the enrollment size variable in Model A is $-3.29E-03$ ($\beta_{all2} < 0$). The variable does not make a significant contribution to the regression equation as the $p$ value of .262 is well beyond the acceptable significance level of .05; therefore, the regression results do not support the second hypothesis.

Hypothesis 3: Student attendance rate has a positive effect on scores such that a higher attendance rate results in higher passing rates on all sections combined of the HSPT.

The coefficient for the attendance variable is 4.028 ($\beta_{all3} > 0$). This variable significantly contributes to the regression equation with a $p$ value of .000; therefore, the regression results support the third hypothesis.

Hypothesis 4: Student mobility rate has a negative effect on scores such that higher mobility rate results in lower passing rates on all sections combined of the HSPT.

The coefficient for the mobility rate variable in Model A is $-8.4E-02$ ($\beta_{all4} < 0$). This variable does not significantly contribute to the regression equation, as the $p$ value of
.632 is well beyond the acceptance significance level of .05; therefore, the regression results do not support the fourth hypothesis.

Hypothesis 5: Eligibility for free/reduced lunch has a negative effect on scores such that a higher percentage of eligibility results in lower passing rates on all sections combined of the HSPT.

The coefficient for the free/reduced lunch variable is $-33.467 (\beta_{all5} < 0)$. This variable significantly contributes to the regression equation with a $p$ value of .000; therefore, the regression results support the fifth hypothesis.

Hypothesis 6: The transformational leadership style of principals has less of an effect on HSPT passing rates on all sections combined of the HSPT in vocational schools compared to comprehensive high schools.

The coefficient for the interaction variable is $-5.21 (\beta_{all6} < 0)$. This variable significantly contributes to the regression equation with a $p$ value of .006; therefore, the regression results support the sixth hypothesis.

**Model Summary and Discussion**

The equation for the regression Model H, where HSPT-ALL is the dependent variable, is as follows (see Table 17 for coefficients for each variable):

$$ HSPT_{all} = -307.567 + 10.431\text{TrLS} + 4.028\text{ATT} - 33.467\text{FRL} - 5.21(\text{TrLS})\text{V} $$

The regression model is significant and explained 78.5% of the variance in passing rates in all sections combined of the HSPT. Results of the multiple regression
analysis show that transformational leadership is a highly significant explanatory variable in predicting passing rates in all sections combined of the HSPT ($p=.000$). The high significance level of all sections combined of the HSPT is greater than that of each of the three sections of the HSPT (reading, mathematics, and writing) alone.

The results also reveal that the student attendance rate and free/reduced lunch eligibility variables both have highly significant positive effects on passing rates on all sections combined of the HSPT ($p = .000$ for each).

Both the enrollment size and mobility rate variables have no significant effect on passing rates on all sections combined of the HSPT, and I subsequently excluded them from the regression equation. I expected this result for the enrollment size variable since this variable does not significantly correlate with the HSPT-ALL variable in the correlation analysis. Because the mobility rate variable does significantly correlate with the HSPT-ALL variable at -.607($p<.01$), it was surprising that this variable was not a significant predictor in the regression model. I will discuss the implications of this inconsistency, in detail, in Chapter 6.

The leadership interaction variable significantly contributes to this regression model with a $p$ value of .006. The negative coefficient of $-5.21$ reveals that the transformational leadership variable has a mitigating effect on vocational school passing rates in all sections combined of the HSPT as compared to those in comprehensive high schools. By mitigating effect, I mean that the same transformational leadership score predicts lower passing rates in all sections combined of the HSPT in vocational schools than in comprehensive high schools. Stated yet another way, principals need stronger
transformational leadership in vocational schools compared to comprehensive high schools to achieve the same passing rates in all sections combined of the HSPT.

Figure 22 illustrates the mitigating effect of the leadership interaction variable (see Figure 16, earlier in this chapter, for a detailed explanation of the mitigating effect).
In sum, the regression model where HSPT-ALL is the dependent variable shows that the variables attendance rate and free/reduced lunch eligibility are predictors of passing rates in all sections combined of the HSPT. Most importantly, transformational leadership is a significant predictor of passing rates in all sections combined of the HSPT. Further, the effect of transformational leadership on passing rates in all sections combined of the HSPT is less in vocational high schools than in comprehensive high schools. This

Figure 22. The effect of the negative interaction term of the regression model with dependent variable HSPT-ALL.\textsuperscript{15}

\textsuperscript{15} Line AC represents the relationship between transformational leadership and passing rates in all sections combined of the HSPT in comprehensive schools. Line AV represents the relationship between transformational leadership and passing rates in all sections combined of the HSPT in vocational schools. There is a reduction in the slope of the line AC when the analysis shifts from the comprehensive schools (represented by line AC, dummy variable = 0) to the vocational schools (represented by line AV, dummy variable = 1). (See Appendix M for a detailed explanation of the process of the reduction in slope).
result is similar to the effect of transformational leadership on the passing rates for each of the three sections of the HSPT (reading, mathematics, and writing) alone.

Summary

I developed four related regression models. I did so to determine whether principal transformational leadership is a predictor of passing rates in the reading section, the mathematics section, the writing section, and all sections combined of the HSPT in vocational and comprehensive high schools. I formulated and tested six hypotheses. A summary of the results is shown in Table 18.

Table 18

Summary of Hypotheses

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Independent Variable</th>
<th>Dependent Variable HSPT-R</th>
<th>Dependent Variable HSPT-M</th>
<th>Dependent Variable HSPT-W</th>
<th>Dependent Variable HSPT-ALL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Transform. Leadership</td>
<td>Significant</td>
<td>Significant</td>
<td>Significant</td>
<td>Significant</td>
</tr>
<tr>
<td>2</td>
<td>Enrollment Size</td>
<td>Insignificant</td>
<td>Insignificant</td>
<td>Insignificant</td>
<td>Insignificant</td>
</tr>
<tr>
<td>3</td>
<td>Attendance Rate</td>
<td>Significant</td>
<td>Significant</td>
<td>Significant</td>
<td>Significant</td>
</tr>
<tr>
<td>4</td>
<td>Mobility Rate</td>
<td>Insignificant</td>
<td>Insignificant</td>
<td>Insignificant</td>
<td>Insignificant</td>
</tr>
<tr>
<td>5</td>
<td>Free/Reduced Lunch</td>
<td>Significant</td>
<td>Significant</td>
<td>Significant</td>
<td>Significant</td>
</tr>
<tr>
<td></td>
<td>Eligibility</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Leadership Interaction</td>
<td>Significant</td>
<td>Significant</td>
<td>Significant</td>
<td>Significant</td>
</tr>
</tbody>
</table>
The regression model with HSPT-R as the dependent variable is significant and explained 77.6% of the variation in passing rates in the reading section of the HSPT. The model shows that transformational leadership is a significant predictor of passing rates in the reading section of the HSPT (p= .001) and the effect of this leadership (p= .016) is significantly less in vocational schools than in comprehensive schools. The model also shows that the variables attendance rate and free/reduce lunch eligibility are significant predictors of passing rates in the reading section of the HSPT. Additionally, the model shows that the variables enrollment size and mobility rate are insignificant predictors of passing rates on the reading section of the test.

The regression equation I developed for this reading model is:

$$\text{HSPT}_r = -233.552 + 7.749 \text{TrLS} + 3.344 \text{ATT} - 26.025 \text{FRL} - 3.726 (\text{TrLS})V$$

The regression model with HSPT-M as the dependent variable is significant and explained 74.4% of the variation of passing rates in the mathematics section of the HSPT. The model shows that transformational leadership is a significant predictor of passing rates in the mathematics section of the HSPT (p= .036), with effect of this leadership (p= .029) being significantly less in vocational than comprehensive high schools. The model also shows that the variables attendance rate and free/reduced lunch eligibility are significant predictors of passing rates in the mathematics section of the HSPT. Additionally, the model shows that the variables enrollment size and mobility rate are insignificant predictors of passing rates in the mathematics section of the HSPT.
The regression equation I developed for this mathematics model is:

\[ \text{HSPT}_m = -260.775 + 4.603 \text{TrLS} + 3.708 \text{ATT} - 15.540 \text{FRL} - 3.28(\text{TrLS})V \]

The regression model with HSPT-W as the dependent variable is significant and explained 74.9% of the variation of passing rates in the writing section of the HSPT. The model shows that transformational leadership is a significant predictor of passing rates in the writing section of the HSPT (p = .007), with effect of this leadership (p = .012) being significantly less in vocational than comprehensive high schools. The model also shows that the variables attendance rate and free/reduced lunch eligibility are significant predictors of passing rates in the mathematics section of the HSPT. Additionally, the model shows that the variables enrollment size and mobility rate are insignificant predictors of passing rates in the mathematics section of the HSPT.

The regression equation I developed for this writing model is:

\[ \text{HSPT}_w = -189.130 + 4.864 \text{TrLS} + 2.968 \text{ATT} - 12.369 \text{FRL} - 3.056(\text{TrLS})V \]

The regression model with HSPT-ALL as the dependent variable is significant and explained 78.5% of the variation in passing rates in all sections combined of the HSPT. The model shows that transformational leadership is a significant predictor of passing rates in all sections combined of the HSPT (p = .000), with the effect of this leadership (p = .006) being significantly less in vocational schools than comprehensive schools. The model also shows that the variables attendance rate and free/reduced lunch eligibility are also significant predictors of passing rates in all sections combined of the
HSPT. Additionally, the variables enrollment size and mobility rate are insignificant predictors of passing rates in all sections combined of the HSPT.

The regression equation I developed for this all sections combined model is:

\[
\text{HSPT}_{\text{all}} = -307.567 + 10.431 \text{TrLS} + 4.028 \text{ATT} - 33.467 \text{FRL} - 5.21(\text{TrLS})V
\]

Overall, the four related regression models show that the transformational leadership of the principal is a significant predictor of passing rates in the reading section, the mathematics section, the writing section, and all sections combined of the HSPT. It is most predictive for the variable HSPT-ALL (\(p = .000\)), followed by the variables HSPT-R (\(p = .001\)), HSPT-W (\(p = .007\)), and then HSPT-M (\(p = .036\)). Further, the effect size\(^\text{16}\) is largest for the variable HSPT-ALL (0.066)\(^\text{17}\), followed by the variables HSPT-R (0.055), HSPT-W (0.046), and then by HSPT-M (0.031). These effect sizes substantiate that when I included the transformational leadership and interaction variables in the final model, they made a positive contribution to explaining HSPT passing rates.

In addition, the four related regression models show that the effect of principal transformational leadership is less in vocational high schools than in comprehensive high schools. This mitigated, or diminished, effect is most significant for the variable HSPT-
ALL ($p = .006$), followed by the variables HSPT-W ($p = .012$), HSPT-R ($p = .016$), and then by HSPT-M ($p = .029$).
CHAPTER V
PRESENTATION AND ANALYSIS OF QUALITATIVE DATA

This chapter presents the principal and teacher interviews that were conducted in order to complement the quantitative data. The interviews augment the statistical results of the study by providing descriptive accounts of transformational behaviors of vocational and comprehensive high school principals. Furthermore, the interviews are specifically aimed at clarifying issues related to the HSPT.

Specifically, this chapter offers principal and teacher interview responses to open-ended questions within the framework of Leithwood’s (1994) Model of Principal Transformational Leadership. For each of the four schools, the chapter presents key portions from the interviews of the principal and two teachers, which I selected to be representative of principal transformational behaviors in each of the main categories of Leithwood’s model: Setting Directions, Developing People, and Redesigning the Organization. For Leithwood’s third section, Redesigning the Organization, I have renamed the title to be Redesigning the Organization: School Culture and Decision-Making Structures to help the reader better understand the specific direction and content of the interviews that follow. The responses of the English and mathematics teachers appear together, as the responses do not represent subject-specific views but rather, the
views of teachers, in general. As with the quantitative data, the interviews are anonymous.

The interview process began on March 13, 2000 and ended on April 17, 2000. During this time, I interviewed two vocational high school principals (one female and one male) and two comprehensive high school principals (one female and one male). I also interviewed eight teachers (seven females and one male), two from each of the four schools used for this study. (Details of the school selection process appear in Chapter 3.) Each of the twelve interviews lasted approximately 45 minutes, and all took place in the schools.

Leithwood’s model adapts Bass and Avolio’s (1997) Model of Transactional and Transformational Leadership to the school setting (see Table 2 in Chapter 2). Figure 23, which is a replication of Figure 1 in Chapter 2, shows Leithwood’s model. It identifies school-level principal leadership practices according to eight dimensions grouped into three main categories.
Figure 23. Leithwood's model of school transformational leadership.

The Interviews

Vocational High School A

Setting Directions

The principal of Vocational High School A stated that his leadership style sets the tone and pace of the school. According to the principal, his leadership style is important to the school's overall vision of students achieving success academically, vocationally,
and on the HSPT. The principal noted that he emphasizes the importance of having a collective vision in his school at faculty and parent meetings.

One way that the principal attempts to achieve this vision is to look for alternate ways to improve situations. The principal believes that things do not have to be done as they always have been done. For example, the principal commented on the fact that many of the students need remedial help to pass the HSPT. He reported that he devised a variety of innovative instructional designs, including before and after-school programs, in which students can receive the remedial help.

The principal maintained that he is goal oriented. He claimed that one of his main goals is to facilitate an alliance of the vocational shop teachers with the academic teachers because many of his teachers are still alienated from one another. The principal’s other main goal concerns the specific challenges of a vocational school regarding the HSPT. For example, he noted that in his school, in addition to the typical population of vocational students, there is an “alternate high school population,” consisting of low-functioning students. The principal asserted that these students pose a challenge to him because they are severely limited in terms of their academic ability. Although these academically at-risk students are in a vocational school, they still have regular academic graduation requirements, including a passing score on the HSPT. Helping these students pass the HSPT while they meet the other high school graduation requirements is a major goal of the principal.

The principal recognized that his expectations are high for his students. He said that although passing the HSPT is a major graduation requirement, it was just one part of
the students' overall success in his school. Students in his school need a goal, and their education is the foundation for achieving this goal. The students’ goal, according to the principal, ultimately must be to develop a level of success after graduation. When I asked the principal about his expectations for students regarding their vocational careers, he said that he talks to the students about the possibilities of their becoming leaders and managers when they become skilled workers. The principal explained, “There is a difference between a person who works for a trucking company unloading trucks and a person who is the sales manager for the company. This is what I try to instill in my students.”

The two teachers in Vocational School A reported on how the principal sets direction in his school through his vision, goals, and establishing high performance expectations for both students and teachers. For example, the teachers commented that the principal is a “one-man band” who leads the teachers to do more for the good of the school than for themselves. They said that the principal motivates the staff members to do this by talking about positive things on a consistent basis. For example, one teacher reported that the principal regularly praises and “rewards” teachers who arrive at school on time and maintain good attendance. The teachers also related that the principal is effective in leading the students and staff members in this school because of his involvement in and attendance at student activities, such as Saturday trips and the yearly Chinese auction.

For the teachers, the principal’s mission is to keep every student in the school so each one will graduate with a diploma. The teachers corroborated the principal’s statement that he encourages all of the staff members to join together in the mission to
help students in every way, both academically and vocationally. The teachers felt that the principal is inspirational and makes the staff members feel that they are a team working together for a united goal. According to the teachers, the principal has had a great deal of positive influence over their development as teachers and their attainment of their classroom goals. For example, the teachers said that the principal visits classrooms quite often. According to one teacher, the principal’s regular presence in her classroom has supported her goal to have students recognize and respond to the importance of passing the HSPT.

The main goal of the principal, said the teachers, is to meet the challenge of educating vocational students. They said that many of the students in this school “... are not academically prone. They are vocationally prone and they find the academics an inconvenience to them. Many of the kids think very little of themselves. There is very low self-esteem with these kids.” The teachers went on to say that the students are excelling in this school in large measure because of the good relationship the students have with the principal.

The teachers also commented on the challenging nature of their school and how it affects the principal’s goals. They said that the school faces mobility problems because students transfer in and out of the school all the time. The teachers also spoke about the fact that most of the students in this school are “non-college bound kids” who are at lower academic levels than students in a regular high school. Regarding these challenges, the teachers felt that the primary goal of the principal is to support the students the best he can by facilitating both their academic and vocational success. As an example, one
teacher reported that the principal creates a positive learning environment that "brings out the best" in the vocational students. The teacher reported, "The kids excel here, both academically and vocationally, where they could not in a regular high school."

Regarding expectations, the teachers reported that the principal looks for the positive in his students. They reported that, not long ago, the principal provided breakfast for students who had good attendance, not only those who did well academically. The teachers maintained that this kind of effort on the part of the principal helps students in everything they do, including doing better on the HSPT. According to the teachers, the principal does not talk very often with students specifically about the HSPT. This fact did not bother them because they felt strongly that if students are "cared for academically, socially, and psychologically in the school, they will do well on the test anyway." They agreed that the principal’s caring for the students and "expecting them to do well" helped the students achieve success on the HSPT.

Finally, the teachers explained that the principal communicates his vision of student success to the staff members by instilling pride in them. They said that the principal’s pride in the students as they participate in graduation, the honor society, award ceremonies, and state and national vocational competitions, inspires the staff members to take pride in the students, as well.

Developing People

The principal of Vocational School A said that his supportive leadership style complements his staff members who, for the most part, are self-motivated and have high
expectations for themselves. When I asked the principal if he spends time coaching teachers regarding specific ways to improve HSPT scores, he said that the academic supervisor is the one who is most involved with helping teachers with that task. However, in terms of supporting teachers in their efforts to help the students, the principal said, "I provide support for them to work together. I do the scheduling so they have more time for preparation, and I give them opportunities for professional development." He said that he tries to compliment the teachers when he sees them doing something positive. He claimed that he focuses his attention on improvement and positive things. He stressed, "I focus on what people do, not on what they do not do."

I asked the principal how he demonstrates his enthusiasm to teachers about raising student achievement on the HSPT. He responded, "I go into the classrooms. If I am pleased, I send teachers letters, flowers, anything to brighten their day." The principal asserted that the teachers all work hard to please him and that they know he is excited when the students do well.

The principal said that he believes he helps teachers examine student achievement issues from different angles. He constantly tries to address the student learning process with the teachers. As an example, the principal said that the HSPT has a certain format, multiple choice and open-ended questions. He said that he helps the teachers study the format so that they can make their test preparation activities relevant and understandable to the students. This, the principal feels, helps students do better on the HSPT.

Half way through my interview with the principal in the school library, he excused himself briefly to work with several students who requested his help on building a
project. When he returned, I asked whether this incident was an example of his
commitment to personally helping the students in his school. He nodded in agreement. I
then asked him how he conveys his values and best practices to his staff members. He
said, “I model them. I clearly want to lead by example. I feel that words are empty.
Actions are what count.”

The teachers in Vocational School A described the principal as supportive, a
provider of intellectual stimulation, and a model of important organization values.
Regarding the principal’s role in raising HSPT scores, the teachers said that the principal
professionally supports the teachers in terms of obtaining funding for instructional
materials. For example, they said that the principal was able to obtain funding for a
computer program in the “skills lab” for the students. They reported that the principal
supports them by obtaining books, calculators, and other materials for the classroom.
One teacher said, “I just write it up and he gets it for me.” Additionally, the other teacher
commented that the principal arranged for the teachers to have telephones in the
classrooms for calling parents. She said, “I guess he felt that if we could improve
communication with parents, students would do better in school.”

On their own, both teachers spoke about the principal’s support concerning his
recognition of the good work teachers were doing. One teacher said, “When he comes
into your classroom and sees something good going on, he will give you a wink.” The
other teacher said that she felt that the principal showed appreciation to her for managing
the Technical Honor Society. She said, “I can tell that he appreciates the good work I am
doing with this.” Further, the teachers said that they admire the principal because he is
enthusiastic and kind to the staff members. As an example of the principal’s kindness, one teacher said that the principal sends flowers to staff members when they are ill, and cards to them if they are feeling troubled.

Both teachers reported that the principal plays a large role in the intellectual stimulation of the staff members. They said that the principal has met with them many times to discuss ways of improving and modifying their teaching styles. In addition, the teachers felt that the principal is adept at thinking of different angles in the problem solving process. One teacher noted, “The principal has definitely helped me to see other ways of doing things.” The other teacher agreed and said, “In the few times I have spoken to him about teaching students how to solve problems, he has brought up things that I have not thought of before or was not aware of.”

The teachers felt that the principal is an asset to the school and noted that he is personally involved with the students. He seeks to develop the students as well as his faculty. According to one teacher, “We have a small staff that can only go so far. The principal does so much here himself. He has taken up two major activities -- the yearbook and the robotics team. He sets up trips on Saturdays for the kids. If the kids pass the HSPT, he gets funding for these trips and personally goes with them on Saturdays.” In regard to modeling best practices, the teachers noted that the principal works quietly and effectively outside of school. One teacher reported his exemplary behavior. She said,

The principal has a basement full of sneakers in his home and gives them to students who need them .... He is very community minded and is
constantly doing things in the county. He doesn’t flaunt this …. You find out what he does through the kids!

The teachers generally felt that the principal is a good person who sincerely cares about the teachers and students in the school. One teacher viewed the principal as family oriented. She explicitly said that she felt a part of the principal’s personal family. To illustrate this feeling, the teacher explained that she has gone to the principal several times to talk about personal problems. The principal gave her all of his personal attention. She said that there is a mutual feeling of trust between the principal and herself and, because of that trust, she will “go the extra mile for him.” Further, the teacher added that the behavior of several of the supervisors definitely reflects the principal’s “caring” leadership style.

The teachers emphasized that the principal’s leadership style is extremely satisfying to them because he is very involved with the students and the teachers all of the time. They felt that it is commendable that the principal is not in his office, but constantly out in the school building. According to one teacher, “He is really on the student level. He gets down and dirty with them! He also talks to them about things that make them feel good, like their African-American heritage.” They said that there was recently a school-wide celebration about the students’ heritage in which the principal was directly involved. According to the teachers, the principal’s initiation of the celebration definitely raised the students’ self-esteem.
Redesigning the Organization: School Culture and Decision-Making Structures

The principal of Vocational School A spoke about his strategies to continually redesign the organization by strengthening the school culture and developing opportunities for his staff to participate in school decisions. He began by discussing his ongoing involvement with the hiring of appropriate personnel to consistently refocus the school for student success. He felt that his involvement ultimately impacts the students in the school and said, “I believe transformation [of the organization] can occur more easily if you hire the right people.” The principal emphasized that when he hires new people, there is an infusion of new blood and new mindsets and that this infusion has a recognizable impact on the overall culture of the school. According to the principal, it is important to hire teachers who share the same vision, norms, and values that he has. The principal stressed that he constantly attempts to integrate staff members into the organization who share his commitment to student achievement in a vocational setting.

In regard to decision-making in the school, the principal said that he is continually looking for new structures which will support the teachers as they make decisions on their own, without his input. He explained that his fostering of teacher participation in school decisions does not diminish his authority, nor does it absolve him from the responsibility of decision-making. Rather, his encouragement of teachers to make decisions on their own enables them to be actively involved in collaborative planning and problem solving related to new initiatives in the school. He asserted,
If they can’t make decisions on their own, growth and ownership are not there. I encourage them not to use my name, but to make their own decisions. This empowers them in the long run.

The principal contended that his leadership style in regard to sharing responsibilities with staff members complements the teachers’ efforts. He said that he does not feel that he overshadows or has power over the teachers. The principal stated, “After I revise the structure of the school, I work closely with the teachers to continually reevaluate the degree to which I empower them to make decisions in this school. I review the teachers’ schedules at least once a month to make sure I am giving them adequate time to meet together in committees.”

According to the principal, he reinforces the strong vocational culture in this school on a daily basis. He noted, “I feel that the name ‘vo-tech’ identifies us. The school is a chosen learning environment.” Because of the unique nature of the vocational school, the principal said that he uses every opportunity to communicate to his staff that vocational education is not just “hands-on.” For example, the principal stated that staff members often lose sight of the fact that students need to succeed both vocationally and academically in his school. He said that he tries to constantly reshape the productive school culture in which both teachers and students must value educating students for employment through academic achievement. According to the principal, the students will be unsuccessful in their “chosen career areas” if they cannot read, write, and do mathematics. The principal contended, “The students have to read and understand
complicated manuals, use computers, and be able to communicate verbally with potential customers. They have to be good problem solvers.”

The principal stated that he continually refocuses his priorities to create an atmosphere in the school that embraces the notion that students should be treated with care and respect. According to the principal, “We want our teachers to realize and accept the roles they are entrusted with -- the development and progress of our young people. This is what parents expect, and this is what I try to instill in them.” He stressed the importance of talking to students like adults. In regard to the HSPT, for example, he emphasized that it is important for him to continually retune the school atmosphere so it will give students an acceptable reason to take and pass the test.

The teachers in Vocational School A endorsed the principal’s statement concerning his delegation of responsibilities in the school as a way of fostering staff participation in the decision-making process. They maintained that the principal appears not to be making decisions because he tends to delegate responsibilities to other administrators. Both teachers agreed that adjusting the school’s structure and delegating key responsibilities was the principal’s way of demonstrating that he values shared leadership in the school, as opposed to delegating as a way of avoiding responsibility. One teacher viewed the principal as “mostly managerial,” delegating matters to other staff members so that the school will run well. She reported, “The principal is managerial because he has so many roles to play. If the roles can’t be met by him, he delegates to others to get them involved.”
The teachers also spoke enthusiastically about the principal’s dynamic role in developing and maintaining a productive school culture. First, they said that the principal communicates the importance of vocational excellence by his active participation in programs in the school. For example, the principal runs the Vocational Industrial Club of America (VICA), which is a nationally endorsed program that conducts skills competitions for vocational students. Second, they emphasized the principal’s strong commitment to community service and the fact that he constantly reinforces the importance of staff involvement in community activities. To exemplify the principal’s involvement in community service, one teacher reported, “When B _____ Township was flooded [referring to Hurricane Floyd], the principal came to school with students at night and on Saturdays to make hoagies for the flood victims.” Third, the teachers discussed the school’s culture in relation to parent involvement. One teacher said that the principal “draws the parents in” by organizing, for example, a Chinese auction involving the parents. Finally, the teachers maintained that the principal’s personal commitment to the success of the students fosters a “student focused” culture in the school. One teacher noted that the principal’s favorite motto is “We are all here for the kids.” According to the teachers, the principal’s behavior reshapes and strengthens the school’s culture by being consistent with those overall values and beliefs shared within the school.
Comprehensive High School A

Setting Directions

I asked the principal of Comprehensive High School A to describe the overall sense of purpose, or vision, in her school. She began by saying, “My overall vision for this school is for students to be good citizens, for students to rise to high standards, and for the infusion of technology in the curricula.” She went on to say that five or six years ago a charter group of administrators, teachers, and parents developed a strategic plan for the school. According to the principal, the charter group developed a vision for the district with goals, an action plan, and a common set of directions in a number of areas. One of the areas that the plan addressed was community service. The principal spoke at length about her vision of a community service program and the way in which it evolved in the school. She stated,

The idea came out of the strategic plan developed by instructors but formulated by me. The idea of mandated community service was one that was not easily received by everyone. In fact, when I first introduced the idea, some students asked me if I would debate the idea on the local TV station. I thought about this and decided that I couldn’t refuse the debate if I really believed in community service. What happened was very interesting. One student was strongly against community service. However, as the debate progressed, this student began talking about the service she is currently doing, and suddenly the light went on in her head.
She became aware that community service was a good thing and ended the debate by agreeing with me!

The principal said that the Board of Education did not make the program mandatory at the beginning because many of the faculty members were not in agreement at the time. However, she contended that when she began giving out faculty awards and recognizing the importance of involvement, people gradually “came on board.”

I asked the principal whether she thinks that she motivates teachers to do more than they are expected to do regarding preparing students for the HSPT. She smiled and said that she does but not only in regard to preparing students for the HSPT. She stressed that she has ongoing dialogue with her teachers about the importance of the students’ strong academic performance and raising standards across all curriculum areas. She also noted that there are many staff development programs in the school that are designed to raise the standards for all students. She explicitly stated, “All students are very important to me!” and contended that raising standards has become a theme in this school.

I then asked her how she motivates her teachers. She responded by saying that she is able to involve teachers in most school-related events just by telling them what wonderful initiatives the events are and by developing good public relations about the initiatives. According to the principal, “I am able to do this. I take a step back and let people see the success and excitement of things; then they eventually want to be involved on their own.”

Regarding goals, the principal said that she works with the teachers to help them create goals for themselves. She explained that she participated with a school committee
to develop a mission for the district, which consisted of goals and an action plan. She said
that the school’s goals relate to issues concerning community service, technology,
writing, problem solving, and research.

The principal related that several years ago she led the effort to raise awareness of
HSPT performance with the expectation that this effort would help students do very well
on the test. The principal said that she, along with the department supervisors, organized
a Mathematics and English Awareness Program. The principal stated, “We wanted to
instill in students what we believed to be critical to the school and the community.” The
principal emphasized the fact that there are high student expectations not only for HSPT
scores but also for student achievement in general. The principal admitted that these
expectations are not always discussed directly with the teachers. She said that she speaks
at advisory meetings about this issue, mainly with other administrators and department
supervisors.

When I asked the teachers in Comprehensive School A to describe the principal’s
leadership regarding vision, they responded that the principal is focused with a clear sense
of vision and purpose. Their contention was that the principal’s vision in the school is to
move ahead. Moreover, according to the teachers, the school moves ahead because the
principal enables the teachers to move ahead. The teachers asserted that, basically, if the
principal wants the teachers to do something, they do it. One teacher admitted, “In fact,
the reason I am doing this interview with you is that the principal asked me to do it, and I
would not turn her down.” The teachers emphatically stated that the staff members have
embraced the principal’s vision in the school and they are all very supportive of her.
According to one teacher, the principal’s strength is in her commitment to the programs in the school, particularly the school-wide community service program and the standards movement in the classrooms. When I asked the teachers what the principal emphasizes as part of the collective mission in the school, they contended that the mission in this school is for everyone to graduate. More specifically, according to the teachers, the mission is a dedication to “offer the very best to the students to encourage them to be their very best.” The teachers also spoke about the fact that there is changing population in the school that is academically at risk. They stated,

Our population is changing. We have always enjoyed high HSPT performance over the past few years. We have always had a small ESL [English as a Second Language] population. We have never had a kid fail the HSPT. Now students are coming to us from a variety of educational backgrounds and our HSPT scores are going down. A group settled here from Paraguay and this population is increasing every year.

The teachers said that although the population in this school has become diverse and challenging, the principal and the staff members still have remained dedicated to the vision of high academic achievement. According to the teachers, this dedication is due to the principal’s strong focus and leadership.

Regarding expectations, the teachers stated that there is a great deal of community pressure placed on the principal for students to do well on the HSPT. Because of this pressure, the principal simply expects that the students are prepared and will do well on the test. Further, according to the teachers, high principal expectations translate into the
principal's confidence in the teachers and supervisors as they prepare the students to pass the HSPT.

One of the teachers reported that the principal's high expectations manifest themselves in the morning announcements, for example, in which the principal talks about her confidence that the students will do well on the HSPT. The other teacher noted that at the freshman orientation, the principal regularly discusses the achievement of high passing rates on the HSPT as a school goal. According to this teacher, the principal is enthusiastic about students doing well on the HSPT and this enthusiasm translates into the school goal of ensuring that everyone graduates.

Developing People

The principal of Comprehensive High School A described herself as warm and caring. In terms of supporting teachers and students, the principal maintained that her leadership affects everyone. She stressed the fact that she is "fair" in dealing with students and staff members. The principal also noted that she is supportive and is able to influence people, not by requiring them to do things, but by taking a "back-door approach." She stated, "My being enthusiastic, complimenting people, and being genuinely concerned about the school eventually gets everyone on board. I think I have that ability."

The principal was eager to discuss the positive support she receives from the staff members. She related that when she was first appointed as principal, the superintendent
and she were not in agreement over the manner by which she was running the school.

According to the principal,

there were issues having to do with some decisions that I made, which the superintendent did not agree with. The superintendent wanted to remove me as principal and the entire faculty came out in support of me. One hundred percent of the faculty signed a petition to keep me here and a copy of this petition was given to the Board, the newspapers, and to the parents. This makes me feel that teachers are very much in support of my leadership.

The principal said that she expresses satisfaction to the teachers when they accomplish something. She said, “I am very open about congratulating my staff on their accomplishments. I send little handwritten note cards congratulating teachers. I put things in the weekly bulletin talking about the accomplishments of teachers -- little messages about accomplishments with our students.” The principal also said that she supports staff members by offering professional development programs that, according to the principal, “are designed to help raise standards for all students.” When I asked the principal about her time spent coaching teachers regarding ways to improve student HSPT scores, she said that she rarely speaks about improving HSPT scores directly with teachers. The principal contended that she speaks about improving instruction with the other administrators and the department supervisors at advisory meetings, who, in turn, speak with the teachers.
I asked the principal if she helps teachers examine student achievement issues from different angles. She said that she does, particularly after formal observations. She reported that she usually observes nontenured and special education teachers and that she shares the results of the observations with the department supervisors. According to the principal, "Through the observations, I see where teachers have not been successful. People do not want to see what is wrong with them. As the principal, I work with them and help them create goals for themselves." The principal also spoke about her assisting a "senior" staff member who needed to be reminded of "new ways of doing old things." The principal maintained that she is a firm believer in the idea that although things may have worked in the past, it may not work now. Moreover, the principal contended that she enjoys bringing new educational philosophies and strategies that work in the school, "not just what is in vogue."

The principal made it a point to emphasize that her background is in special education. The principal has an undergraduate degree in Educational Psychology and a doctorate in Special Education. She explained that because of her training in special education, she generally looks at student situations in a way different from that of most administrators. She contended, "I had training in mental health, and because of that, I have a good perspective on student problems."

The principal asserted that she is proud of her implementation of the community service program in the school. She felt that this initiative models her own values regarding the importance of community service. The principal said, "I take a great
amount of pride in this program because I adapted an idea and implemented it. It was a
great deal of work bringing people on board. This project took perseverance.”

During the interview, the principal spoke at length about her modeling efforts to
raise awareness of HSPT performance in the school. According to the principal,

I want to instill in students what I believe to be critical to the school and
the community. I have given out pencils that say ‘Good Luck.’ I’ve
organized student skits to be broadcast over the PA system .... all
encouraging students to do well on the HSPT.

I asked the principal if she believes that she instills pride in the teachers for
working with her to raise student HSPT scores. She responded that she believes that she
does instill pride in them, particularly when she shares the results of the HSPT at faculty
meetings. It was the principal’s contention that when the HSPT scores arrive in the
district, there is “a frenzy” in the school, particularly regarding the special education
students. She noted that because the teachers are so concerned that the students will
achieve passing scores on the HSPT, they “run to her office” to find out about the HSPT
results. According to the principal, the teachers care as much as they do because she
cares.

The teachers in Comprehensive High School A reported that the principal’s
leadership style is satisfying to them and that staff members generally feel comfortable in
her presence. For example, one teacher mentioned that the principal often eats in the
faculty room and “moves about and eats at different tables with different people.” The
teachers also maintained that they are most supportive of the principal. One teacher
corroborated the principal’s account of how the staff members supported her against the superintendent’s desire to have her removed as principal. According to this teacher, “The faculty was vociferous in her favor.”

I asked the teachers about the support they obtain from the principal. Although the teachers reported that the principal does not personally coach them on ways to improve HSPT scores, they said that she is supportive in that she orders instructional materials that they need to help students practice for the HSPT. They said that the principal obtains financial support for such items as supplies, workbooks, and resources they need to teach the HSPT programs. The teachers maintained that the overall climate in the school is good and teachers are essentially happy because of the principal’s support in this area.

I asked the teachers how the principal expresses satisfaction to them when they meet her expectations. According to one teacher, the principal always recognizes his accomplishments by saying things like “Good job!” and “Great work!” According to both teachers, the principal does openly congratulate the English and mathematics teachers on their HSPT accomplishments in the principal’s bulletin. One teacher explained that several years ago the principal promised the staff members that if students did well on the HSPT she would take all of the teachers out for dinner. This teacher was somewhat sarcastic when she said, “Now that we do well all the time on the HSPT, we have done ourselves out of a dinner. I guess that is the price we pay for success!”

The teachers both agreed that the principal does not examine academic issues as much as she examines issues concerning the personal problems of the students.
However, according to the teachers, the principal does to some extent help teachers look at academic issues in several ways. One of the teachers gave the following as an example:

There was an issue that involved two students who needed to be in both mathematics and English basic skills classes. We needed to make changes in the master schedule. The principal helped me in examining this issue and in finding a solution that would benefit the students.

For the teachers, the principal demonstrates having good organizational values in the school. According to one teacher, “The principal is behind us. It is important to her that students in this school score well on the HSPT. The scores are everything!” The other teacher contended that the principal is a role model to most teachers in the school because she helps teachers help the students to do their best.

Redesigning the Organization: School Culture and Decision-Making Structures

The principal of Comprehensive School A spoke about how she continually reshapes the school’s culture by her dedication to the community service program. The principal reminded me that she formulated the initial idea for the program and how proud she was of the program’s success. The importance of the community service program in this school was clearly showcased by a large display in the conference room where I conducted my interview with the principal. The display consisted of photographs, stories, and anecdotal information about the community service program in the school. According to the principal, the success of the program is testimony to the fact that she has created and maintains a school organization that supports ongoing and meaningful
relationships with members of the community. The principal also indicated that the community in turn gives back to the school. She asserted, “If I need anything, there are people in the community whom I can reach out to and they will be there for me in a minute.” For the principal, her commitment to the community service program serves to continually strengthen the school’s cultural value system, which promotes the importance of students and staff members helping others and serving the community.

The principal stated that she is constantly refocusing the school’s vision to reinforce the “caring culture” in the school. The principal maintained that she nurtures the school’s “caring community” structure by the ongoing and meaningful relationships she has with members of the community. She also contended that she creates an atmosphere of caring in the school by her continual efforts to build good relationships between the teachers and herself. The principal stated,

I have structured the school to be like a family. My position as principal helps to continue that family feeling. I know this is true because we have new teachers and a new administrator this year who went out of their way to comment about the wonderful relationship I have developed with the staff members.

Furthermore, the principal noted that her behavior with students strengthens the “caring culture” in the school. She said that she constantly endeavors to develop a productive atmosphere in the school in which students are treated with care and respect. She proudly gave the following example of how she molds the supportive student culture in the school:
I personally call some kids at home to let them know about their HSPT scores. There was one student who was afraid he wouldn’t pass. When the scores came in, he passed by getting 30 points beyond passing. I was so excited for him, I called him at home to let him know the good news!

The principal emphasized that a natural extension of the culture of community and caring in the school is her strengthening of the school-home connection in the school. According to the principal, she consistently reaffirms the norms of excellence in the school by the collaborative work she does with parents and guardians of students. The principal claimed that she regularly refocuses the school’s vision in relation to parents and their responsibility for facilitating norms of high quality student performance in the school. Furthermore, she maintained that her own belief that all students have the potential to be successful is reflected in the high standards of excellence she promotes with parents.

The principal reported that she continually reassesses and refines the parental involvement structure in the school to reflect the schools’ belief that the active participation of parents is important. As an example of her ongoing efforts to redesign the parental involvement program, the principal showed me a copy of the inaugural edition of a newsletter entitled “Inquiry: Making a Curricular Connection between ______ High School and Home.” The newsletter highlighted the fact that parental support is critical to student success in the classroom. The principal explained that parental involvement is extremely high and positively embraced by staff members in the school.
The principal reported that to ensure an atmosphere in which teachers feel comfortable in expressing their opinions, she is constantly reshaping the decision-making structure in the school. She maintained that she is open, she listens, and she gathers input from the teachers when she makes a decision. According to the principal, “I am always open to input from a variety of people.” The principal reported that she designs structures on an ongoing basis that allow for sharing her decision-making power throughout the school. For example, the principal always makes certain that there is a variety of stakeholders, such as parents, students, teachers, and community members, on each of the committees that formulates policies.

The teachers in Comprehensive High School A spoke about how the competitive culture of the school is continually reinforced by the principal. One teacher remarked, “The atmosphere here is very competitive … the Board compares this district’s HSPT scores to the scores of other districts.” The other teacher also indicated that the principal is under a great deal of pressure from the Board of Education to show student progress in the school and that she is “sensitive to what they want.” Both teachers agreed that the principal uses every opportunity to regularly revise the structure of the school so that students can attain high academic achievement, particularly on the HSPT. For example, the teachers reported that the principal spends a great deal of time adjusting the structure of the school by creating class schedules to accommodate remedial classes to help students do better on the HSPT.

The teachers said that the principal always seeks out new ways to refine the collaborative structure in the school. They both corroborated the principal’s statement
that she reinforces an atmosphere of shared decision-making in the school. The teachers felt included and "empowered" by the principal in the decision-making processes in this school. They agreed that the principal regularly asks for their opinions regarding curriculum and instruction in the school. One teacher stated, "She has faith and trust in our decisions and expertise." Further, they explained that although the principal and staff members do not always agree, the principal still gives teachers the opportunity to voice their opinions. According to one teacher, "This is not a 'do it my way' type of school."

The teachers also noted that in order to give teachers the freedom to do what they need to do, the principal always redefines the school's structure. For example, the teachers reported that the principal often changes class schedules to give teachers in the same department collaborative time for planning and decision-making. One teacher noted that the principal once asked a committee of which he was a member to make recommendations about scheduling basic skills mathematics classes. According to this teacher, the principal gave all of the committee members ample time in their schedules for problem-solving and decision-making. Further, he said that the principal ultimately used the recommendations of the committee when she created the new basic skills schedules.

**Vocational High School B**

**Setting Directions**

I asked the principal of Vocational School B to describe her leadership style regarding the central purpose and overall vision of the school. She reported that,
essentially, she has an authoritarian style. The principal maintained, “When I say something, I mean it. I am confident in my judgments. If I believe in it, I will fight for it. I will not waiver in my decisions.” The principal maintained that she is basically task oriented. According to the principal, the Board of Education has employed her as the principal to do a job, and that is exactly what she does. She said that her leadership style is a reflection of who she is and what she is expected to do in the school. The principal characterized herself as “rigid and structured.” However, she stressed the fact that although she considers herself to be rigid and structured, she still “can have fun with her staff members and be close to them.” The principal maintained that because of her strict nature, she believes that the teachers trust her since they know what to expect from her.

I asked the principal to discuss her basic vision of the school and how she helps her staff members build and achieve this vision. The principal said that because her school is a vocational school, a large part of her vision is to see that students find employment in the workplace after they graduate. She reported that another part of her vision is for students to do well on the HSPT. The principal reminded me that all students, including vocational students, must pass the HSPT or they will not graduate with a high school diploma. The principal explained that because of the importance of passing the HSPT, she directs all of the academic teachers to prepare the students for the test. The principal recognized that very often schools give the mathematics and English teachers the entire responsibility of preparing students for the HSPT. She explained that she insists that the other academic teachers, such as those who teach science and history, prepare the students for the test as well. For example, the principal noted that one of the
history teachers in the school has his 11th grade students do a great deal of writing in preparation for taking the HSPT.

The principal stated that there is a great amount of pride in the school regarding student achievement. According to the principal, "The pride is results driven. I try to generate excitement in the school when we have high passing rates. We are all very proud when the HSPT scores come back and they are good." The principal spoke about how she involves the teachers in feeling the intensity of the school-wide effort to motivate students to pass the HSPT. She said, "I try to create just the right amount of tension so that teachers are happy that some students passed the HSPT, yet unhappy because they have not done the best job they can with all of our kids on the test. This is not so easy to do."

I asked the principal how she sets goals for her students. She responded by saying that, unfortunately, she sets goals for students mainly in terms of the students following rules and regulations. According to the principal, however, she does interact more informally with students during her lunch duty and in the halls when the students go to class. For example, the principal said that during her cafeteria duty she asks the students questions such as, "How are you doing? Are you comfortable in ____'s class?"

Regarding the teachers, the principal said that she often sets goals for them at faculty meetings, particularly when she talks about the importance of passing the HSPT for the school and the district. She also said that she speaks personally to each academic teacher about the importance of trying to maintain the HSPT passing rate in the school at least at the 85% level, which is the state monitoring requirement.
The principal noted, on the topic of setting HSPT goals in the vocational setting, that vocational schools generally have a “skewed curve” regarding student academic achievement. That is to say, students in vocational schools are more academically at risk than those in comprehensive high schools. The principal stated, “Many of the students come to us reading at a third or fourth grade reading level. My challenge is to somehow get them to pass the HSPT.” Further, the principal maintained that setting realistic academic goals is more difficult in vocational schools because in vocational schools there generally are no department chairpersons. The principal noted,

In ____ High School [comprehensive high school], there are department chairs who help the principal. The department chairs are the instructional leaders. The principal should not be an instructional leader. You cannot manage and do all the other things. It’s too much!

The principal added that if she were a principal in a comprehensive school rather than in a vocational school, her leadership would be exactly the same because her leadership style is her personality.

The principal recognized that she has to be “careful with her teachers” because she can be too demanding. She said that her main interest is for students to do well on the HSPT and she hopes the teachers consider students passing the HSPT to be important. The principal felt that when she emphasizes something, the teachers tend to emphasize the same things. The principal also said that she sets up standards for teachers and admitted that she becomes upset if they do not live up to these standards. She noted, for example, that she keeps track of teachers’ plan books and admonishes the teachers if the
plan books are not handed in on time or if they are not done properly. She also stated that she reprimands teachers when they arrive late at school. The principal emphatically stressed, “There is no room for frivolity in this school. I need to get and keep things moving!”

The teachers in Vocational High School B supported the principal’s statement that part of her overall vision in the school is for the students to pass the HSPT. One teacher reported, “In this school, HSPT takes center stage.” According to the teachers, the issue of students passing the HSPT is the principal’s main concern when she schedules teachers and classes for the year. One teacher maintained that although the principal does not verbalize it, her goal in the school is for everyone to pass the HSPT. She reported that this year the principal purchased computers and computer instructional software for her classroom, for the sole purpose of students practicing for the HSPT.

The teachers characterized the principal as “personable, professional, but a bit too serious.” They said that the principal was strong, seeing herself as the guide who coordinates what has to be done. According to one teacher, “The principal will go the extra mile for you.” Further, the teachers said that the principal generally recognizes teachers for the good work they do, although her recognition may not be immediate. They also said that they were comfortable with the principal even if she did not agree with them all of the time.

The teachers said that they felt a sense of pride working with the principal. When I asked how the principal instilled pride in them for working to raise HSPT scores in the school, one teachers responded, “If our scores are good, the principal makes us feel that
they are good because of our team effort.” The teacher said that she works hard to prepare the students for the HSPT and that she would not consider doing less because of the mutual respect she and the principal have for one another. Both teachers said that they would not want to disappoint the principal. One teacher said that she would do anything for the principal simply because “she is my leader.”

According to the teachers, the principal is strong, focused, and effective as an educational leader. One teacher said that although the principal may not know what is on the HSPT, “she gets us to teach to get the kids to pass the test.” According to this teacher, “The principal pushes us, and it gets done.” The other teacher emphasized that the principal is under a great deal of pressure from the superintendent for the students to do well on the HSPT. Despite the pressure, however, the teachers felt that the principal does a good job as a manager and a facilitator. They said that the principal runs the school well and because of that, the students achieve high scores on the HSPT.

The teachers reported that the principal has high expectations for the students regarding their HSPT scores. They also said that she is realistic. One teacher noted that because vocational students have a difficult time passing the HSPT, the test was constantly on the principal’s mind. According to this teacher, the principal always keeps track of student progress. She emphasized, however, that the principal is never negative and is supportive of what the teachers need to help the students pass the HSPT.

The other teacher corroborated the principal’s statement that she speaks to students in the cafeteria during her lunch duty about their progress in school. According to this teacher, the principal also sets up appointments in her office to confer with
students about how she can help them do well on the HSPT. Although she said that the principal does not go into classrooms very often, the teacher noted that the principal goes into the classrooms at the beginning of each year to stress the importance of passing the HSPT. The teacher believed that after the beginning of the year, the principal trusts that the teachers will help students adequately prepare for the test.

The teachers said that the principal talks to teachers mainly as a group, not individually, about raising student achievement on the HSPT. They maintained that the principal does not interact with teachers about HSPT on a personal level. According to one teacher, “The principal wants the students to do well and she wants the teachers to make sure it happens.” Moreover, this teacher maintained that the principal, just as she herself had said, expects a great deal from both the teachers and the students, and expresses displeasure when they disappoint her.

Developing People

The principal of Vocational School B claimed to be fair with both students and teachers. She asserted, “I have no favorites. A rule is a rule is a rule!” The principal said that she regularly speaks to students regarding their classroom progress as they prepare to take the HSPT and asks if there is anything she can do to help them. She admitted that, unfortunately, she did not know the names of many of the students. We talked about the time she made lasagna for the students who came to school during spring vacation to take supplemental HSPT classes. When I asked her if she felt this event was inspiring and motivating to students she modestly responded, “Yes, I suppose so. But I think of myself
differently. My own opinion of what I do is different. I do not see this as such a great thing, but others might."

When I asked how she helps teachers examine student achievement issues, the principal responded by saying that her style is naturally analytic. The principal maintained that she analyzes student work and prior test results, trying to decide what really affects the HSPT scores. However, the principal admitted she does not do this with the teachers on an ongoing basis. The principal further related that helping teachers with issues of student achievement is an area that the curriculum supervisors should address with the teachers.

When we spoke about providing teachers with individual support, the principal maintained that she is always available to them and her “door is always open.” She said that teachers are “often at my doorway” and that she always makes the time to talk to them and help them in any way she can. According to the principal, she regularly asks the teachers if there is anything she can do or obtain for them, particularly regarding preparing students for the HSPT. She said that teachers often ask her to obtain instructional materials or supplies for their classrooms. Although teachers are asked to submit their supply requests at the beginning of the school year, the principal said that she always manages to “find money in the school budget” to obtain what the teachers need at other times, too. The principal noted that she often recommends that certain teachers attend workshops to help them be more effective classroom teachers. For example, following a classroom observation in which the teacher had little control over her class, the principal recommended that the teacher attend a workshop on classroom management.
I asked the principal how she expresses satisfaction to teachers when they meet her expectations. She answered that she does not make a big fuss. She said that she tells the teachers they are doing a good job, but does so informally. As an aside, the principal said, “I told the teachers that if the students pass the HSPT this spring, I will take them all out for a drink.”

Regarding her modeling of organizational values, the principal said that she does her job, is in school every day, and believes that she behaves in a way that is professional. She asserted, “I get the work done. I do not know if they like me. I really do not care. It does not make a difference to me. I will run the school the same way if they like it or not.” The principal recognized that she is essentially “business-like” with her staff members. However, she admitted that there is a softer, more personal, side of her. For example, she spoke about her ongoing meetings in her office with of the teachers about the teacher’s personal family problems. The principal also made reference to the school’s vice-principal who needed additional time away from the school because he was involved in a divorce proceeding. The principal said that although his daily presence in the school was critical, she understood his dilemma and allowed him to take the time he needed.

The teachers in Vocational School B were in agreement that the principal is guiding, supportive, and complimentary, especially when the students do well on the HSPT. They said that the principal expresses satisfaction to them when they meet her expectations. One teacher reported, “She always compliments me on the HSPT results or the good work I do with the students.” The teachers said that the principal is also supportive by providing them with additional materials for instruction and HSPT
preparation. They also stated that the principal supports teachers in a personal manner by recognizing that teachers are all people with personal problems and that school is not their whole life. One teacher reported that the principal finds teachers’ strengths to work with, although she expects more from the stronger teachers. She said that if she has a problem with her students, she goes to the principal and that she (the principal) listens and tries to help. According to this teacher, “The principal’s door is always open.” However, the teacher also said that because the principal is comfortable with the staff members, she tends to take them for granted.

The teachers maintained that the leadership of the principal is important for the overall HSPT effort in the school. I asked the teachers how the principal provides them with support specific to HSPT preparation. They responded by saying that the principal does this mainly by taking a personal interest in the students. According to one teacher, the principal “zeroes in” on each student and attempts to ascertain why some students failed the HSPT. The teacher said further that the principal then confers with the teachers about strategies to help these students succeed on the HSPT.

Both teachers corroborated the principal’s statement that the curriculum supervisors are largely responsible for helping teachers prepare students for the HSPT. For example, one teacher reported that because students are at high academic risk, she suggested to the principal that HSPT preparation should begin when students enter the 9th grade. According to this teacher, although the principal did examine this issue with her, the principal eventually deferred to the curriculum supervisor for the solution.
I asked the teachers whether the principal coaches them on ways to improve student HSPT scores. They reported that the principal generally does not do this because she really does not know very much about the English and mathematics curricula. One teacher said that the principal gives the teachers no specific instructions how to raise HSPT scores. The teacher said, “It’s been a long time since she has been in the classroom. She does not even know what is on the test. I think it is difficult for her to help us in that way.” The teacher said that the principal has clear expectations of teachers and gives them direction. However, the teacher pointed out that the principal recognizes that the teachers need “leeway” because they all do not operate in the same way in the classroom. This teacher also reported that the principal explores issues with teachers, but she is realistic about what the students can or cannot do and does not expect miracles. For example, she said that if the principal knows a student will never pass the HSPT (for example, students who have limited English proficiency), she suggests that the teachers spend more time trying to help those students who have a chance of passing.

Regarding the principal’s effectiveness in a vocational setting, the teachers said that the principal is effective in the vocational school because she is sensitive to the problems many of the students have at home. The teachers both emphasized that the principal has a special education background. As one teacher said, “She is well-versed in psychology and that helps students a great deal.” One teacher commented that the principal “gives the students a sense of reality that they will have to face in the world.” This teacher reported that the principal always compliments her on understanding and
helping the students. She stated, “The principal knows that I really enjoy the kids! I believe that she enjoys the kids through the teachers.”

Redesigning the Organization: School Culture and Decision-Making Structures

According to the principal of Vocational School B, she has redesigned the overall structure of the school to reflect one main underlying theme: the cultivation of student self-esteem. She spoke at length about her efforts to consistently refocus the vision of the school to strengthen what she calls a “feel-good-about-yourself” culture. The principal reported that approximately seventy percent of the students in the school are academically at risk and many are also Hispanic students who have difficulties with the English language. She also emphasized that many students have serious personal problems and difficulties at home. The principal stated,

Six of our students are pregnant and three already have babies. Several of our students have parents who are alcoholics. It is very hard for these students to concentrate on school when they have so many issues at home to deal with.

The principal believed that her ongoing strengthening of an atmosphere that centers on students feeling good about themselves, helps students to do better in school. Furthermore, she maintained that her nurturing a productive school culture in which students feel valued, results in more students in the school achieving passing scores on the HSPT.
The principal reported that at the beginning of each year, she attempts to revamp the structure of the school that supports the school culture of student self-esteem. I asked the principal how she does this. She responded by taking me on a brief walk to the front hall of the school building to show me what was on display. A large bulletin board entitled “Our Stars” was prominently displayed consisting of pictures of students, framed by stars, who had achieved at least a B average for the marking level. There were also signs in the hallway with slogans such as “Believe in Yourself,” and “Achieve.” I asked the principal how she felt the slogans and motivational phrases benefit the students. She responded by saying that the slogans and motivational phrases do help the students because “they shape a more positive atmosphere and they make the students feel special and good about themselves.” She also maintained that the posters were inspiring to the teachers, as well, because they are consistent with the shared beliefs and values shared within the school that all students have the potential to be successful. The principal reported that the halls are filled with other pictures of students, samples of student work, and student awards, which is the result of her ongoing effort to adjust the school structure to reflect the importance of student pride and self-esteem in the school.

The principal noted that because of her “strong foundation” which enables her to handle criticism and/or opposing views, she continually attempts to develop structures that encourage teachers to participate in decision-making in the school. According to the principal, participatory leadership is not possible if the principal’s foundation is weak. I asked the principal how she fosters the teachers’ participation in the decision-making process. She responded by saying that she constantly alters the teachers working
conditions so that they have collaborative planning time. For example, she told me that just recently she reviewed and revised the teachers' schedules so they would have more time to participate in group decision-making regarding the Special Review Assessment [an alternate form of the HSPT administered by teachers to 12th grade students] process. However, the principal recognized that, although she regularly sets up structures that support shared decision-making, most of the teachers in her school are simply not interested. According to the principal,

Although I continually redesign the structure of the school to encourage shared decision-making, many of the teachers simply are not interested in making decisions. They basically take my lead. If I emphasize something, they tend to emphasize the same things. It also depends on the personalities of the teachers. The teachers here are rather compliant.

Furthermore, the principal reported that she arranges monthly faculty meeting at which she encourages teachers to share ideas. Still and all, she believed that most of the teachers are not interested or willing to share their ideas.

The principal maintained, however, that there are a “handful of teachers” who are willing to share in the process of decision-making. The principal reported that the decision-making systems she designs meets the needs of these teachers. For example, the principal noted that she recently made adjustments in her own schedule so that she could meet several times with the mathematics and English teachers. The purpose of the meetings was to ask the teachers for their ideas and suggestions to create alternate ways of delivering remedial instruction to students when remedial “workshop” classes are
phased out. [The principal explained that because of the new high school graduation requirements, the schedule no longer will be able to accommodate supplemental remedial instruction].

When I spoke with the teachers in Vocational School B, they agreed with the principal’s contention concerning her ongoing support of a productive school culture that essentially revolves around making students feel good about themselves and raising their self-esteem. They agreed that the principal continually refocuses the school’s approaches for treating students with care and respect and instilling pride in them in regard to their vocational and academic success. One teacher said that although the principal appears to be formal and professional, she is also nurturing, like the head of a family. This teacher maintained that “the principal’s heart is in right place” because she continually reassesses the school’s cultural atmosphere to assure that students are taught self-respect and treated with dignity.

The teachers reported that although the principal always attempts to retune the atmosphere of the school so it will enhance student self-esteem, students nonetheless view the principal as serious. They contended that the principal has designed the school environment in such a way that students know that the principal “means business.” According to one teacher, “The principal sometimes intimidates the students and that is good. The office of the principal should mean something to kids!” This teacher gave the following example of the principal’s ongoing adjustment of the atmosphere in the school:
On one occasion, the students told the principal she was too serious. In response to the accusation and to show her “lighter” side, the principal arrived at school the next day wearing a Dr. Seuss hat!

The teacher believed that this “silly” incident is indicative of how the principal continually redefines and redesigns the school culture in response to the students’ needs.

Comprehensive High School B

Setting Directions

The principal of Comprehensive High School B stated that the most important thing to him is the success of each and every student. He said that he is a firm believer in doing the same for all “clients” in the school. The principal maintained that the good HSPT scores in his school do not happen by chance. He contended that students score high on the HSPT because he focuses on good instruction and is constantly making adjustments to the curriculum.

When I asked the principal about his mission in the school he responded, “My mission is very simple; that is to make every student successful.” He said, however, that there is not enough of a collective mission, as he would like. According to the principal, there is too much “managerial stuff” that he needs to do. Further, the principal said that he gets so involved in running the school that sometimes the mission is not as clear as it should be. Regarding goal setting, the principal said that one of his main goals is to stress the importance of computation, reading, and writing in all classes, including the shop areas. He explained that he gives shop teachers, as well as academic teachers, positive
reinforcement because students in the shop areas need to be able to read manuals and think critically. The principal said that things are different today in that there is a “coming together” of all subject areas. For example, many of the vocational-technical areas now require students to have the same critical thinking and problem solving skills as in the academic areas. He continued by saying that the uniting of academic and vocational areas is essential because the union adds credibility to the shop areas and adds to the self-worth of the students.

The principal believes that he helps teachers to think positively about the students. The principal said that he has high expectations for the students and they usually do not let him down. When I asked him if he speaks enthusiastically with teachers about raising student achievement on the HSPT, the principal said that he hopes he does. However, he pointed out that the academic supervisors generally are the ones who deal with HSPT issues directly. According to the principal, “I talk mostly about student achievement in general. I want kids here to succeed, and the message I give them is that they need to do well on the HSPT as part of their total package of success.”

The principal said that the entire staff is committed to basic skills instruction to help students prepare for the HSPT. He described the basic skills classes as separate from the regular classes and as generally consisting of no more than twelve students. When I asked the principal if he is personally involved in these classes, he responded that he is, but only to a limited extent. He said that he trusts his supervisors to identify students who need basic skills instruction in order to be successful on the HSPT.
The principal felt that his leadership communicates credibility and the seriousness of the HSPT to staff members. For example, the principal reported that he insists that teachers and students take the test seriously. He contended that he communicates the importance of the HSPT when, for example, he creates the testing schedules and assigns only the most reliable and conscientious teachers as test proctors and examiners. He also mentioned that he reminds the students to get enough rest and eat a good breakfast before the test. Giving parents an update regarding HSPT scores on back-to-school night was another example the principal gave of his overall commitment to the HSPT.

When I spoke to the teachers of Comprehensive High School B, they said that to accomplish the mission of success for every student in the school, the principal encourages all the staff members in the school to come together and accomplish it as a team. One teacher reported that the principal is a strong leader with “influential strength and confidence about his ability to run the school.” This teacher explained that what is most important to her, however, is that the principal “tempers strength with compassion.” According to her, the principal has stabilized the school.

The other teacher said that the principal is a “cheerleader,” and she believes that, because of the principal, all the teachers in the school work together collectively. When I asked her how the principal accomplishes this, she claimed that the principal is around and visible, “seeing everyone and making sure we have our minds on our goals.” This teacher felt that the principal’s physical presence is important and asserted, “His presence reminds us of why we are here and what our job is.”
I asked the teachers whether the principal helps them regarding the preparation of students for the HSPT. Both teachers maintained that the curriculum supervisor assists them with HSPT issues, not the principal. However, one teacher said that the principal makes her feel good about what she does in the classroom and that, therefore, she wants to please him. She stated, “I think the type of principal he is, gets me to do more in the long run, and in general.” This teacher also felt that the principal trusts that she is doing a good job in the classroom.

According to the teachers, the principal is truly concerned about the students’ learning. They spoke about the professional training on learning styles the principal conducted at a faculty meeting with the teachers. One teacher spoke at length about the loyalty she feels towards the principal. She said that she believes that the principal is sincere in his efforts to help the students and stated, “I think I work harder because I want to make the principal look good.”

Regarding goals, the teachers maintained that the principal emphasizes the importance of staff members all working together to achieve the school’s goals. According to the teachers, the principal has student success as an overall goal but has specific goals as well, such as raising mathematics scores on the HSPT by a certain percentage.

One teacher said that the principal is very concerned with teachers completing weekly plan books. She said that the principal personally looks at the teachers’ plan books and makes constructive comments in them. The other teacher said that the
principal regularly talks at faculty meetings about school goals and is open to suggestions about them.

The teachers both agreed that the principal expects certain things to be done and the teachers generally respond by doing these things because they feel "there is no choice." They emphasized that the principal is very enthusiastic and "upbeat" about everything. According to the teachers, the principal is supportive, encouraging, and enthusiastic about students performing well on the HSPT. Further, they said that the teachers all know that the principal wants the students to do well. One teacher contended that the principal is generally a "hands-off" person and does not make many demands. She contended, "As long as the students are taken care of and we are using proper methodology, he is not a stickler."

Both of the teachers believed that the principal has high expectations for the students. They spoke about the student assemblies that the principal usually conducts once a year. At these assemblies he reviews rules, regulations, and his expectations for the students. The teachers endorsed the principal's statement that he wants the students to do well academically so that they can be successful in life. Further, according to the teachers, for the principal doing well means doing well on everything, not just on tests.

Developing People

The principal of Comprehensive High School B maintained that his support of the teachers regarding the HSPT adds credibility to the test. The principal carefully clarified what he meant by support. He said,
What I do is more related to supporting their efforts. For example, I created a new section for basic skills classes. In other words, scheduling is something that I control and use to support classes which will help our students do well on the HSPT.”

The principal reported that he compliments teachers at staff meetings on the work they do. He stressed, however, that he commends all of the teachers at these meetings, not just the teachers directly involved in HSPT preparation. Regarding the HSPT, the principal emphasized that he values high passing rates in his school. The principal stated, “We all care about HSPT because the test scores go in the paper. HSPT scores in the paper can make us look either good or bad.” According to the principal, high passing rates more importantly confirm that teachers are effectively teaching and students are learning what they need to know according to state standards. Therefore, he explained that he tries to assist his teachers to believe in and make a commitment to students doing well on the test. The principal also said that because school finances are under his control, he supports the teachers by ordering instructional materials and supplies they need to prepare students for the HSPT.

I asked the principal whether he spends time coaching teachers in regard to ways to improve HSPT scores. The principal admitted that he really does not coach the teachers because that is the job of the academic supervisors. However, he maintained that he carefully looks over the teachers’ plan books to make sure that instruction regarding HSPT skills is reflected in their lesson plans.
When I asked the principal whether he believes that he motivates teachers to prepare students for the HSPT, the principal said that he believes he does. According to the principal, "They do more for me because of the support piece I told you about before. They have faith and trust in my leadership and I think they value my opinions. Faith, plus trust, plus support equals results!" The principal also said that he believes teachers will go out of their way for him because they know he would do the same for them.

I asked the principal how he expresses satisfaction to teachers when they meet his expectations regarding classroom instruction and achievement. The principal responded by saying that he feels strongly that it is important to praise teachers when they are doing a good job. To illustrate, he stated, "We have a wonderful science teacher here. Just the other day, I told her that I really liked what she was doing with the kids." The principal offered additional examples of his complimenting teachers. He said that he recently read a letter from a former student aloud at a faculty meeting, praising one particular teacher on the effect he had on this student. He also said that he sends letters of commendation to teachers, with copies to the superintendent, and makes announcements over the public announcement system commending teachers on their special efforts. The principal believed that he instills pride in the teachers when he compliments them and gives them his support.

The principal felt strongly that staff development is important, particularly for the purpose of training teachers to prepare students for the HSPT. I asked the principal whether he helps the teachers examine student achievement issues from different angles. The principal said that he consistently talks to teachers about assessment issues since all
schools are being held increasingly accountable by the Department of Education for student test scores. The principal said,

> For example, we look at the type of test the HSPT is in terms of format. We talk about types of multiple choice questions we can give kids on classroom tests that will help them prepare for the test. We talk about the use of portfolios to assess student achievement.

The principal also reported on two other areas in which he personally helps teachers examine student achievement issues. The first was the issue of midterm exams and their effectiveness; the second was learning styles and how students all learn in different ways. The principal remarked that he is always looking for ways to change things and make them better even when the current status appears to be fine.

The principal admitted that he is not fearful of problems that arise in his school. He maintained,

> One of the things I have learned over the years is that you cannot keep beating yourself up for not solving problems. I have learned to let that go. I am satisfied when I learn something each time a problem arises and when I can apply this to the next time.”

I asked the principal whether he instills pride in the teachers regarding raising HSPT scores. He responded by saying that he recognizes the students when they do well and he hopes this makes the teachers feel proud. Moreover, the principal felt that the teachers are proud to be associated with the school because the students are successful.
The teachers in Comprehensive High School B maintained that the principal is extremely supportive. One teacher reported that she is currently directing a school play and the principal is very supportive of her efforts. She said, “He listens attentively to me. I feel that what I say is meaningful to him.” Regarding the principal’s support, this teacher also reported that the principal regularly ends faculty meetings with an uplifting quote or a handout regarding the importance of the role of the teacher.

The teachers said that the principal regularly “tells the staff members how wonderful they are.” They both maintained that the principal wants the teachers to feel good, but noted that sometimes he overdoes it. The teachers believed that the principal does not have to compliment the teachers as much as he does. One of the teachers offered the following as an example of how the principal compliments them when they do something positive:

At a faculty meeting, the principal referred to me when he said, “Look at _____ . She writes the best objectives. If you need help, look at _____ ’s objectives.” I felt appreciated and recognized when the principal said that.

The other teacher also spoke about the support she receives from the principal. She said that the principal compliments her frequently and he makes her feel pride in the job she is doing. She said, “The principal makes me feel good about what I do in the classroom. It is a two way street. He tells me that I am doing a great job and says nice things to me. When I get a chance, I try to reciprocate and say nice things to him.”

Furthermore, according to this teacher, the principal also offers suggestions and says things to her such as, “Are you sure about this? … try this … do that.” Both teachers said
that the principal often gives them suggestions for improving procedures in her classroom.

I asked the teachers about the principal’s examination of student achievement issues from different angles. They said that the principal generally gives them good ideas on how to improve student performance in the classroom. For example, one teacher stated that the principal came into her classroom and suggested that the students speak up and interact more with one another.

One of the teachers described the principal as understated, friendly, and purposeful. She said that the principal is not a “schmoozer” and that he is genuinely concerned about the teachers and students in the school. This concern, according to the teacher, helps the principal to enlist teachers to cooperate with him. Regarding the HSPT, the teacher said the principal’s easy manner does not make the teachers “crazy or stressed” about the HSPT. She explained that generally the day before the HSPT is given, the principal makes an announcement about the test and tells the students to eat a good breakfast and arrive at school on time.

Regarding the principal’s organizational values, one teacher said that the principal is dynamic and is always trying out new ideas to constantly making improvements. Further, she said that the principal has not forgotten that he once was once a teacher and this makes the teachers feel that he is sincere in what he says. This teacher said that the principal holds a position in the principal’s association and is very active in this organization. She restated several times that she has great respect for the principal.
The other teacher felt that the principal's behavior is a reflection of the principal’s belief that there is always room for growth. According to this teacher, the principal’s message at the faculty meetings is that no one in the school should be complacent because there is always more to do and teachers, as well as students, can always improve.

Redesigning the Organization: School Culture and Decision-Making Structures

The principal of Comprehensive High School B said that he continually endeavors to create a productive school culture by fostering a comfortable learning atmosphere that welcomes both students and teachers. He maintained that he consistently tries to shape the school environment so that it is upbeat, cheerful, and positive. The principal recognized that his attitude and behavior reinforces with the teachers the cultural structure of the school. The principal stated, “My attitude permeates all the people I interact with. It affects them. If I am negative, the teachers are negative also.” Furthermore, the principal maintained that he regularly uses his sense of humor to refocus the school’s atmosphere from negative to positive when unfortunate events occur. For example, the principal stated, “I cannot walk around and focus on the bomb scare we had, for example. It is no good if you are negative all of the time. You must have a sense of humor.” The principal emphasized that he attempts to strengthen the positive school culture by encouraging people to be happy. He said, “I tell them that this is a job. Your family, your religion, and other things in your life are more important.”

The decorations in the principal’s office, which I observed during the interview, were testimony to the principal’s ongoing efforts to strengthen the school’s cultural
structure. The principal had many personal memorabilia, pictures, buttons, and trophies on display in his office. He enthusiastically brought these items to my attention and stated,

"Look at the bulletin board! These are the things that are important to me. Some of them have nothing to do with education. I feel that the bulletin board serves an important function as it symbolically helps our staff members to clarify the values and beliefs that are shared within this school.

The principal noted that by changing the items on the bulletin board once every few months he is able to, in effect, redesign the overall atmosphere of the school.

The principal maintained that his optimism and high expectations for both students and teachers clarifies the school’s vision that all students can succeed. He noted that particularly with preparation for the HSPT, he is always refining the school’s atmosphere so it will foster a positive test-taking attitude with the students. The principal stated,

"There has to be a belief and commitment to the test. I feel that I must make the test credible to our teachers so we are “teaching to the test” for the right reasons. It’s like the self-fulfilling prophecy -- if teachers believe that students will do well, they will focus on this and, in the end, students will do well.

The principal reported that he consistently adjusts structures in the school to support his sharing of decision-making power with the staff. He maintained that he uses
a participatory approach to engage the teachers and all other stakeholders in the decision-making process. According to the principal, “There are two variables in making a decision. First, the people that represent the group; and second, the knowledge the people have about making the decision.” The principal recognized that at the heart of decision-making in his school is his ongoing development of an atmosphere that supports students, teachers, and parents in effective problem solving.

I asked the principal how he develops an environment in the school for shared and effective decision-making. He responded that he first reassesses the needs of the school in regard to what issues need to be addressed. Then he creates structures for staff development concerning assessment issues like the HSPT, for example. He stated, “Teachers need to know and understand about the test -- what is on the test, etc.” The principal said that he personally arranged for the English and mathematics teachers to attend HSPT workshops. The purpose of the workshops was for teachers to become more familiar with the format of the HSPT and to plan new instructional strategies to address items on the test.

The teachers in Comprehensive High School B corroborated the principal’s contention that he reinforces an overall positive culture in the school. They reported that the staff members are all very close to one another because there is a small staff population (approximately 60) and, more importantly, because the principal fosters and encourages a collegial atmosphere in the school. According to the teachers, the staff members all work well together and there are no cliques or factions. One teacher noted that the principal is very spiritual, as the principal himself had said. This teacher
maintained that the principal has created an atmosphere in the school that values and promotes the importance of family, religion, and personal happiness for the staff as well as for the students.

Both of the teachers agreed that the principal regularly designs structures to support and encourage shared decision-making in the school. They corroborated the principal’s statement that, in response to the changing needs of the students, he continually redesigns workshops in which teachers are trained to make decisions and plan strategies to prepare students for the HSPT. One teacher explicitly emphasized that the principal took the opinions of the teachers into account when the curriculum committee rewrote the English and mathematics curricula last year to align with the new state standards.

The teachers also reported that an integral part of the decision-making structure the principal has designed is the distribution to supervisors of the responsibility for HSPT preparation. For example, they said that the principal requests that the academic supervisors work with teachers regarding the reading/writing and mathematics sections of the HSPT. According to the teachers, the supervisors talk specifically with them about their lessons and instruction in the classroom related to test preparation. One teacher maintained that specific information about the HSPT comes mainly from the academic supervisor, not the principal. She said that the supervisor gives her direction about the HSPT by giving her information about the rules, test security, and procedures. Moreover, the teachers contended that the principal generally asks the supervisors to discuss the specifics of the HSPT with staff members at faculty meetings.
Summary

This chapter presented interviews with two vocational and two comprehensive high school principals as well as one English and one mathematics teacher from each of four schools. The purpose of the twelve interviews was to provide descriptive examples of transformational leadership behaviors of principals as reported by both principal and teachers. Overall, the teachers corroborated the reports of the principals about their transformational leadership regarding the HSPT.

The principals demonstrate their leadership behaviors by providing an overall sense of purpose to staff members, establishing goals of student success, and demonstrating high performance expectations of their teachers and students. The principals also demonstrate these leadership behaviors by developing their teachers with instructional and moral support, helping them examine student achievement and assessment issues, and leading by example by being good role models. Finally, the principals exhibit these behaviors by continually refocusing their efforts on creating a school atmosphere that reinforces student self-esteem and shared decision-making structures.

Specific to the vocational principals are transformational leadership practices that, for the most part, target meeting the challenges of academically “at-risk” students. Vocational principals facilitate alliances between the academic and vocational teachers in order to strengthen the school’s vision of all teachers working together for student success. By setting realistic academic and vocational goals for their students, the
principals help them find future employment in the workplace. The principals model exemplary behavior by personally participating in vocational and community activities. Finally, by continually reshaping their schools to cultivate a student-focused culture, the vocational principals support student pride, dignity, and self-respect.
CHAPTER VI
SUMMARY, DISCUSSION, AND IMPLICATIONS

Introduction

This study examined, through quantitative and qualitative methods, the influence of principal transformational leadership and other selected variables on HSPT passing rates in vocational and comprehensive high schools. The first five chapters presented the significance of the problem, reviewed the related literature, described the method of collecting and analyzing the quantitative and qualitative data, and presented the statistical findings and interviews. This chapter summarizes the findings of both the quantitative and qualitative research, discusses the implications of those findings, presents limitations of the study, and offers conclusions and recommendations for future practice and research.

Summary of Findings

Quantitative Findings

The quantitative portion of this study consisted of four related regression models, based on the following one final generic model:
HSPT\textsubscript{i} = \beta_0 + \beta_{i1}\text{TrLS}\textsubscript{j} + \beta_{i2}\text{ATT}\textsubscript{j} + \beta_{i3}\text{FRL}\textsubscript{j} + \beta_{i4}(\text{TrLS})V\textsubscript{j} + \varepsilon_{ij}

i = 1 \text{ if reading test}
2 \text{ if mathematics test}
3 \text{ if writing test}
4 \text{ if all sections combined (reading, mathematics, writing)}

j = 1, 2, ..., 57 school.

In this final model, the unknown coefficients, \( \beta_k \) (\( i = \text{reading, mathematics, writing, and all sections combined} \); \( k = 1, ..., 4 \)) are the weights for each of the four independent variables in the model. That is to say, they show the importance of each variable in determining passing rates. There is also a constant term in the model, \( \beta_0 \), which is the mathematical intercept of the equation (see Chapter 3 for further clarification of terms in the regression model).

\( \text{TrLS} \) is the principal transformational leadership variable, \( \text{ATT} \) is the attendance rate variable, and \( \text{FRL} \) is the percentage of free/reduced lunch eligibility variable. (\( \text{TrLS} \))\( V \) is the leadership interaction variable, which consists of the interaction of the transformational leadership score and school-type (vocational or comprehensive). The last variable, \( \varepsilon_{ij} \), is a random disturbance (for school \( i \), test \( j \)) that was added to the model to capture the unknown and unmeasurable factors affecting passing rates. The researcher used the regression models to examine the influence of principal transformational leadership and other selected variables on HSPT passing rates in vocational and comprehensive high schools.
The results of the quantitative component of this study, based on principal scores on the Multifactor Leadership Questionnaire, provided strong statistical evidence that principal transformational leadership significantly affects HSPT passing rates in the reading section, mathematics section, writing section, and all sections combined of the HSPT. This finding corroborates the evidence from existing research (Koh, 1990; Silins, 1992; Cantanyag, 1995; Leithwood, Jantzi, & Steinbach, 1999), which shows that transformational leadership has a positive effect on student achievement. The strongest relationship between transformational leadership and HSPT passing rate was for all sections combined (that is, passing all three sections—reading, mathematics, and writing). The relationship was significantly less for the reading section, followed by the writing section, and the mathematics section. These results strongly suggest that a school having a principal with a high transformational score would be likely to achieve higher HSPT passing rates, particularly on all three sections of the HSPT combined rather than any one section alone.

Further, this research provides strong evidence that transformational leadership is actually more complex than what some students of educational leadership may believe. That is, transformational leadership is more than those behaviors categorized by Bass and Avolio as idealized influence, inspirational motivation, intellectual stimulation, and individualized consideration. By adjusting Bass and Avolio’s method of scoring the MLQ and conforming to Leithwood’s transformational leadership model, I created a new and unique transformational leadership scale which I used to define transformational leadership in the regression model (see Chapter 3 for clarification on development of the
transformational leadership scale). The statistical results of this study, which are based on my definition of transformational leadership, strongly suggest that transformational leadership, unlike what others have previously purported, is indeed a mix of Bass and Avolio's transformational behaviors and some of their transactional behaviors.

In addition, the findings showed that a principal's transformational leadership has a differential effect in vocational schools compared to comprehensive high schools. That is to say, to achieve the same HSPT passing rates for the reading section, mathematics section, writing section, and all sections combined, stronger transformational leadership is needed in vocational high schools compared to comprehensive high schools. This differentiated effect of principal transformational leadership in vocational schools was most significant for HSPT passing rates for all sections combined, followed by the writing section, the reading section, and the mathematics section.

The statistical analysis provided strong evidence that higher attendance rates result in higher HSPT passing rates. The relationship was equally significant for the reading section, the mathematics section, the writing section, and all sections combined of the HSPT. Furthermore, the study revealed that a higher percentage of students eligible for free/reduced lunch results in lower HSPT passing rates on the reading section, mathematics section, writing section, and all sections combined. The strongest relationship between eligibility for free/reduced lunch and HSPT passing rates was for the reading section, followed by all sections combined, the mathematics section, and the writing section.
Finally, the statistical analyses unexpectedly showed that the variables labeled as enrollment size and mobility rate had no significant effect on HSPT passing rates in the reading section, mathematics section, writing section, and all sections combined. Consequently, the enrollment size and mobility rate variables were eventually eliminated from the final regression model indicated at this beginning of this section.

Qualitative Findings

The qualitative findings consist of interviews of four principals (two vocational and two comprehensive) and an English and mathematics teacher of each principal, for a total of twelve interviews. In general, the teachers corroborated the principals' claims and reports.

The findings from these interviews provide evidence of transformational leadership behaviors of principals in comprehensive and vocational high schools. These behaviors exemplify principal behaviors that may in fact be responsible for producing the data that the study showed to statistically exist. The following three dimensions of Leithwood's (1994) Transformational School Leadership Model summarize the qualitative findings:

1. Setting Directions
2. Developing People
1. Setting Directions

The transformational leadership practices of the comprehensive and vocational principals in this study contribute to building a school vision, establishing school goals, and demonstrating high performance expectations in their schools. Regarding student achievement, the data show that the principals are confident in their judgments and that they provide an overall sense of purpose to the staff members. The principals are guides who coordinate what has to be done in their schools and make the staff members feel they are working together as a team. Student success is the overall goal of the principals. Further, the principals demonstrate an unflagging commitment to the success of their students. In regard to their staff members, the principals express confidence in their abilities to prepare students for the HSPT, regularly giving them positive reinforcement, and having faith and trust in their decisions and expertise as professionals.

Vocational principals devise innovative instructional programs to help their large populations of academically at-risk students succeed academically, specifically on the HSPT. Helping their students to find employment in the workplace after they graduate is the basic vision of the vocational principals. Their main goal is to meet the challenge of the vocational student by setting realistic academic and vocational goals so that their students will remain in school and graduate with a diploma. The principals also meet the challenge of the vocational student by providing emotional support and by bolstering their self-esteem to “bring out the best” in them. The vocational principals communicate their visions of student success by instilling pride in their students and teachers. Most importantly, they are proud when “low-achieving students” do well on the HSPT.
2. Developing People

The transformational practices of the comprehensive and vocational principals in this study contribute to offering individualized support, providing intellectual stimulation, and modeling best practices and important organizational values. The principals support the teachers by personally encouraging and caring for them and by providing instructional resources for their classrooms. Overall, the principals are instrumental in helping the teachers examine professional issues in a variety of ways, particularly those issues concerning classroom instruction and teaching styles. They help teachers examine student achievement and assessment issues that occur in the classroom by introducing new educational philosophies to the school. Most of all, the principals lead by example and are good role models. They are generally community minded and actively participate in community events and educational organizations. The principals model a high level of enthusiasm and a willingness to be involved in school activities and special events.

The vocational principals schedule teachers to have more time for preparation and professional development because of the academically at-risk nature of the population of students in the school. They are very supportive of the teachers regarding the preparation of the students for the HSPT. The vocational principals model exemplary behavior to the staff members by personally being involved in vocationally related competitions, trips, and activities. They obtain additional funding for instructional materials and supplies to help remedial students do better on the HSPT. Moreover, the vocational principals take a personal interest in the students in their schools and are sensitive to the personal problems
many of the vocational students have. The vocational principals are generally adept at addressing the psychological and emotional problems of the students.

3. Redesigning the Organization: School Culture and Decision-Making Structures

The transformational practices of comprehensive and vocational principals in this study contribute to creating and strengthening a productive school culture and developing structures to foster participation in school decisions. The principals create a culture in the school that is grounded in parent and teacher involvement, and focuses on an overall pride in student achievement. The principals essentially and continually reshape the schools to cultivate student self-esteem within a student-focused culture. Their behavior continually strengthens the school's culture so that it is consistent with the fundamental values and beliefs of the school. In addition, the principals delegate responsibilities to teachers and other staff members by encouraging them to be active in the decision-making process. When formulating policies for the school, they gather input from a variety of stakeholders, such as parents, students, teachers, and community members. Overall, the principals share decision-making power with their staff members by being good listeners, being open to suggestions, and having faith and trust in the teachers' decisions and expertise.

The vocational principals continually attempt to integrate new teachers into the schools who share their commitment to student achievement in a vocational setting. They constantly reinforce the strong vocational culture of the schools by creating atmospheres that students need to succeed both vocationally and academically. The vocational
principals regularly refocus their efforts of educating students for employment through academic achievement. The vocational principals create environments in their schools that are “student focused” so that students are treated with care and respect. Fostering a nurturing atmosphere of student self-esteem in which students feel valued and good about themselves is critically important to the vocational principals. The vocational principals develop and maintain a productive vocational culture by their ongoing involvement in community activities and their personal participation in vocational events and awards ceremonies. As with comprehensive principals, vocational principals delegate responsibilities to teachers and staff members not as a way of avoiding responsibility, but as a way of promoting shared decision-making in the school.

Discussion

Transformational Leadership and HSPT Passing Rates

The quantitative data of this study support the conclusion that the transformational leadership of vocational and comprehensive high school principals has a significant positive effect on HSPT passing rates in the reading section, mathematics section, writing section, and all sections combined. The study’s qualitative data provide additional support for this statement by offering descriptive accounts of transformational practices of principals that perhaps are responsible for the principals’ significant positive influence on HSPT passing rates as statistically shown. Even though the findings do not identify
specific transformational leadership behaviors with higher HSPT passing rates, one thing is certain: the overall transformational leadership style of the principal does matter. Transformational leadership of the principal matters because it provides staff members with the direction, support, and educational environment they need to help students achieve academic success.

The results suggest that transformational principals are effective because they are leaders, not managers. My interviews and conversations with teachers and principals revealed that principals do a great deal more in their schools than simply respond to a host of tasks they face on a daily basis. The principals’ practices in this study far surpass what Leithwood and his colleagues (1999) considered to be managerial leadership, which “assumes that the focus of leaders ought to be on functions, tasks, or behaviors, and if these functions are carried out competently the work of others in the organization will be facilitated” (p.14). In contrast to being managers, the principals in this study are transformational leaders. That is to say, each principal leads the school and the students to HSPT success by acting, as one teacher aptly reported, as a “one-man band.” The principals do this by setting directions with visions, goals and high expectations and by developing teachers instructionally, with sensitivity to their feelings and emotions. In addition, they continually refocus their efforts on maintaining atmospheres and decision-making structures that are consistent with student-focused beliefs and values shared within the school.

The fact that this study shows that principals are effective because they are leaders, rather than managers, raises an important issue. The issue relates to what the role
of the principal is today and, perhaps, what it should be in light of the fact that principals are held highly accountable for student achievement. Generally speaking, today’s concept of the role of the principal is that of a building manager. First, boards of education typically hire principals based on the quality of their managerial and administrative skills. They value the principal’s role as manager of school-related activities such as planning, budgeting, scheduling, meeting with teachers and parents, evaluating staff members, and maintaining order in the building. Second, graduate classes in educational administration typically prepare students to become principals by teaching them the value of managerial skills. Educational administration classes essentially teach students to be school “administrators” whose primary role is to manage the school. Third, most principals perceive their own roles to primarily be that of managers and they take pride in their abilities to manage their schools well. Perhaps principals emphasize their managerial roles because they do not want to, or have been told not to, take the leadership role away from their superintendents. The point here is that perhaps boards of education, graduate schools of education, and principals themselves should recognize that managing a school well is simply not enough today to raise student achievement in schools. Principals, instead of being building managers, need to be educated to be and need to be expected to act as, transformational leaders -- dynamic, inspiring and supportive educators who are focused almost exclusively on raising student achievement.

The results of this study point to the fact that boards of education, in their efforts to raise student test scores, should consider hiring principals who not only will be good managers, but who can inspire and motivate staff members, as well. Knowing that
transformation leadership is important to student success on the HSPT, school districts could ask questions about leadership qualities to candidates for principal positions so as to identify those who have the most potential to act as transformational leaders. Indeed, in light of the recognized drop in applications for advertised principalships, the hiring of school administrators has become a challenging process for boards of education. The creation of a transformational leadership profile would help to match desirable leadership traits of the candidates to those desired by the board of education and the superintendent. In addition, candidates for a position as principal would benefit in that they could be informed about their leadership qualities and given the opportunity to reflect and improve on these qualities.

Going further, schools of education and professional organizations should teach aspiring principals not only about the logistics of running a school, but the need and approaches for developing a vision of school leadership. Finally, principals themselves should embrace the qualities of transformational leadership as leadership traits that are important to student success. In like manner, school districts, in their inservice development programs, would do well to provide existing principals with training in transformational leadership. This would be in keeping with the New Jersey Department of Education's commitment to professional development as one of the main components of systemic reform in New Jersey (New Jersey Department of Education, 1999). School districts would reap the benefits of higher passing rates on the HSPT by transforming principals into leaders who can potentially affect academic success in their schools.

With the quest to improve student achievement in American education today, the
results of this study raise concern as to the value of fostering instructional leadership at the principal level. The principals in this study generally do not conceive of themselves and do not act as technical instructional leaders. Instead, the principals rely on their building subject matter supervisors to address content specific (for example, reading, mathematics, and writing) HSPT issues with the teachers in their charge. Both the teachers and principals who were interviewed agreed that the curriculum supervisors, not the principals, are responsible for preparing students for the HSPT through their ongoing interactions with teachers in regard to subject matter, instructional classroom strategies, and test-taking skills.

The fact that the principals interviewed in this study do not conceive of themselves nor act as instructional leaders is contrary to the current opinions of Ferrandino and Tirozzi, who are the Executive Directors of the National Association of Elementary Schools Principals and the National Association of Secondary School Principals, respectively. Although the directors recognize that principals have a wide variety of responsibilities and tasks in schools today, they nonetheless emphasize the principal’s role as an instructional leader. Indeed, Ferrandino and Tirozzi stated, “We believe there’s a great need for the public to understand that the principal of today’s schools is an instructional leader” (Principals’ Perspective, 2001, p. 6).

However, the principals interviewed in this study downplay their roles as instructional leaders, concurring with what most textbooks say about the role of the principal. Textbooks generally define the principal’s role as very diverse and complex (see Hoy & Miskel, 2001, for example). They say that although instructional leadership
is a part of being an effective principal, it is just one of many necessary components.

Indeed, the principals interviewed for this study are generally not involved in specific instructional matters in their schools. Rather, as transformational leaders, they distribute the responsibility of instructional leadership to the curriculum supervisors by empowering them to manage and have control over HSPT preparation in the areas of reading, writing, and mathematics. The findings of this study show that despite the fact that principals are not directly involved in instruction, their leadership nonetheless significantly influences HSPT scores. It is legitimate, then, to say that principals do not have to be direct or technical instructional leaders to be effective.

Overall, the findings in this study cast doubt on the adequacy of the concept of principals as managerial and instructional leaders. The key question is, then: What is the role of effective principals? The quantitative findings and the results of the interviews answer this question. First, the statistical data show that the transformational leadership of the principal is strongly related to HSPT passing rate for all sections combined (that is, passing all three sections-- reading, mathematics, and writing). In other words, principals who are transformational are likely to influence students passing the HSPT as a whole. Second, the interviews reveal that the principals in this study are more like “cheerleaders” for the overall HSPT rather than coaches for the individual reading, mathematics, or writing section. The principals’ practices suggest that they affect students on all sections of the HSPT, not by influencing instruction in the individual subject areas, but rather by exhibiting overall transformational behaviors. These behaviors inspire, motivate, psychologically support, and intellectually stimulate both students and teachers in the
school. Most importantly, however, the behaviors of the principals maintain school cultures that emphasize and support the importance of student self-esteem achieved through academic success.

The principal’s role in raising student self-esteem to help students achieve better scores on the HSPT is an underlying theme in all of the interviews. Indeed, two out of the four principals I interviewed have special education backgrounds. They both emphasized that their psychological training help them to better understand and meet the emotional needs of their students. Thus, the answer to the question of what is the role of an effective principal is obvious. The role of an effective principal has little to do with building management, budget control, or matters related to curriculum and instruction. Rather, the role of an effective principal has more to do with dealing with emotions, raising self-esteem, acting as a psychologist, and being an overall “cheerleader” for the school. Transformational leaders raise the human spirit. It is essential for schools to recognize that without transformational principals at the helm, larger efforts to improve student achievement might well fail.

In today’s schools, the emphasis on high stakes testing and accountability underscores the need for teachers, as well as principals, to have high student achievement and success as their goal. The results of this study point to the fact that transformational principals make their personal goals and the goals of their teachers one of the same. Furthermore, in line with what Kuhnert and Lewis (1987) said about transformational leaders in general, transformational principals enable their teachers to transcend their own personal needs for the good of the school. My interviews are replete with examples of
principals enabling teachers to alter their goals so that the teachers are performing at maximum levels for the good of the school. For example, one principal revealed that she is able to motivate teachers to embrace her goals by taking “a step back and letting people see the success and excitement of things; then they eventually want to be involved on their own.”

Today’s organizations attain optimal leadership when the leaders’ goals are transformed into the goals of the followers and consequently the followers become leaders in their own right. In schools, transformational principals achieve this ideal level of leadership. They influence teachers to personally adopt their visions and goals as their own and, in the process, “transform” teachers into leaders in their own right. It is because of the shared decision-making structures that transformational principals maintain in their schools that teachers have the potential to become leaders in their schools. Transformational principals enable teachers to manage their own decision-making committees. They take teachers’ opinions into account when they make important decisions. Finally, the principals alter the teachers’ working conditions so the teachers can plan and collaborate with other staff members on school-related matters.

The current standards-based reform movement in New Jersey has professional development of teachers as one of its centerpieces of systemic reform. Indeed, educators throughout the country recognize that good teachers are a key component to raising standards and overall student success in schools. The data from this study strongly suggest that teachers working with transformational principals work at high levels to
prepare students for the HSPT, not because it is simply their job to do so, but rather because they have embraced the principal’s goals and visions as their own.

Schools need to recognize that the work teachers do with transformational principals is, in of itself, a form of professional development. As teachers work with transformational principals they are essentially being trained, supported, and motivated to have the same exemplary goals, directions, and values as the principals in the raising of student achievement. The teachers, in turn, lead other staff members in the school to create student academic success with the same visions and beliefs as the principal. Thus, the results of this study point to another, less obvious role of an effective principal. That is, effective principals are teacher trainers. Perhaps schools should recognize and value transformational principals as providers of professional development, which can contribute to their overall effort toward systemic reform. Certainly, if schools view teachers as potential leaders in regard to raising student achievement, particularly on high stakes tests such as the HSPT, they need transformational principals.

Thus, this study shows that the principals’ individualized support to teachers is paramount in fostering teacher commitment to the overall HSPT goals of the school. More specifically, the interviews show the presence of a plethora of principal practices which Avolio and Bass categorized as “contingent reward” behaviors. Avolio and Bass (1988), defined contingent reward behaviors as “frequently telling subordinates what to do to achieve a desired reward for their efforts”(p. 35). Furthermore, they maintained that contingent reward behaviors are transactional, that is, non-transformational. The interviews I had with teachers and principals indicate that principals who were identified
as transformational regularly demonstrate contingent reward behaviors as they 
consistently “reward” teachers for their efforts in helping students do well on the HSPT. 
Therefore, teachers and principals in this study would not agree with Avolio and Bass’s 
contention that contingent reward behaviors are transactional and not part of 
transformational behavior. The multitude of instances in which teachers and principals 
reported principals exhibiting contingent reward behaviors confirms what Leithwood and 
his colleagues (1999) suspected to be true in their studies of transformational leadership 
in schools; that is, contingent reward leadership practices are to be considered as 
transformational.

**Transformational Leadership in Vocational and Comprehensive High Schools**

The quantitative data of this study show that a given quantity of transformational 
leadership of principals has less of an effect on HSPT passing rates in vocational schools 
compared to comprehensive high schools. In other words, compared to principals in 
comprehensive high schools, principals in vocational schools need to be stronger 
transformational leaders to achieve the same passing rates on the HSPT. Further, this 
differentiated effect is most significant for passing rates on the HSPT for all sections 
combined, followed by the writing section, the reading section, and then by the 
mathematics section. Simply stated, vocational principals need to work harder than 
comprehensive principals to meet the challenging needs of their students in regard to 
passing the HSPT.

My interviews and conversations with four teachers and two principals in
vocational schools support the statistical findings by revealing the challenging nature of vocational students. First, the interviews clearly support the contention that students who attend vocational schools are typically low-achievers and academically at-risk. Second, the teachers and principals agreed that generally these students are attending vocational schools because they cannot, or in many cases are unwilling to, succeed in comprehensive high schools. Third, the fact that vocational students are typically lacking in pride, dignity, and self-esteem are underscored in the interviews. Finally, the interviews show that many vocational students are products of lifetimes of failure rather than success and they generally have little confidence in themselves.

The findings of this study are not surprising considering that studies have shown that vocational students are typically academically and economically at risk. For example, a 1994 report to Congress by the U.S. Department of Education found the population of low-achieving and disabled students in vocational schools to be on the rise (Boesel & McFarland, 1994). In addition, according to a 1996 study conducted by the National Center for Educational Statistics, a higher percentage of four specific types of students choose vocational tracks than does the student population as a whole. The four types are those who have a low grade-point average, take many remedial courses, come from poor families, and have a disability (p. 6). Therefore, educators do rightly expect vocational students to have more difficulty than students in comprehensive schools in passing the HSPT.

The results of this study concur with today’s general concept of vocational high schools. Although vocational schools are attempting to change their negative image by
renaming their schools “career academies” and “high technology high schools,” the fact is
that most vocational schools today are still comprised of students who are unable to
succeed in college preparatory programs within comprehensive high schools. Currently,
vocational schools continue to be a “dumping ground” (Grubb, 1994, p. 29) for students
who cannot perform adequately in academic classes. Furthermore, principals of
vocational schools have the task of educating students who, for the most part, have
histories of failure, and yet must pass tests such as the HSPT if they wish to graduate
from a high school. The findings of this study show that principals of vocational schools
do, indeed, face a challenge that is unique to those in vocational education.

The public may accept the perception that vocational students are troubled low­
achievers who essentially are not capable or unwilling to succeed in school. However,
the results of this study suggest that this perception simply may not be true. It is true that
vocational students are generally less academically inclined than students in
comprehensive high schools and a majority of the students are considered by their schools
to be “at risk.” Indeed, interviews with the teachers and principals reveal that many of
these students act in a defensive, unfavorable manner. In any case, the vocational high
school principals in this study reject the common perception of the public about their
students. The interviews with the vocational high school educators show that the
transformational vocational principals view the unfavorable behaviors of vocational
students as a facade. Both the vocational principals and teachers agreed that what appears
to be undesirable behavior may, in actuality, be a cover-up for the insecurity vocational
students feel in a world in which they believe they cannot succeed.
Thus, this study shows that vocational students are unique in that they are in need of special attention as well as extra academic and emotional support. The interviews show that vocational educators perceive their students as essentially lacking in confidence, self-esteem, and self-respect. This emotional void may be responsible for the students’ lack of success in school as well as the pretense that they simply do not care. The interviews reveal transformation leadership behaviors of vocational principals that, perhaps, satisfy the exceptional needs of vocational students. The interviews suggest that many of the principals’ transformational behaviors intend to offset the students’ lack of self-esteem, self-respect, and dignity so that the students achieve passing rates on the HSPT. The principals’ transformational behaviors fill the emotional void of their students by strengthening a student-focused culture that centers on reinforcing student self-esteem, making students feel cared for, and providing students with skills and programmatic opportunities to achieve success.

According to Coleman (1987), students’ lack of “social capital,” caused by deficiencies in the home and community, may be responsible for their low academic performance, social instability, and problematic behavior. Perhaps, vocational principals recognize that their students are lacking the social capital that they need to succeed in school. If that is true, vocational principals have a double task. That is, they must not only meet the educational goal of having students pass the HSPT, but they must also provide their students with the additional, needed “social capital.” Therefore, as the findings of this study strongly suggest, vocational principals need to work harder than principals in comprehensive schools for their students to succeed. They need to work
harder, however, not necessarily to foster academic or shop-related achievement, but rather to facilitate student self-esteem, self-respect, and a sense of dignity as both a cause and an effect of success in school. In short, the transformational behaviors of vocational principals should be heavily weighted toward creating, as one principal labeled it, a “feel-good about-yourself” culture.

Thus, the role of the effective vocational principal is very similar, in a sense, to the role of a social worker or a psychologist. This study shows that vocational students do best when their principals bolster their self-esteem, when their principals are aware of and address their emotional needs, and when their principals personally commit themselves to helping students achieve some degree of success in school and in life, in general. Therefore, vocational schools today need to recognize that they are unique in two basic ways. First and most obvious, they are unique because of their emphasis on student future employment in the workplace through a career-related curriculum. Second, and perhaps less obvious, they are unique because their schools require principal leadership that is highly transformational particularly in regard to satisfying the emotional and social needs of the students.

Currently vocational schools are struggling to survive within a systemic reform movement that holds them to the same high standards as comprehensive high schools. Along with having their students fulfill career major requirements, vocational schools must also ensure that their students fulfill the same graduation requirements as comprehensive schools, including passing the HSPT. In addition, despite the disproportionate number of at-risk student in their student population, vocational schools
are held to the same high accountability standards as comprehensive high schools. One of the ways vocational schools have traditionally met these challenges is to institute supplemental remedial programs to raise the achievement level of their students. However, with the increased number of graduation requirements, it has become increasingly difficult for vocational schools to find time in their existing schedules for these programs.

If vocational schools are to continue to exist as viable alternates for students who are interested in career training, they must consider alternate ways of raising the achievement levels of their academically and socially at-risk students. The question is: How can vocational schools, within the existing parameters of state standards and requirements, effectively raise student achievement? One primary answer is that vocational schools need principals who are highly transformational. Furthermore, because of their distinctive demands and characteristics, vocational schools need principals who are much more transformational than principals of comprehensive schools.

The results of this study suggest that to significantly affect student achievement, both vocational and comprehensive high schools should hire and retain principals who have transformational qualities. However, the results also indicate that the concern about hiring the correct principal should be raised a notch for vocational schools. Although credentials are a necessity for the employment of any school administrator, vocational schools should look above and beyond the official bureaucratic credentials when considering their candidates for the principalship. Standard credentials as the criteria for
hiring the principal of a vocation school simply will not do. Instead, along with proper certification, it is vital for vocational schools to seek out principals based on their personalities and how well they interact with vocational students, who are different from students who attend comprehensive schools.

Furthermore, vocational schools should consider employing principals who have backgrounds in special education. Many students in vocational high schools are not officially classified as special education, yet they possess many of the same learning difficulties, emotional problems, and self-esteem issues as students who are classified. In this study, one of the vocational principals has a background in special education. It was clear from the interviews that her background heightens her sensitivity to the emotional and social needs of her students. In addition, her training in special education enables her to address problems in regard to the learning problems of many of her students.

Finally, graduate schools of education offer general educational administration programs to fit all aspiring principals, including vocational principals. The courses for aspiring principals address the standard educational issues facing all administrators, such as funding sources, facilities, and career-related coursework. However, they do not address the subtler, yet critically important issues associated with the transformational personality of the vocational principal. The courses, in their effort to speak to issues concerning the logistics of managing schools, fail to recognize the importance of principal leadership as it relates to meeting the needs of academically and emotionally at-risk students. Thus, graduate schools of education need to rethink and revise their vocational curricula. The new curricula ought to include courses that sensitize aspiring
principals to the fact that the needs of vocational students far outweigh the needs of students in comprehensive high schools.

**Student Attendance Rate and HSPT Passing Rates**

The quantitative findings show that the variable labeled student attendance rate (the average percentage of students each day in the school) has a strong positive effect on HSPT passing rates in the reading section, mathematics section, writing section, and all sections combined. The findings are not surprising as they are consistent with existing research (for example, Louisiana Department of Educational Accountability, 1994; Franklin & Crone, 1992; Bobbett, French, & Achilles, 1993; Strickland, 1998) that shows that attendance is a significant factor for student achievement.

The findings of this study essentially confirm what educators have always believed to be true about student attendance; that is, for students to be proficient in reading, mathematics, and writing they, quite simply, have to be present in school. The results underscore the critical importance of students' attending school on a regular basis because they show attendance rate to be highly and consistently significant to HSPT passing rates. Furthermore, the findings strongly suggest that regular student attendance is vital to schools in their efforts to attain high passing rates on the HSPT. One question is: Why is it so important for students to be in school on a regular basis? Is it their mere physical presence in school everyday that enables them to attain higher achievement? Or, perhaps does their regular attendance in school mean something more?
These questions can be answered in part by a closer examination of attendance rate in regard to the relationship it may have with student achievement. That is to say, a high attendance rate in a school suggests that students are more than likely being instructed by the same teachers, with the same instruction, in a consistent manner, over a consistent period of time. It is legitimate to say that when students have stability and consistency in their instruction, they do better in school. For example, mathematical, reading, and writing skills build on one another in a way that requires practice, repetition, and daily application for true mastery. Students who regularly attend mathematics and English classes, taught by the same teachers, for the entire school year have a greater chance of learning the instructional material than students who are consistently absent. Continuity of instruction, although it does not necessarily guarantee high performance, does maximize students’ potential to succeed academically. Therefore, high student attendance rates in schools are more significant than they appear to be at first glance. Students attending school on a regular basis, are receiving consistency and stability of instruction. It is the regularity and continuity of instruction that perhaps is responsible for students achieving high passing rates on the HSPT.

 Indeed, principals in this study were quick to point out that they recognized how important attendance is to student success, particularly on the HSPT. Although the questions I posed to principals and teachers in the interviews were not specifically targeted to the issue of attendance, there was an underlying theme in the interviewees’ responses in regard to the importance of student attendance to academic success. For example, each of the principals reported that, student attendance is critical during the few
weeks prior to the administration of the HSPT when intense test-preparation for the HSPT occurs. The interviews revealed that the principals emphasize the importance of student attendance, particularly “right before the test.”

Furthermore, the principals’ overall efforts to build a culture of student self-esteem appears to be a way of encouraging and motivating students to attend school on a daily basis. According to the principals, making their students feel important, self-confident, and “cared for” is the most effective way to motivate the students to attend school every day. One vocational principal reported that he considered his school a welcome haven for many of his students who have problems at home. This principal emphasized that he is highly and personally committed to making his students feel special, particularly so they will attend school every day.

Schools need to recognize the importance of student attendance to overall student achievement in schools. Particularly in their struggle to achieve high passing rates on the HSPT, both comprehensive and vocational schools should adopt strategies to provide significant incentives for students to attend school on a regular basis. Certificates for excellent attendance, monetary or material rewards for attending school for a consistent period of time, and perhaps the principal greeting students individually as they enter the school everyday are a few examples of tactics schools could use to motivate students to attend on a regular basis. If principals make their schools “a home away from home” for their students, they are likely to create an environment that will not only inspire students to attend school every day, but will eventually raise overall academic achievement.
Free/Reduced Lunch Eligibility and HSPT Passing Rates

The quantitative findings show that the variable labeled free/reduced lunch eligibility (the percentage of students eligible for free/reduced lunch based on State of New Jersey income eligibility guidelines) has a significant negative effect on HSPT passing rates. Thus, a higher percentage of eligibility for free/reduced lunch results in lower HSPT passing rates in the reading section, mathematics section, writing section, and all sections combined. Further, the data show that free/reduced lunch eligibility has the most significant negative influence on HSPT passing rates in the reading section and all sections combined, followed by the mathematics section and then by the writing section.

This researcher chose eligibility for free/reduced lunch as a proxy for socio-economic status (SES) because students are eligible for free/reduced lunch only if their family income is below a certain level (see Chapter 3 for further clarification of free/reduced lunch criteria). The results of this study, therefore, suggest that schools with large populations of students from low-income families are likely to have low passing rates on the HSPT, particularly in the area of reading.

The findings were to be expected as they support studies (for example, “Quality Counts,” 1998) and ethnographic accounts (for example, Kozol, 1991), which show that students from low-income families do not achieve as well academically as do students from high-income families. The results also support landmark court decisions such as Robinson v. Cahill (62 N.J. 473,303 A.2d 273 [1973])) and Abbott v. Burke (153 N.J. 480, 710 A.2d 450 [1998]), which were based on the premise that students in poor urban
districts are at a distinct disadvantage regarding academic achievement. The fact that student achievement on the HSPT is strongly influenced by socio-economic status (SES), also reinforces the popular notion today that money does matter when it comes to educating our students. Indeed, the concept that adequate funding to achieve parity for all school districts is essential for student success, continues to be a major issue in the New Jersey Department of Education's plan for systemic reform (New Jersey Department of Education, 1999).

One obvious solution, then, to the problem of low-income schools performing poorly on statewide exams, is to provide these schools with additional funding. Indeed, long-term reform plans in New Jersey have re-engineered school finances to fund poor urban school districts for the purpose of raising standards for all students, particularly low-income students. However, for the short term, schools need to provide low-income students with supplemental instructional programs to help raise their achievement levels. Furthermore, if schools, particularly those with large low-income populations, want to raise their HSPT passing rates, it is critical that they have plans to identify and remediate their students.

Generally, schools use the results of nationally normed or district-wide achievement tests to identify academically at-risk students. That is, schools identify students as “at risk” if the students’ test scores fall below certain minimum levels of proficiency. Students identified in this manner are then placed in remedial classes by the schools. The findings of this study underscore the need for schools to use socio-economic status, as measured by free/reduced lunch eligibility, as an alternate indicator of
students’ need for supplemental remedial instruction. The free/reduced lunch application is generally a component of the admissions process in most schools. Therefore, students’ eligibility for free/reduced lunch are part of the schools’ records and would be readily available to school administrators. Thus, schools would avoid costly and time consuming testing by using student free/reduced lunch eligibility as one critical criterion for students entering their remedial programs. In this way, the results of this study can provide schools with research-based evidence and a cost-effective way to identify students who are in need of extra help by using free/reduced lunch eligibility.

Furthermore, the findings reveal that low economic status is a probable cause of low HSPT passing rates, particularly on the reading section. This finding was not surprising, as educators have always considered reading to be the one area that is most negatively affected by a student’s poor economic conditions. Educators have also traditionally viewed reading as critically important to a student’s overall success in school. Therefore, the outcomes of this research provide strong evidence that schools that have large populations of low-income students, based on free/reduced lunch eligibility, should develop and emphasize comprehensive reading programs.

Reading should be stressed in low-income schools not only in English classes but across all other content areas, such as history and science, as well. In addition, the reading programs should be extended beyond the regular school day. After-school tutoring programs, summer school programs, and community-based reading programs are just a few of the intensified initiatives that low-income schools should implement if they are to raise their HSPT passing rates in reading.
Finally, the proposed identification of academically at risk students by using free/reduced lunch eligibility is hardly new. For example, consistent with the Improving America’s Schools Act of 1994, schools are eligible to receive Title I funding based on “poverty criteria,” one of which is the number of children in the school eligible for free/reduced lunch. Title I funding is based on the premise that economically disadvantaged students are academically at risk. Nationwide, there has been a continuing debate among educators as to whether or not poverty rates, as defined by percentages of eligibility for free/reduced lunch, are a legitimate criteria for providing Title I funding to schools. The findings of this study show that the poverty rate criteria put forth by the Improving America’s Schools Act are, in fact, justifiable.

Enrollment Size and HSPT Passing Rates

The quantitative findings unexpectedly show that the variable labeled enrollment size (the count of students on-roll in October of each school year) does not significantly influence HSPT passing rates in the reading section, mathematics section, writing section, and all sections combined. The results are surprising, as they are contrary to what most educators today believe to be true; that is, smaller is better when it comes to number of students in our schools. In addition, the findings are unexpected because they are contrary to research that shows that smaller schools do, in fact, positively impact student achievement (Fowler, 1989; Plecki, 1991; Kanarick, 1992; Howley, 1994; Klonsky & Klonsky, 1999).

One possible explanation for these unanticipated statistical results is that on the
school report card, the enrollment size data of ten of the 57 high schools in this study were based on grade configurations that are different from the standard 9-12 configuration. That is to say, ten high schools in this study have grade configurations of either 9-11, 11-12, 7-12, 6-11, 8-12, or 5-12. However, to compensate for the irregularity in grade arrangements in these high schools, I made approximate adjustments to their enrollment sizes (see Chapter 3 for further clarification on the adjustment method). Controlling for the various grade configurations, other than the approximate adjustment method, was beyond the scope of this study. Nonetheless, it is impossible to know whether the statistical insignificance of the variable enrollment size to HSPT passing rates is real or, instead, due to an anomaly in the original data. A future study would do well to further explore this.

The statistical results, therefore, which show that HSPT passing rates are not influenced by enrollment size, should be looked at with caution because of the enrollment size inconsistencies of schools in this study. Nevertheless, looking beyond the statistical results, the interviews with principals and teachers also suggest that perhaps enrollment size does not matter to student success. Although the interview questions were not aimed directly at enrollment size issues, the topic of enrollment size as it relates to student achievement rarely surfaced in any of interviews. Rather, the interviews revealed that regardless of the number of students in the schools, effective principal leadership is what matters most in regard to student achievement.

Thus, the popular notion that schools are more effective simply because they have fewer students, may not be true. This study shows that transformational principals who
are motivating and inspirational “cheerleaders,” can effectively lead both large and small schools to academic success. Because transformational principals structure positive learning environments that support overall student success in schools, it does not seem to matter if the schools they lead are large or small.

Does this mean that schools should ignore current research that suggests that schools with small enrollments are apt to have higher achievement? The answer to this question, based on the results of this study, is No. However, schools need to recognize that the point is not just to be small. Along with being small, schools also need to have strong, effective, and dynamic principals leading the way. Thus, this study suggests that perhaps the leadership of transformational principals transcends issues associated with small versus large enrollment size, enabling transformational principals to effectively lead schools of any size to greater academic success.

Student Mobility Rate and HSPT Passing Rates

The statistical findings show that the variable labeled student mobility rate (the measure of the disruption to teaching and learning caused by students entering or exiting other than at the beginning or end of the year) does not significantly influence HSPT passing rates in the reading section, mathematics section, writing section, and all sections combined. Unlike the results regarding enrollment size, the findings concerning mobility rate are not surprising, as a review of the literature regarding the effect of mobility rate on student achievement is conflicting. Although some studies reveal that student mobility inversely affects student learning and achievement (Ingersoll, 1988; Schuler, 1990;
Paredes, 1993), other studies (Fernandez, 1987; Adduci, 1990) show that student mobility has little or no effect on achievement.

The popular view, however, among educators today in regard to student mobility is that high student mobility negatively influences academic achievement in schools. Indeed, the interviews I had with principals and teachers reveal that they believe that high student mobility has detrimental effects on the overall HSPT passing rates in their schools. Both the principals and the teachers clearly made assumptions that mobility is a problem for student academic achievement. Two of the teachers explicitly stated, “The school faces mobility problems because students transfer in and out of the school all the time and they [the students] are not here long enough to learn or retain anything.” Particularly in the vocational schools, the principals and teachers viewed high student mobility as one of the primary causes of low student achievement in their schools.

As mentioned above, the quantitative findings of this study showing that mobility has no effect on HSPT passing rates, contradicts some prior research. However, and more importantly, the findings contradict current viewpoints of educators who see high student mobility as a primary cause of low student achievement. The question is: If student mobility today is generally perceived as such a large problem for schools, why do the findings of this study show that student mobility has no significant effect? The answer to this question is that this study did not break student mobility down into its constituent parts, and investigate the many possible reasons for mobility. Indeed, the data for student mobility in this study came from all 57 schools, which included schools from both high and low socio-economic status (SES) types.
In schools designated by the state as low SES (low socio-economic status), economic and/or social difficulties may be responsible for students' high mobility rate. In low SES schools, high mobility severely and negatively affects the learning and achievement of students who already may be academically at-risk. However, in schools designated by the state as high SES (high socio-economic status), parental professional and corporate transfers may be responsible for students' high mobility rate. In high SES schools, high mobility most likely has little or no effect on the learning and achievement of students who are basically high achievers and who probably do well under most circumstances and in any school.

The point is that without knowing the reasons for student mobility it is not possible to definitively interpret statistical findings regarding the effect of mobility on HSPT passing rates. The effect of high mobility of low-income students on HSPT passing rates is very different from the effect of high mobility of high-income students on HSPT passing rates. Therefore, educators must look at the results that indicate that student mobility has no effect on HSPT passing rates, with caution. They need to do so particularly in light of the fact that teachers, principals, and educational scholars today feel strongly that mobility does affect student achievement. Although it was beyond the scope of this study, educational researchers need to conduct further studies in regard to student mobility and student achievement that would identify and control for the variety of circumstances and reasons that may be responsible for student mobility in schools today.
Implications for Practice

This research study has focused on an examination of the transformational leadership style of principals in comprehensive and vocational high schools in regard to its effect on HSPT passing rates in the reading section, the mathematics section, the writing section, and all sections combined of the HSPT. A primary concern of the study was to investigate how the transformational leadership of principals in vocational high schools differs from the transformational leadership of principals in comprehensive high schools. Additionally, the study analyzed how and why HSPT passing rates in high schools are influenced by student attendance rate, eligibility of free/reduced lunch, enrollment size, and student mobility rate on HSPT passing rates.

The outcomes of this study are noted in the discussion in terms of their overall significance to education today and their implications for future practice. The implications in the previous pages essentially address how educators, particularly those in vocational and comprehensive high schools, need to embrace the concept of transformational leadership as one important way of addressing their concerns about HSPT passing rates in high schools today. The recommendations also address issues concerning the influence of student attendance, student socio-economic status as measured by free/reduced lunch eligibility, school enrollment size, and student mobility on HSPT passing rates and overall student achievement.

The following is a brief summary of these implications and recommendations: 1. the creation, by boards of education, of transformational leadership profiles for principals to enable boards of education to identify principal candidates who have the most potential
to act as transformation leaders; 2. the development of professional development programs in schools of education, professional organizations, and school districts to provide aspiring, and existing principals with training in transformational leadership; 3. the hiring of vocational principals who have more than standard credentials and who exhibit high degrees of transformational leadership qualities; 4. the establishment of courses in graduate schools of education for aspiring vocational principals, which specifically emphasize transformational leadership as it relates to meeting the special needs of vocational students; 5. the creation of school environments that encourage and motivate students to attend school on a regular and consistent basis; 6. the creation of comprehensive reading programs in low-income schools to enhance the academic achievement of students in these schools; 7. the recognition by schools that although their enrollment size may be small, they still need to hire strong, dynamic principals to achieve academic success; 8. the investigation by educators of the issue of student mobility as it relates to student achievement, in light of the fact that there are a variety of reasons, including but not limited to SES, that students are mobile.

Limitations of the Study

There are several limitations to this study. The first limitation is the small number of schools and interviewees involved in the interview process. I limited the number of schools to four (two vocational and two comprehensive high schools) and the number of interviewees to twelve (four principals and eight teachers). The limitation was due to time and availability constraints as well as the availability of principals and teachers.
whom I interviewed. The descriptive data, therefore, are representative of only a relatively small sample of interviewees. Although the qualitative interview data exemplify transformational behaviors of high school principals, the data cannot be generalized to the overall population of high school principals.

The second limitation is that the transformational leadership scores of the principals come from self-reported principal responses on the Multifactor Leadership Questionnaire (MLQ). I was aware that the principals’ self-rating on the MLQ could be somewhat slanted. According to Bass and Avolio (1997), leaders tend to “inflate” their own ratings in comparison to ratings made by their associates. Bass and his colleague maintained that researchers should extend their studies beyond self-reporting and said, “Generally we recommend using the associates’ descriptions of leaders [that is, descriptions by the subordinates of the leaders] for research purposes, due to higher reliabilities” (p. 54).

I recognize that had I surveyed teachers working with each surveyed principal using the MLQ rater form (Bass & Avolio, 1995), I could have measured principal transformational leadership more precisely. However, it was administratively impossible to survey teachers as well as principals in 57 schools. Therefore, to compensate for the fact that I did not survey teachers, I interviewed selected teachers to obtain their viewpoints concerning principals’ transformational leadership behaviors. Nevertheless, it would have been better to have surveys of all teachers in the 57 schools.

The third and final limitation is that some enrollment size data were based on alternative grade configurations (for example, 9-11, 8-12). However, I compensated for
this inconsistency by adjusting the enrollment data of the schools with alternate grade configurations, making the data approximately proportionate to the 9-12 enrollment configurations (see Chapter 3 for a detailed description of the method I used to make this adjustment). Nevertheless, it would have been more useful to have enrollment sizes all based on the same enrollment configuration.

Significance of the Study

In this era of high stakes testing in the name of accountability, most educators view the principal as a key element in improving student achievement. The data from this research will assist schools in making decisions regarding how the transformational leadership of the principal can potentially improve HSPT passing rates in schools. The results of this study on principal transformational leadership and its effects on HSPT passing rates can have an impact on school districts in several ways. First, knowing that a transformational leader is likely to have a positive effect on HSPT passing rates will result in better and more informed hiring decisions. School districts will have research-based knowledge to utilize as part of their efforts to raise student achievement. Second, knowledge of the characteristics of a transformational leader will also be useful for professional development or the retraining of veteran principals. Carr (1997) asserted that principals should be cognizant of their leadership style as leadership style influences the behavior of people with whom they work. Furthermore, Murphy and Beck (1994) stated, "... that principals themselves have not thoughtfully and proactively defined -- for themselves and others -- either educational purposes or their roles in helping achieve
these ends" (p. 4). Thus, school districts can use such information to provide inservice training for principals in being effective leaders. The facts related to the benefits of transformational leadership to student achievement will also be useful to principals when they develop their personal improvement plans based on their yearly evaluations.

Educational organizations, such as the Principals and Supervisors Association and the New Jersey School Development Council, can use this research to offer professional development opportunities to new and aspiring principals.

Although all school districts in New Jersey and elsewhere will benefit from learning more about how transformational leadership affects student achievement, vocational high schools, in particular, will benefit because they have traditionally struggled to have their students achieve passing HSPT scores. Contrary to what some people believe, students in vocational schools must pass the HSPT since it is a high school graduation requirement just as for the comprehensive high schools. However, in addition to passing the HSPT, students in vocational schools must also pass state shop competency tests in their chosen career major. Thus, administrators of vocational schools have the double task of educating students to achieve success in both the academic and vocational areas. Additionally, as this research shows, vocational principals must also meet the challenge of improving the academic achievement and social and emotional well-being of their students. Thus, the knowledge that transformational leadership of principals has the potential to raise scores of students in vocational schools will be useful to school officials and community leaders in vocational districts. In addition, this research provides the knowledge that vocational principals need so they can meet the
unique challenges they currently face by embracing the concept of and becoming transformational leaders.

Finally, the results of this study provide data on student attendance, eligibility for free/reduced lunch, enrollment size, and student mobility for educators to consider as they evaluate their programs to raise HSPT passing rates in their schools. Moreover, the findings of this study will assist educators in answering some important questions in regard to the above four areas and overall student achievement in schools: What steps can schools take to increase attendance rates so students will have continuity and consistency of instruction? What strategies can low-income schools implement to provide students with supplemental reading instruction? How can small schools enhance their effectiveness with the leadership of transformational principals? Although high mobility rates appear to be detrimental to overall student achievement, how can schools look beyond these perceptions to identify the true reasons behind mobility and their effect, or lack of effect, on student achievement?

Recommendations for Further Research

This study has added to the existing, although limited, body of knowledge concerning the effect of transformational leadership in the school setting. Therefore, the following additional research would be appropriate to further expand and empirically clarify the topic.

First, because this study used a relatively small sample size (n=57), there was a reduced probability of detecting any significant relationship between the dependent
variable (HSPT passing rates) and the independent variables. To compensate for the small sample size, this researcher limited the number of variables in the regression model. However, future researchers would do well to conduct additional quantitative studies like this one, but with larger sample sizes. Expanding the sample sizes would achieve higher power for hypothesis testing and increase the statistical significance of the study.

Second, this research limited the number of principals and teachers who were interviewed. Future researchers should conduct qualitative studies that expand the number of principals and teachers interviewed. Increasing the number of interviewees would not only provide more and richer descriptive data, but would also make the results of the research more generalizable to the current population of principals.

Third, because this study administered the Multifactor Leadership Questionnaire (MLQ) to principals only, future studies would do well to administer the MLQ rater form to teachers, as well as to principals. Teachers rating principals in this manner, would address the issue of bias attached to principals self-reporting their behavior.

Fourth, this study compensated for inconsistencies in grade configurations in high schools by making approximate adjustments to enrollment size data. Future studies should be conducted which examine the effect of different high school grade configurations, other than the standard 9-12 configuration, on student achievement. Researchers need to do further studies to show that perhaps students in an 8-12 high school setting achieve differently from students in a 9-12 high school setting.

Fifth, the results of this study, as well as the results of most other research, suggest that student achievement is strongly linked to student attendance. However, it
behoves researchers to isolate the components of good attendance to determine why students attending school on a regular basis has a positive effect on student achievement. Therefore, researchers should conduct studies that examine the hidden implications of student attendance rate, such as consistency of instruction, when formulating conclusions regarding its effect on student achievement.

Finally, the results of this study shed light on the fact that the relationship between student mobility and achievement may be affected by a variety of circumstances surrounding mobility. For example, the mobility of low-income students may affect student achievement levels in schools very differently from the mobility of high-income students. Therefore, future studies should investigate the relationship between student mobility rate and student achievement by controlling for the disparate causes of mobility.


Improving America’s School Act, Public Law of 1994, 103-382.


New Jersey State Department of Education. (2000). *Adopted Standards and Assessment for Student Achievement Regulations*. Trenton, New Jersey


APPENDICES
APPENDIX A

School-level Principal Leadership Practices According to Leithwood Model (1994) of School Transformational Leadership

Setting Directions

1. Building school vision
   - Helping to provide colleagues with an overall sense of purpose;
   - Initiating processes (retreats, and so on) that engage staff in the collective development of a shared vision;
   - Espousing a vision for the school but not in a way that pre-empts others from expressing their vision;
   - Exciting colleagues with visions of what they may be able to accomplish if they work together to exchange their practices;
   - Helping clarify the meaning of the school’s vision in terms of its practical implications for programs and instruction;
   - Assisting staff in understanding the relationship between external initiatives for change and the school’s vision;
   - Assisting staff in understanding the larger social mission of which their vision of the school is a part, a social mission that may include such important end values as equality, justice and integrity;
   - Using all available opportunities to communicate the school’s vision to staff, students, parents and other members of the school community.

2. Establishing school goals
   - Providing staff with a process through which to establish school goals and to regularly review those goals; this is likely to be a ‘problem solving’ process and to include careful diagnosis of the school’s context;
   - Expecting teams of teachers (for example, departments) and individuals to regularly engage in goal setting and reviewing progress towards those goals;
   - Assisting staff in developing consistency between school visions and both group and individual goals;
   - Working towards the development of consensus about school and group goals and the priority to be awarded such goals;
   - Frequently referring to school goals and making explicit use of them when decisions are being made about changes in the school;
   - Encouraging teachers, as part of goal setting, to establish and review individual professional growth goals;
• Having ongoing discussions with individual teachers about their professional growth goals;

• Clearly acknowledging the compatibility of teachers’ and school’s goals when such is the case;
• Expressing one’s own views about school goals and priorities;
• Acting as an important resource in helping colleagues achieve their individual and school goals.

3. Demonstrating high performance expectations

• Expecting staff to be innovative, hard working and professional; these qualities are included among the criteria used in hiring staff;
• Demonstrating an unflagging commitment to the welfare of students;
• Often espousing norms of excellence and quality of service;
• Not accepting second-rate performance from anyone;
• Establishing flexible boundaries for what people do, thus permitting freedom of judgement and action within the context of overall school goals and plans;
• Being clear about one’s own views of what is right and good.

Developing People

4. Offering individualized support

(Equitable, humane, and considerate treatment of one’s colleagues)
• Treating everyone equally; not showing favoritism towards individuals or groups;
• Having an ‘open-door’ policy;
• Being approachable, accessible and welcoming;
• Protecting teachers from excessive intrusions on their classroom work;
• Giving personal attention to colleagues who seem neglected by others;
• Being thoughtful about the personal needs of staff;

(Support for the personal, professional development of staff)
• Encouraging individual staff members to try new practices consistent with their interests;
• As often as possible, responding positively to staff members’ initiatives for change;
• As often as possible, providing money for professional development and other needed resources in support of changes agreed on by staff;
• Providing coaching for those staff members who need it

(Developing close knowledge of their individual colleagues)
• Getting to know individual teachers well enough to understand their problems and to be aware of their particular skills and interests; listening carefully to staff’s ideas;
• Having the ‘pulse’ of the school and building on the individual interests of teachers, often as the starting point for school change.

(Recognition of good work and effort)
• Provide recognition for staff work in the form of individual praise or ‘pats on the back’;
• Are specific about what is being praised as ‘good work’;
• Offer personal encouragement to individuals for good performance;
• Demonstrate confidence in colleagues’ ability to perform at their best.

(Approaches to change)
• Follow through on decisions made jointly with teachers;
• Explicitly share teachers’ legitimate cautions about proceeding quickly toward implementing new practices, thus demonstrating sensitivity to the real problems of implementation faced by teachers;
• Take individual teachers’ opinions into consideration when initiating actions that may affect their work;
• Instill, in staff, a sense of belonging to the school.

(Contingent reward)
• Assuring staff members that they can get what they want personally in exchange for their efforts;
• Paying personal compliments to staff when they do outstanding work;
• Frequently acknowledging good performance;
• Providing public recognition for good work.

5. Providing intellectual stimulation
(Change those school norms that might constrain thinking of staff)
• Removing penalties for making mistakes as part of efforts toward professional and school improvement;
• Embracing and sometimes generating conflict as a way of clarifying alternative courses of action available to the school;
• Requiring colleagues to support opinions with good reasons;
• Insisting on careful thought before action.

(Challenge the status quo)
• Directly challenging the basic assumptions of staff about their work as well as unsubstantiated or questionable beliefs and practices;
• Encouraging staff to evaluate their practices and refine them as needed;
• Encouraging colleagues to re-examine some of their basic assumptions about their work; determining the problems inherent in the way things are;
• Stimulating colleagues to think more deeply about what they are doing for their students.

(Encouraging new initiatives)
• Encouraging staff to try new practices without using pressure;
• Encouraging staff to pursue their own goals for professional learning;
• Helping staff to make personal sense of change:
• Providing the necessary resources to support staff participation in change initiatives.

(To bring their colleagues into contact with new ideas)
• Stimulating the search for and discussion of new ideas and information relevant to school directions;
• Seeking out new ideas by visiting other schools, attending conferences and passing on these new ideas to staff;
• Inviting teachers to share their expertise with their colleagues;
• Consistently seeking out and communicating productive activities taking place within the school;
• Providing information helpful to staff in thinking of ways to implement new practices.
6. Modeling best practices and important organizational values

(The transformational leader's general commitment to the school organization)
- Becoming involved in all aspects of school activity;
- Working alongside teachers to plan special events;
- Displaying energy and enthusiasm for own work.

(Commitment to professional growth)
- Responding constructively to unrequested feedback about one's leadership practices;
- Requesting feedback from staff about one's work;
- Demonstrating a willingness to change one's practices in light of new understandings.

(To enhance the quality of both group and individual problem-solving processes)
- Demonstrating, through school decision-making processes, the value of examining problems from multiple perspectives;
- Modeling problem-solving techniques that others can adapt for their own work.

(To reinforce key values)
- The basic values of respect for others;
- Trust in the judgement of one's colleagues;
- Integrity;
- The instrumental value of punctuality.

Redesigning the Organization:

7. Creating a productive school culture

(Strengthening the school culture)
- Clarifying the school's vision in relation to collaborative work and the care and respect with which students were to be treated;
- Reinforcing, with staff, norms of excellence for their own work and the work of students;
APPENDIX A (continued)

- Using every opportunity to focus on, and to publicly communicate, the school’s vision and goals;
- Using symbols and rituals to express cultural values in the context of social occasions in which most staff participate;
- Confronting conflict openly and acting to resolve it through the use of shared values;
- Using slogans and motivational phrases repeatedly;
- Using bureaucratic mechanisms to support cultural values and a collaborative form of culture (for example, hiring staff who share school vision, norms and values);
- Assisting staff to clarify shared beliefs and to act in accordance with such beliefs and values;
- Acting in a manner consistent with those beliefs and values shared within the school.

(Form of the school culture)
- Sharing power and responsibility with others;
- Working to eliminate ‘boundaries’ between administrators and teachers and between other groups in the school;
- Providing opportunities and resources for collaborative staff work (for example, creating projects in which collaboration clearly is a useful method of working).

8. Developing structures to foster participation in school decisions

- Distributing the responsibility and power for leadership widely throughout the school;
- Sharing decision-making power with staff;
- Allowing staff to manage their own decision-making committees;
- Taking staff opinion into account when making decisions;
- Ensuring effective, group problem solving during meetings of staff;
- Providing autonomy for teachers (groups, individuals) in their decision;
- Altering working conditions so that staff have collaborative planning time and time to seek out information needed for planning and decision making;
- Ensuring adequate involvement in decision making related to new initiatives in the school;
- Creating opportunities for staff development.
APPENDIX B

Multifactor Leadership Questionnaire Leadership Form

MLQ Multifactor Leadership Questionnaire Leader Form (5x-Short)

Name_________________________Date_________________________

High School____________Comprehensive____Vocational____

Years in current position as principal____

This questionnaire is to describe your leadership style as you perceive it. Please answer all items on this answer sheet. If an item is irrelevant, or if you are unsure or do not know the answer, leave the answer blank.

Forty-five descriptive statements are listed on the following pages. Judge how frequently each statement fits you. The word "others" may mean your peers, clients, direct reports, supervisors, and/or all of these individuals.

Use the following rating scale:

<table>
<thead>
<tr>
<th>Not at all</th>
<th>Once in a while</th>
<th>Sometimes</th>
<th>Fairly often</th>
<th>Frequently, if not always</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

1. I provide others with assistance in exchange for their efforts...
2. I re-examine critical assumptions to question whether they are appropriate...
3. I fail to interfere until problems become serious...
4. I focus attention on irregularities, mistakes, exceptions, and deviations from standards...
5. I avoid getting involved when important issues arise...
6. I talk about my most important values and beliefs...
7. I am absent when needed...
8. I seek differing perspectives when solving problems...
9. I talk optimistically about the future...
10. I instill pride in others for being associated with me...
11. I discuss in specific terms who is responsible for achieving performance targets...
12. I wait for things to go wrong before taking action...
13. I talk enthusiastically about what needs to be accomplished...
14. I specify the importance of having a strong sense of purpose...
15. I spend time teaching and coaching...
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<th>Sometimes</th>
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<td>46. I make clear what one can expect to receive when performance goals are achieved</td>
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<td>47. I show that I am a firm believer in &quot;If it ain't broke, don't fix it.&quot;</td>
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<td>50. I demonstrate that problems must become chronic before I take action</td>
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<td>52. I concentrate my full attention on dealing with mistakes, complaints, and failures</td>
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<td>57. I direct my attention toward failures to meet standards</td>
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<td>66. I express confidence that goals will be achieved</td>
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<td>67. I am effective in meeting others' job-related needs</td>
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<td>68. I use methods of leadership that are satisfying</td>
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<td>69. I get others to do more than they expected to do</td>
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<td>70. I am effective in representing others to higher authority</td>
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<td>71. I work with others in a satisfactory way</td>
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<td>72. I heighten others' desire to succeed</td>
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<td>73. I am effective in meeting organizational requirements</td>
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<td><strong>Transformational Leadership Factors</strong></td>
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<td>Idealized Influence (Behavior)</td>
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<tr>
<td>Idealized Influence (Attributed)</td>
<td>The leader reassures others that obstacles will be overcome.</td>
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<td>Inspirational Motivation</td>
<td>The leader articulates a compelling vision of the future.</td>
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<td>Intellectual Stimulation</td>
<td>The leader sets others to look at problems from many different angles.</td>
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<td>Individualized Consideration</td>
<td>The leader spends time teaching and coaching.</td>
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<td><strong>Transactional Leadership Factors</strong></td>
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<td>Contingent Reward</td>
<td>The leader makes clear what one can expect to receive when performance goals are achieved.</td>
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<td>Management-by-Exception (active)</td>
<td>The leader directs attention toward failure to meet standards.</td>
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<tr>
<td>Management-by-Exception (passive)</td>
<td>The leader takes no action until complaints are received.</td>
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### The Nonleadership Factor

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<tr>
<th>Laissez-Faire</th>
<th>The leader avoids getting involved when important issues arise.</th>
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<td><strong>Outcomes</strong></td>
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<td>Extra Effort</td>
<td>The leader heightens others’ to succeed.</td>
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<td>Effectiveness</td>
<td>The leader is effective in meeting organizational requirements.</td>
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<tr>
<td>Satisfaction</td>
<td>The leader uses methods of leadership that are satisfying</td>
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</table>
APPENDIX D
1998-1999 New Jersey School Report Card *

School Level Data

1. Enrollment
2. Language Diversity
3. Student Attendance Rate
4. Student Mobility Rate
5. Dropout Rate
6. Student/Faculty Ratio
7. Faculty Attendance Rate
8. Student/Administration Ratio
9. Length of School Day
10. Instructional Time
11. HSPT Passing Rates (for combined October 1998 and April 1999 test administrations) in each section (reading, mathematics, and writing) and all sections.
12. HSPT- Grade 11 Class Summary Information
13. Scholastic Aptitude Tests (SAT) Results
14. Advanced Placement (AP) Results
15. Class of 1999 Enrollment History
16. Graduation Data
17. Graduation Type
18. Post Graduation Plans

* Report Card categories that are common to both Secondary and Vocational/Technical Specialized High School Report Cards
APPENDIX E

Letter Asking Principals to Complete MLQ

February, 2000

I am a doctoral student in Educational Administration and Supervision at Rutgers University, New Brunswick, New Jersey, under the supervision of Dr. Ronald Hyman, Chairperson, and my doctoral committee at Rutgers. I would like to ask your assistance with my dissertation research.

The purpose of my study is to show how the leadership style of high school principals affects student performance on the New Jersey High School Proficiency Test (HSPT). As the Supervisor of Basic Skills and Test Coordinator in a New Jersey high school, I personally know the importance of high school students succeeding on the HSPT. I believe the results of this research will give school districts valuable and practical knowledge and insights concerning the influence of principal leadership style on students' success on the HSPT.

The Multifactor Leadership Questionnaire has been designed to measure leadership styles. Please take a few minutes of your time to complete the enclosed MLQ Leader Form and return it to me in the enclosed self-addressed stamped envelope prior to ___. Also, you may be requested to participate in a follow-up interview, along with interviews of two teachers in your school.

Your participation in this study is voluntary and you are free to withdraw from the study at any time. There are no known risks and/or discomforts associated with this study. Your individual responses will be kept strictly confidential and will only be used for the purpose of this study. Further, your responses will not be used to identify individual principals or schools in the results of the study. Every precaution will be made to maintain the confidentiality of your responses; however, there is always a minimal risk that the confidentiality of the data could be compromised due to unforeseen circumstances beyond the control of the investigator. The expected benefits associated with your participating are the information about experiences in conducting quantitative/qualitative research and knowledge and insights concerning principal leadership style and its influence on students' success on the HSPT.

If you have any questions about this study, you may contact me at (732) 257-3300 ext.1940 or my Chairperson at Rutgers University, Dr. Ronald Hyman, at (732) 932-7614 ext.223. If you have any questions about your rights as a research subject, you may call the Rutgers Office of Research and Sponsored Programs at (732) 445-2799. Please note on the survey if you would like to receive a copy of the results of my study.

As a school administrator myself, I realize how busy you are and how valuable your time is. Your kind cooperation in helping me complete my dissertation study is greatly appreciated!

Respectfully yours,
Gail S. Verona
## MLQ Scoring Key

### MLQ Scoring Key (5x) Short

My Name: ________________________ Date: ________________

Organization ID #: ________________________ Leader ID #: ________________________

Scoring: The MLQ scale scores are average scores for the items on the scale. The score can be derived by summing the items and dividing by the number of items that make up the scale. All of the leadership style scales have four items, Extra Effort has three items, Effectiveness has four items, and Satisfaction has two items.

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<th>Sometimes</th>
<th>Fairly often</th>
<th>Frequently, if not always</th>
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<td>Idealized Influence (Behavior) total/4</td>
<td>Management-by-Exception (Passive) total/4</td>
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<td>Laissez-faire Leadership total/4</td>
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<td>Co contingent Reward total/4</td>
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2. Intellectual Stimulation .................................... 0 1 2 3 4
3. Management-by-Exception (Passive) ................. 0 1 2 3 4
4. Management-by-Exception (Active) .................... 0 1 2 3 4
5. Laissez-faire ............................................. 0 1 2 3 4
6. Idealized Influence (Behavior) ...................... 0 1 2 3 4
7. Laissez-faire ............................................. 0 1 2 3 4
8. Intellectual Stimulation .................................... 0 1 2 3 4
9. Inspirational Motivation .................................... 0 1 2 3 4
10. Idealized Influence (Attributed) .................... 0 1 2 3 4
11. Contingent Reward ........................................... 0 1 2 3 4
12. Management-by-Exception (Passive) ................. 0 1 2 3 4
13. Inspirational Motivation .................................... 0 1 2 3 4
14. Idealized Influence (Behavior) ...................... 0 1 2 3 4
15. Individualized Consideration ....................... 0 1 2 3 4

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Distributed by Mind Garden, Inc., 1690 Woodside Road, Suite 202, Redwood City, California 94061 (650) 261-3500
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APPENDIX G

Principal Interview Form

Principal Name __________________________

High School Name __________________________

Date beginning Principalship ________________

1. How would you describe your leadership style?
2. How important do you think your leadership style is in raising HSPT scores in your school?
3. As a principal of a vocational (comprehensive) high school, how do you see your role in raising test scores compared to the role of a principal in a comprehensive (vocational) high school?
4. As principal of a vocational (comprehensive) high school, what specific challenges to you face regarding HSPT?
5. Regarding HSPT test results, do you believe your leadership style impacts mainly students, teachers, both? Why and how?
6. How do you believe teachers perceive you as a leader in their school?

**Contingent Reward-Transactional Leadership Factor**
7. Do you express your satisfaction to teachers when they meet your expectations regarding classroom instruction and student achievement?

**Intellectual Stimulation- Transformational Leadership Factor**
8. Do you facilitate teachers examining student achievement issues in the school from different angles?

**Management-By-Exception (passive)-Transactional Factor**
9. Do you generally believe “If it ain’t broke, don’t fix it?”

**Management-By-Exception (active)-Transactional Factor**
10. Do you focus your attention on teachers failing to meet the standards you have set for them?

**Laissez-Faire- Nonleadership Factor**
11. Do you feel that you avoid getting involved when important issues arise?

**Idealized Influence (Behavior)- Transformational Leadership Factor**
12. Do you emphasize the importance of having a collective mission in your school?
Inspirational Motivation-Transformational Leadership Factor
13. Do you speak enthusiastically with teachers about raising student achievement on the HSPT?

Idealized Influence(Attributed)-Transformational Leadership Factor
14. Do you instill pride in teachers for working with me to raise student HSPT scores?

Individualized Consideration-Transformational Leadership Factor
15. Do you spend time coaching teachers regarding ways to improve student scores?

Extra Effort-Outcome
16. Do you believe that you get teachers to do more than they are expected to do regarding preparing students for the HSPT?

Effectiveness-Outcome
17. Do you believe that you are effective in meeting school and district requirements regarding HSPT?

Satisfaction-Outcome
18. Do you believe that you use methods of leadership that are satisfying to teachers?
APPENDIX H

Principal Interview Permission Form

The Influence of Principal Transformational Leadership Style on High School Proficiency Test Results in New Jersey Comprehensive and Vocational-Technical High Schools

The following information is provided for you to decide whether you wish to participate in the present doctoral study which is under the supervision of Dr. Ronald Hyman, Chairperson, and my doctoral committee at Rutgers University.

The purpose of this study is to collect and analyze data on how leadership styles of high school principals affect student performance on the New Jersey HSPT. Data collection for this qualitative portion of the study will consist of principal/teacher interviews. Interviews will take approximately one half hour each and will consist of open-ended questions regarding principal leadership style in your school.

Your participation in this study is voluntary and you are free to withdraw from the study at any time. There are no known risks and/or discomforts associated with this study. The expected benefits associated with your participating are the information about the experiences in conducting qualitative research, the opportunity to participate in the qualitative portion of a research study, and knowledge and insights concerning principal leadership style and its influence on the HSPT in your school.

Do not hesitate to ask any questions about the study either before participating or during the time that you are participating. Your name will not be associated with the research findings in any way and any comments you make will be strictly confidential and will not be shared with anyone. Every precaution will be taken to maintain the confidentiality of your responses; however, there is always a minimal risk that the confidentiality of the data could be compromised due to unforeseen circumstances beyond the control of the investigator. If you have any questions about your rights as a research subject, you may call the Rutgers University Office of Research and Sponsored Programs at (732) 445-2799.

Please sign your consent with full knowledge of the nature and purpose of the procedures. A copy of this consent form will be given to you to keep.

Signature of Participant ____________________________ Date ________________

Gail S. Verona, Principal Investigator 732-257-3300 X1940
APPENDIX I

Teacher Interview

Teacher Name __________________________

High School Name __________________________

Date beginning at school _______________

1. How would you describe your principal’s leadership style?
2. How important do you think your principal’s leadership style is in raising HSPT scores in your school?
3. As a teacher in a vocational (comprehensive) high school, how do you see your principal’s role in raising test scores compared to the role of a principal in a comprehensive (vocational) high school?
4. As a teacher in a vocational (comprehensive) high school, what specific challenges to you face regarding HSPT?
5. Regarding HSPT test results, do you believe the leadership style of the principal impacts mainly students, teachers, both? Why and how?
6. How do you believe the principal of your school perceives him/herself as a leader in your school?

   Contingent Reward-Transactional Leadership Factor
7. Does the principal express satisfaction to you when you meet his/her expectations regarding classroom instruction and student achievement?

   Intellectual Stimulation- Transformational Leadership Factor
8. Does the principal facilitate your examining student achievement issues in the school from different angles?

   Management-By-Exception (passive)-Transactional Factor
9. Does the principal generally believe “If it ain’t broke, don’t fix it?”

   Management-By-Exception (active)-Transactional Factor
10. Does the principal focus your attention on areas that you have failed to meet the standards he/she has set for you?

   Laissez-Faire- Nonleadership Factor
11. Do you feel that the principal avoids getting involved when important issues arise?
APPENDIX I (continued)

Idealized Influence (Behavior) - Transformational Leadership Factor
12. Does the principal emphasize the importance of having a collective mission in your school?

Inspirational Motivation - Transformational Leadership Factor
13. Does the principal speak enthusiastically with you about raising student achievement on the HSPT?

Idealized Influence (Attributed) - Transformational Leadership Factor
14. Does the principal instill pride in you for working with him/her to raise student HSPT scores?

Individualized Consideration - Transformational Leadership Factor
15. Does the principal spend time coaching you regarding ways to improve student scores?

Extra Effort - Outcome
16. Does the principal get you to do more than you are expected to do regarding preparing students for the HSPT?

Effectiveness - Outcome
17. Do you believe that the principal is effective in meeting school and district requirements regarding HSPT?

Satisfaction - Outcome
18. Is the principal’s leadership style satisfying to you?
APPENDIX J

Teacher Interview Permission Form

The Influence of Principal Transformational Leadership Style on High School Proficiency Test Results in New Jersey Comprehensive and Vocational-Technical High Schools

The following information is provided for you to decide whether you wish to participate in the present doctoral study which is under the supervision of Dr. Ronald Hyman, Chairperson, and my doctoral committee at Rutgers University.

The purpose of this study is to collect and analyze data on how leadership styles of high school principals affect student performance on the New Jersey HSPT. Data collection for this qualitative portion of the study will consist of principal/teacher interviews. Interviews will take approximately one half hour each and will consist of open-ended questions regarding principal leadership style in your school.

Your participation in this study is voluntary and you are free to withdraw from the study at any time. There are no known risks and/or discomforts associated with this study. The expected benefits associated with your participating are the information about the experiences in conducting qualitative research, the opportunity to participate in the qualitative portion of a research study, and knowledge and insights concerning principal leadership style and its influence on the HSPT in your school.

Do not hesitate to ask any questions about the study either before participating or during the time that you are participating. Your name will not be associated with the research findings in any way and any comments you make will be strictly confidential and will not be shared with the principal of your school or anyone else. Every precaution will be taken to maintain the confidentiality of your responses; however, there is always a minimal risk that the confidentiality of the data could be compromised due to unforeseen circumstances beyond the control of the investigator. If you have any questions about your rights as a research subject, you may call the Rutgers University Office of Research and Sponsored Programs at (732) 445-2799.

Please sign your consent with full knowledge of the nature and purpose of the procedures. A copy of this consent form will be given to you to keep.

_________________________________________  ______________
Signature of Participant                        Date

Gail S. Verona, Principal Investigator 732-257-3300 X1940
### VARIABLE | POSSIBLE VALUES | SOURCE | CODE
--- | --- | --- | ---
School Type | V= Vocational-Technical HS  
H= Comprehensive HS | Definition: New Jersey Department of Education | sch_type
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<th>HSPT All Sections Score</th>
<th>Percent grade eleven students passing all three sections (reading, writing, and mathematics) of the New Jersey High School Proficiency Test (HSPT). Excludes scores of Special Education (SE) and Limited English Proficient (LEP) students.</th>
<th>1998 State Summary Report (October 1998 HSPT Scores): New Jersey Department of Education</th>
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<td>Transformational Leadership Score</td>
<td>The average of the responses of principals' self-reporting Transformational leadership behaviors. Based on responses to 20 questions measuring Idealized Influence (Attributed), Idealized Influence (Behavior), Inspirational Motivation, Intellectual Stimulation, Individualized Consideration. MLQ questions: 2,6,8,9,10,13,14,15,18,19,21,23,25,26,29,30,31,32,34,36. Coded as the frequency of Transformational behaviors from 0 (Never) to 4 (Frequently).</td>
<td>Bass, B. M., &amp; Avolio, B. J. (1995). The multifactor leadership questionnaire (5X-short) Redwood City, CA: Mind Garden.</td>
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<td>Ratio- Transformational leadership score; Transactional leadership score</td>
<td>Ratio calculated by dividing Transformational leadership score by Transactional leadership score.</td>
<td>Bass, B. M., &amp; Avolio, B. J. (1995). The multifactor leadership questionnaire (5X-short) Redwood City, CA: Mind Garden</td>
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<td>Transformational + Contingent Reward Leadership Score</td>
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<td>Bass, B. M., &amp; Avolio, B.J. (1995) The multifactor leadership questionnaire (5X-short) Redwood City, CA: Mind Garden</td>
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<td>Ratio: Transformational Leadership Score + Contingent Reward : Transactional Leadership Score X School Type (Voc or Comp)</td>
<td>Interaction Variable (Trcr_trans) X (voc_or_c)</td>
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<td>Adjusted Enrollment</td>
<td>For schools whose grade range is not 9-12 (coded as 1=other) enrollment is multiplied by 4/X, where x= no of grades in school, to adjust for differences in grade ranges. (For example, for a school whose enrollment is based on grades 8-12 (5 grades levels), the enrollment in that school is multiplied by 4/5.)</td>
<td>New Jersey Department of Education 1998 Fall Survey Report</td>
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<td>Attendance</td>
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| Free/Reduced Lunch | Coded as a percent from 0% to 100%. eligible for free/reduced lunch. Calculated as: 
# students free + reduced lunch / total enrollment (including SE, excluding post-secondary students) | New Jersey Department of Education 1998 Fall Survey Report | X_F_R_LU |
| Vocational or Comprehensive | 1= Vocational-Technical High School 
0= Comprehensive High School | Definition: New Jersey Department of Education | voe_or_c |
APPENDIX L

Data Tables
Table L1

Summary of Regression Results for Alternate Regression Models for HSPT-R

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Notes: *: Significance at the 5% level or better
Table L2

Summary of Regression Results for Alternate Regression Models for HSPT-M

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Notes:
* · Significance at the 5% level or better
Table L3

Summary of Regression Results for Alternate Regression Models for HSPT-W

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Notes:
*: Significance at the 5% level or better
Table L4

Summary of Regression Results for Alternate Regression Models for HSPT-ALL

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Notes: *
Significance at the 5% level or better
APPENDIX M

The Mitigating Effect of the Transformational Leadership Variable on the HSPT Passing Rates for Vocational Schools

The following model illustrates, in detail, the mitigating effect of the transformational leadership variable on the HSPT passing rates for vocational schools. This one model combines two separate models into one. In this model, (Voc or Comp) is a dummy variable. For comprehensive schools, the dummy variable equals zero; for vocational schools, the dummy variable equals one.

\[ HSPT = \beta_0 + \beta_1 \text{TrLS} + \beta_2 (\text{TrLS})(\text{Voc or Comp}) \]

When the focus of my analysis is on comprehensive schools, then by definition, the dummy variable equals zero. The model then simplifies to the following since the interaction term is zero:

\[ HSPT = \beta_0 + \beta_1 (\text{TrLS}) + \beta_2 (\text{TrLS})(0) = \beta_0 + \beta_1 (\text{TrLS}) \]

Therefore, the slope of the comprehensive line is \( \beta_1 \)

When the focus of my analysis is on vocational schools, then by definition, the dummy variable equals one. The model then simplifies to the following:
HSPT = \beta_0 + \beta_1 (TrLS) + \beta_2 (TrLS) \\
= \beta_0 + \beta_1 (TrLS) + \beta_2 (TrLS) \\
= \beta_0 + (\beta_1 + \beta_2)(TrLS)

Therefore, the slope of the vocational line is \beta_1 + \beta_2.

The mitigating effect of the transformational leadership variable is to change the slope associated with transformational leadership when the vocational school is the focus. That is to say, when I analyze the comprehensive schools, the slope associated with transformational leadership is \beta_1. When I shift my focus of analysis to the vocational schools, the slope becomes \beta_1 + \beta_2. Therefore, the slope of the vocational line changes by the magnitude of \beta_2.

To illustrate this procedure in further detail, the following is the regression equation for passing rates for the reading section of the HSPT (see Table 11, for regression model). In this equation, the transformational leadership coefficient is 7.749; the leadership interaction coefficient is -3.726.

\[
\]

For comprehensive schools, the dummy variable equals zero and the model is:

\[
HSPT = \beta_0 + \beta_1 (TrLS) + \beta_2 (TrLS) \\
= \beta_0 + \beta_1 (TrLS) \\
= \beta_0 + 7.749(TrLS)
\]
For vocational schools, the dummy variable equals one and the model is:

\[
\text{HSPT} = \beta_0 + \beta_1 (\text{TrLS}) + \beta_2 (\text{TrLS})(1)
\]
\[
= \beta_0 + 7.749(\text{TrLS}) + (-3.726)(\text{TrLS})
\]
\[
= \beta_0 + (7.749 - 3.726)(\text{TrLS})
\]
\[
= \beta_0 + (4.023)(\text{TrLS})
\]

The above example shows that when the dummy variable changes from zero for comprehensive, to one for vocational, the slope associated with transformational leadership is reduced from 7.749 to 4.023. The following is an illustration of the process of the reduction in slope: