The Relationship Between the Styles of Leadership of Superintendents and the Effectiveness of School Districts in Puerto Rico

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THE RELATIONSHIP BETWEEN THE STYLES OF LEADERSHIP
OF SUPERINTENDENTS AND THE EFFECTIVENESS
OF SCHOOL DISTRICTS IN PUERTO RICO

by

Carlos Jose Cortés

A Dissertation
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THE RELATIONSHIP BETWEEN THE STYLES OF LEADERSHIP
OF SUPERINTENDENTS AND THE EFFECTIVENESS
OF SCHOOL DISTRICTS IN PUERTO RICO

Carlos Jose Cortés, Ed.D.
Western Michigan University, 1992

This study investigated the relationship between a superintendent's style of leadership and the effectiveness of the school district as measured in the Education Department of Puerto Rico.

The style of leadership of the superintendents was analyzed using the Leader Behavior Analysis II-Self (LBAII, Blanchard, Hambleton, Zigarmi, & Forsyth, 1990) questionnaire. The effectiveness of the school districts was measured using students' dropout rate, 12th grade students' graduation rate, and students' scores on three standardized tests (mathematics, English, and Spanish). The data for measuring district effectiveness were correspondent to the 1988-89 school year.

The Education Department of Puerto Rico has 100 superintendents. The LBAII questionnaire was sent to all superintendents, and a total of 60 questionnaires was completed and returned. The LBAII questionnaire placed the superintendents in one of four styles of leadership: S1 Directing, S2 Coaching, S3 Supporting, and S4
Delegating. The superintendents that returned the questionnaires identified with only two of the styles of leadership on the LBAII. Forty-three superintendents chose the S3 Supporting style of leadership, and 17 chose the S2 Coaching style of leadership.

Five hypotheses were developed, and \( t \) tests were performed to find any significant relationship between the style of leadership of the superintendents and the effectiveness of the school districts. The results of the \( t \) tests showed differences between the means. The differences between the means were considered not significant enough when comparing them with the critical values on the \( t \) table. In conclusion, this study found the style of leadership of the superintendents not to be a significant factor influencing the effectiveness of the school districts.
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The relationship between the styles of leadership of superintendents and the effectiveness of school districts in Puerto Rico

Cortés, Carlos José, Ed.D.

Western Michigan University, 1992
DEDICATION

This dissertation is dedicated to my mother, Adelina. Mami, without you I would never be what I am today. I also dedicate this to my daughters, Marta, Eliza, and Christina, and to my sisters and brothers: Rosita, Maritza, Lourdes, Eduardo, Norma, Minerva, Manolo, Carol, and Beatriz.

This dissertation is especially dedicated to "mi compañera," Traecy. Thank you for all your help and understanding. Most importantly, thank you for being my soul-mate.

Carlos Jose Cortés
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To all the different support personnel at WMU, I want to say thank you. The people at Financial Aid, The Graduate College, Minority Services, Cashiering, Maintenance Department, secretaries, receptionists, and all the others who, in one way or another, helped make my doctoral degree possible. To all of them, thank you.

Carlos Jose Cortés
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CHAPTER I

INTRODUCTION

In 1950, the Congress of the United States passed Public Law 600 (To Provide for the Organization of a Constitutional Government by the People of Puerto Rico). The law authorized Puerto Rico to draft its own constitution, and 2 years later, on July 25, 1952, the Commonwealth of Puerto Rico was established in the form of a permanent union between the United States and Puerto Rico. The arrangement gave Puerto Rico a considerable degree of home rule; it could appoint all judges, cabinet officials, and lesser officials. Puerto Rico also gained control over its educational system. Spanish was established as the official language of instruction in the public schools with English as a required second language.

Puerto Rico was granted autonomy over its educational system in the Commonwealth agreement, and the United States Congress agreed to help fund the system. In the fiscal year 1989-1990, federal aid to the Education Department of Puerto Rico was $315,530,273. During the same school year, the local government allocated $738,777,705 for the system (Central Government of Puerto Rico)
Rico, 1989).

The educational system of Puerto Rico is administered through the Department of Education. To oversee the central operation of the system, the Department of Education has a Secretary of Education and 10 Subsecretaries. The system is divided into 7 regions, which are, in turn, divided into 100 school districts. This arrangement gives the Education Department of Puerto Rico three levels of administrative power: central, regional, and district.

During the 1988-89 school year, 23,733 classified personnel worked for the Education Department. During the same year, the department employed 37,538 teachers, and student enrollment totaled 651,225 (Central Government of Puerto Rico, 1989).

The Problem

From its beginning, the Education Department of Puerto Rico has struggled with its organizational arrangement. During the last 20 years, the bureaucracy within the department has grown to such proportions that many people in Puerto Rico now agree that the system must soon undergo necessary reforms.

To streamline the Education Department, many educators advocate the elimination of the regional offices and their staffs. By eliminating these offices, many
resources can be redirected to other aspects of the system; however, eliminating the regions will not cure the system of all of its present ills.

The purpose of reforming the Education Department is to make the system more effective. Of course, the word effective has different meanings, and for an educational system, effectiveness has various connotations. Webster's New World Dictionary (1988) defines effectiveness as "producing a definite or desired result" (p. 432). Thus, before undertaking reforms, the system must define its intended results.

Making the Education Department of Puerto Rico more effective requires evaluating and changing many components within the system. When planning educational reforms, school officials in Puerto Rico should evaluate the roles of school districts and the office of the superintendent. One of the elements that educational theorists consider as important for the effectiveness of an educational system is the office of the superintendent and its role in the administration of district policies. According to Lieberman (1986), policies that determine what the school system is about, where the school system is going, and what problems receive priority must originate in the superintendent's office. The office of the superintendent must establish relevant and recognizable goals to be accomplished at the district level. Besides
establishing such goals, the superintendent's office should procure the means necessary to accomplish them. Once those goals are attained, the superintendent's office should be able to evaluate the results. Through such evaluation, the effectiveness of the district will be determined, and the necessary adjustments and reforms can be put into effect.

The effectiveness of a school district can be measured using many different means. How schools function has been assessed by different researchers using different techniques (Madaus, Airasian, & Kellaghan, 1980). While some of the variables used by people to measure schools' effectiveness can be tangible (such as student achievement test scores, student and teacher absenteeism rate, and student graduation and dropout rates), not all the data that make a school district a productive one can be so easily measured. Madaus et al. (1980) quoted Burnstein as writing that "one must expect to find aggregations of data in studies of school and program effectiveness if, for no other reason, than that schools and programs are aggregates of teachers and pupils, while classrooms themselves are aggregates of people and processes" (pp. 90-91). Variables such as climate, job satisfaction of people working at different district levels, and student morale and satisfaction are intangible factors that many times are almost impossible
to measure quantitatively. For the purpose of this study, only tangible variables were used to measure the districts' effectiveness.

The Superintendent As a Leader

The office of the superintendent holds the primary leadership position as the leader of the district. As leader of the school district, the superintendent is responsible for the effectiveness of the organization. As the head of the organization, the leader has substantial impact on the effectiveness of the organization. According to Fiedler and Chemers (1974), an organization without effective leadership is in trouble. Certainly, the personal qualities of the leader will have a lot to do with his or her effectiveness as a leader, and this essential capacity for strong leadership is one of the most important factors in determining the success and survival of groups and organizations (Fiedler & Garcia, 1987).

In order to determine the quality of the leader, theorists analyze the particular style of leadership at work and then try to determine if that particular style is the most appropriate for the situation. There are many different theories and studies about different styles of leadership and how a particular style of leadership might be effective in certain situations and
ineffective in others. According to Hersey and Blanchard (1969), for a leader "to have a single ideal type of leader behavior seems unrealistic" (p. 71).

In this study, the leadership styles of superintendents in the Puerto Rico Department of Education were analyzed. After defining the styles of leadership of the superintendents, the current study measured the effectiveness of the districts using such indicators as 12th grade students' graduation rate, students' dropout rate, and students' academic achievement as measured by standardized tests. After ranking the districts according to their effectiveness, this study employed computerized analysis to determine whether a significant relationship exists between the superintendent's leadership style and the overall effectiveness of the school district.

Purpose of the Study

For the last 20 years, the Education Department of Puerto Rico has been looking for ways to make itself more effective. The current study will assist the Education Department to determine the efficiency of the school districts. The study will also show the department, to a certain degree, how much effect the style of leadership of the superintendents can have on the effectiveness of the school districts.
The school districts are the backbone of the educational system, and by making the districts more effective, the entire system will benefit. Besides determining if there is a significant relationship between the superintendent's style of leadership and the effectiveness of the school district, this study may also determine if one particular style of leadership is preferable to other styles by the superintendents.

Definition of Terms

**Style of leadership** is the pattern of behavior that a leader professes in his or her position or role as a leader.

**District effectiveness:** In this study, the district effectiveness was defined using such data as 12th grade students' graduation rate, students' dropout rate, and student's academic achievement measured by standardized tests administered by the Education Department.

Limitations of the Study

Many factors can be analyzed to determine the effectiveness of a school district, especially intangible factors such as the climate and culture of the school district. Various tangible factors also can reflect the effectiveness of the district, such as teachers' and supervisors' perceptions about the leadership style and
functions of the superintendent. Time and distance pre-
vented the collection of all the data necessary to re-
fect the absolute degree of effectiveness of a school
district, and only the data described above were used in
the study. In the future, other studies may be conducted
to analyze the problem by considering different kinds of
data.
The purpose of this study was to measure the relationship between the style of leadership of the superintendent and the effectiveness of the school district. The study was done in the Education Department of Puerto Rico. The style of leadership of the superintendents was measured using the Leader Behavior Analysis II-Self questionnaire (Blanchard et al., 1990). The school district's effectiveness was measured using the following indicators: (a) students' achievement as measured by standardized tests, (b) students' dropout rate, and (c) 12th grade students' graduation rate.

The Superintendent As a Leader

The style of leadership of the chief executive of a company has a strong influence on how well that organization performs. Bennis and Nanus (1985) described leadership as "the pivotal force behind successful organizations" (p. 2). In the case of a school district, the superintendent holds the primary leadership position. In listing the duties of the superintendent district leader, Harris and Kendall (cited in Baptiste, Waxman,
de Felix, & Anderson, 1990) wrote:

A superintendent must first lead the school district in establishing clearly defined realistic, creative, learned, critically analyzed curriculum goals and objectives; a superintendent must affirm and continuously reaffirm, at all organizational levels, belief in the convictions that all children can learn, and that children must be provided with the best resources affordable; a superintendent, while using political savvy, cannot surrender personal commitment and integrity when inequities are found; the superintendent, while giving basic amenities to staff, must be the personification of support for students, their parents, and the broader community; the superintendent ought to know curriculum and instruction and be able to demonstrate and spread that knowledge through teaching, observing others teaching, and providing clear, direct, no-nonsense feedback to those observed; the superintendent must be highly visible and available to the total community; and, the superintendent must be fearless, truthful, frank, and demanding of him or herself as well as of other district personnel. (pp. 56-57)

Undoubtedly, the leadership skills of the superintendent are key elements that determine the effectiveness of a school district. Lieberman (1986) wrote about the superintendent leadership skills: "The superintendent is or should be the chief teacher in the school system—the person who defines problems and inspires others to solve them. Leadership, then, is more important than managerial skill, though managerial skill is not to be discounted" (p. 159).
Leadership Styles

Leadership is a concept that has been studied and analyzed since the beginnings of time. For two millennia at least, intellectuals have grappled with the vexing problems of the rulers versus the ruled (Burns, 1976). With every study, a new definition of leadership was developed.

After reviewing several writers, Hersey and Blanchard (1969) defined leadership as "the process of influencing the activities of an individual or a group in efforts toward goal achievement in a given situation" (p. 60). Fiedler and Chemers (1974) defined leadership as "more than a transaction based on an exchange of economics commodities (i.e., money for time and labor)" (p. 5). To Boles and Davenport (1982) leadership is "a process in which an individual takes initiative to assist a group to move toward production goals that are acceptable, to maintain the group, to dispose of those needs of individuals within the group that impelled them to join it" (p. 117). Burns (1976) professed that "leadership over human beings is exercised when persons with certain motives and purposes mobilize, in competition or conflict with others, institutional, political, psychological, and other resources so as to arouse, engage, and satisfy the motive of the followers" (p. 18). Clearly, such definitions show
that the term leadership has different meanings for different people.

Early theorists saw leadership as a unified concept. The multi-dimensional elements of leadership began to be studied in the 20th century. Early thinkers viewed leadership as a one-dimensional concept created through divine intervention. In contrast, 20th-century theorists have found that within the concept of leadership there are many variations and relationships.

In 1911, Taylor started a new era for leadership scholarship with his scientific management theory. In his theory, Taylor maintained that man is basically lazy, untrustworthy, and motivated by material gain (Taylor, 1911). With his approach, Taylor emphasized management and the accomplishment of the tasks.

During the 1930s, Mayo (cited in Hersey and Blanchard, 1969), a faculty member of the Harvard Business School, conducted a study at the Chicago Western Electric Company to prove that a relationship exists between performance and the way people feel about their jobs. For the first time, there was scientific research that attested to the fact that people's emotions and well-being can affect the way they perform a task at hand. According to Hersey and Blanchard (1969), Mayo's research on leadership, with its focus on human relations, replaced Taylor's (1911) task-oriented movement on center stage.
The Western Electric study was the beginning of the human relations movement, which accentuated the individual instead of the task. With the emergence of this concept, a leadership continuum was developed in which different styles of leadership could be charted and categorized. Following is a description of how the styles of leadership concept developed, along with some of the most important theories and ideas concerning styles of leadership.

One of the early users of the term styles of leadership was Weber (cited in Boles & Davenport, 1982). Weber categorized styles of leadership as traditional, bureaucratic, and charismatic. According to Boles and Davenport (1982), Weber saw styles of leadership as a "personality characteristic rooted in the leader's perception as to the source of his [or her] authority" (p. 234).

In the late 1930s, Lewin, Lippit, and White (cited in Lippit & White, 1947) conducted research at the University of Iowa in which they studied how different styles of leadership influence the behavior of followers. Lippit and White (1947) categorized the different leadership styles as autocratic, democratic, and laissez-faire. Many leadership theorists such as Boles and Davenport (1982) have qualified Lippit, Lewin, and White's research as irrelevant because the styles of leadership were based on the researchers' descriptions and not on the natural behavior of the study's participants.
By the 1950s, several studies on leadership styles were being conducted at different universities in the United States. At Ohio State University, the Bureau of Business Research was developing the Leader Behavior Description Questionnaire. It was created with the purpose of identifying the participant's style of leadership. In his studies at Ohio State University, Halpin (1959) described two types of leadership behavior: initiating structure and consideration. At the University of Michigan, Likert (1961) was demonstrating that in some situations, the followers prefer a democratic style of leadership.

In 1960, McGregor introduced his X and Y theory of leadership. In his theory, McGregor (1960) postulated that a manager or leader with an X type of behavior has the notion that followers or workers are lazy and irresponsible. Like Taylor (1911) before him, McGregor believed that followers need to be told exactly what to do and that an autocratic leader was needed to keep them performing. On the other side, according to McGregor, a leader with a Y type of behavior believes that the workers or followers need to take part in the decision-making process.

Until the mid-1960s, most leadership theorists believed in noncontingency theories when attempting to explain leadership behavior. Fiedler (1967) was one of the
pioneers in using a contingency theory to form hypotheses concerning leadership behavior. For his contingency, or situational theory of leadership, Fiedler developed the Least Preferred Co-worker (LPC) scale. According to Fiedler, by answering a series of questions on the LPC scale, the leader can identify the workers with whom he or she has to work, and rate them accordingly. With Fiedler's LPC scale, if the leader ranks a worker low on the scale, then that worker will be viewed as a task-oriented type of person. A worker or follower that ranks high on the scale will be viewed as a relationship-motivated type of person.

Another situational theory of leadership is House's (1971) path-goal theory. The path-goal theory, first introduced by Evans (1970) and later revised by House (1971), stated that motivating followers should be one of the most important roles of a leader. The path-goal theory postulates that the leader should make the paths and goals very clear to the followers and whenever possible provide subordinates with rewards to supplement those rewards that may be found in the environment.

In 1969, Hersey and Blanchard introduced their situational leadership theory. They postulated that "an effective leader is able to adapt his style of leader behavior to the needs of the situation and the followers" (Hersey & Blanchard, 1969, p. 71). To Hersey and Blanchard, the
environment in which the task is accomplished is a very important factor when considering the behavior or style of leadership. Hersey (1984) wrote, "research has shown that a leader's success is affected by the environment" (p. 43). In their theory, the environment includes all of the elements surrounding the situation at hand. Thus, "leader effectiveness depends upon interaction among the leader, follower, boss, associates, organization, job demands, and time constraints" (Hersey, 1984, p. 43). Hersey and Blanchard's situational theory of leadership differs from other theories in the sense that besides the task and relationship dimensions, they introduced the term effectiveness to the equation. By doing so, they created the Tri-Dimensional Leader Effectiveness Model. Using the model, followers could determine the effectiveness of the leader. The Tri-Dimensional Leadership Effectiveness Model suggested four different styles of leadership: (1) high task, in which the leader is primarily concerned with the task; (2) high task and relationship, in which the leader wants to get the task accomplished but is also concerned with the followers' personal well-being; (3) high relationship, in which the leader is more concerned with the needs of the individual than with accomplishing the task; and (4) low task and relationship, in which the leader has a low concern for both the personal well-being of the followers and the task.
In their situational leadership theory, Hersey and Blanchard (1982) proposed four styles of leadership: directing, coaching, supporting, and delegating. According to their theory, the leader will select the appropriate style of leadership to use depending on the maturity of the followers. For followers with a low level of maturity, Hersey and Blanchard (1982) suggested a directing style of leadership. As the followers' level of maturity progresses, the leader should use a coaching style, then a supporting one. Finally, for very mature followers, the leader should implement a delegating style of leadership.

There are other situational styles of leadership theories such as Vroom and Yetton's (1973) theory. In their Normative Decision Model, Vroom and Yetton stated that in order to include the followers in the decision-making process, the leader must consider various situational factors, such as the support of the groups towards the leader, the time that the group has to accomplish the task, and the knowledge that the leader has about the task to be accomplished.

There is also Blake and Mouton's (1964) managerial grid theory. Blake and Mouton postulated that a leader has two primary concerns: one is production and the other is people. Accordingly, Blake and Mouton constructed a grid that reflects both of the leader's concerns; the horizontal axis shows production and the vertical axis
indicates the people. To Blake, Mouton, and McCanse (1989), "these two axes show us how the two concerns interact and come together to create a single coherent attitude in the case of each grid style. Each of the grid styles describes different ways in which managers think about accomplishing results with and through people" (p. 41).

As the many leadership theories tend to demonstrate, no perfect or most effective style of leadership exists that a leader can adopt and use in all occasions. Research proves that when choosing a leadership style, the leader must consider many factors before deciding what style he or she should profess. This study is concerned with the relationship between the leadership style of the superintendents and the effectiveness of the school districts of the Puerto Rican Educational Department.

School District Effectiveness

People can choose to measure school effectiveness in many ways. In the words of Madaus et al. (1980) "the functioning of schools has been assessed by different publics using different techniques and criteria" (p. 3). While most people tend to view schools as simple organizations, others, such as Lieberman (1986), think of schools as "complex organizations that need complex ways of thinking about them" (p. vii). When viewing schools as complex
organizations, researchers have identified many different elements as factors that will make a school effective or ineffective.

Historically, in the United States different emphases have been placed on various aspects of the educational process when trying to assess its performance. From an early emphasis on schooling, through the equality issues of the 1960s and 1970s, and to the present focus on quality, the system has undergone many changes. About the evolution of the school educational system, Warren (1978) wrote, "expanding the history of American education beyond an earlier emphasis on schooling has encouraged research on a broad range of topics and issues" (p. 21).

In 18th- and 19th-century America, the emphasis in education was on survival. Marks (cited in Austin & Garber, 1985) noted that "during this period America was a land of opportunity in a country of rugged individualists" (p. 7). When a more formal style of education developed in the 1800s, more people gained access to formal education. Perkison (cited in Austin & Garber, 1985) suggested "that this democratization of the educational system was intended to perform a leveling or equalizing function to reduce the advantages of inherited wealth" (p. 7). At the same time, the country was going through the Industrial Revolution, which required more formally educated people in the work place.
During the early 1900s, the United States Army introduced the IQ test as a way to test intelligence. Soon after, it was also being used in schools throughout the country to measure student achievement. With the invention of objective measurement, the science of individual differences was born (Gould, 1981).

In modern education, standardized testing has become one of the primary indicators to measure school effectiveness. In their commentary about the relative ineffectiveness of schools in the United States in comparison with other national educational systems, Kearns and Doyle (1988) observed that standardized tests have a powerful influence on American schools. For example, in the United States, the federal and state governments use standardized test scores to determine how much financial aid a school district will receive from different governmental sources. Berliner (1979) wrote that the state and federal government, and local parents support standardized instruments to measure school district effectiveness. Because standardized test scores are very precise and easy to administer, many school officials tend to use them to measure district effectiveness. However, standardized tests alone cannot be the only factor to gauge school effectiveness.

Since late in the 19th century, student enrollment trends have been another popular way of measuring school effectiveness. During the 1890s, many states passed into
law legislation that made schooling compulsory, and public attitudes toward compulsory schooling appear to become more positive in the years following 1890 (Tyack, 1978). The rationale behind compulsive school attendance is that it helps to develop individual potential, which, in turn, benefits the state through the individual's economic contributions. In his 1842 Annual Report as Secretary of the Board of Education in Massachusetts, Horace Mann (cited in Tyack, 1978) professed his belief in schooling as an economic benefit for the state. Tyack commented on Horace Mann's opinion about compulsory schooling: "He argued that education not only produced good character and multiplied knowledge but that it is also the most prolific parent of material riches" (p. 79).

In the 1990s, student enrollment trends are still a very important factor in determining how well a district is functioning. Student graduation and dropout rates are some of the criteria that school officials use to measure the effectiveness of a school district. Thus, when commenting about the objective criteria that must be considered when assessing the effectiveness of a school district, Lewis (1986) included student graduation and dropout rates among the key elements to measure educational success. When describing seven indicators to measure accomplishment in the public schools, Heller and Montgomery (1989) listed dropout and graduation rates as
two of those indicators. As with standardized test scores, dropout and graduation rates are precise and easy to measure, and widely used by school officials to measure efficacy.

This study researched the relationship between a superintendent's style of leadership and the effectiveness of the school district. The effectiveness of the school district was measured using the following indicators: (a) student achievement as measured by standardized tests, (b) student dropout rates, and (c) 12th grade students' graduation rate.

Literature dealing with school effectiveness provides many ways of measuring school success—both in objective and subjective ways. When describing objective criteria to measure school effectiveness, Lewis (1986) mentioned:

- academic achievement scores;
- student and teacher attendance rate;
- scores on the SATs;
- number of students admitted to colleges and universities;
- number of students receiving scholarship awards;
- average cost to educate a student;
- number of library books per student; and dropout rate. (p. xii).

For subjective criteria used to measure school effectiveness, Lewis listed:

- quality of school management;
- quality of instructional resources, teaching, and services;
- financial soundness;
- ability to attract, develop, and keep talented people;
- use of the school district resources;
- community responsibility;
- appropriateness of procedures for monitoring student learning and growth;
- parental involvement; and state of school district culture. (p. xiv)
When naming the indicators and criteria necessary to measure school effectiveness, Heller and Montgomery (1989) included objective as well as subjective elements. They listed the following objective criteria: "student performance on standard achievement tests; student success in high school or postsecondary education; attendance rates for both students and teachers, and student suspensions and other exclusions; dropout rates; and awards for outstanding school programs and teaching" (p. xiv). Their listing of subjective criteria included "clear academic goals; high expectations for students; development of good character and values; teacher input and staff development; positive school climate; administrative leadership; and community support and involvement" (p. xiii).

Comparing the objective and subjective criteria, one can understand why officials prefer to use objective rather than subjective criteria to measure school and district effectiveness. The objective criteria are easier to measure and analyze. Using subjective criteria involves many options such as surveying the personnel in the school to measure school climate, or analyzing millage passing rates as a way to determine community support. These methods tend to be expensive, time consuming, and many times, controversial. Objective criteria, on the other hand, are very precise, less time consuming, and in many cases, less expensive. Many school officials
advocate the use of objective criteria to measure school effectiveness; others favor subjective criteria, and still others believe that both types of criteria should be considered.

For time constraints and the setting in which the research took place, the current study measures school district effectiveness by using the following data: students' achievement as measured by standardized tests, students' dropout rate, and 12th grade students' graduation rate. All the scores related to the effectiveness of the school districts were measured using the same indicators.
CHAPTER III

METHODOLOGY

The purpose of this study was to measure the relationship between the style of leadership of the superintendent and the effectiveness of the school district. The study was done in the Education Department of Puerto Rico. The style of leadership of the superintendents was measured using the Leader Behavior Analysis II-Self (Blanchard et al., 1990) questionnaire. The school district's effectiveness was measured using the following indicators: (a) students' achievement as measured by standardized tests, (b) students' dropout rate, and (c) 12th grade students' graduation rate. Following is a description of the methodology used to conduct the study.

The Setting

The study was conducted in the Education Department of Puerto Rico. The island has been a possession of the United States since 1898, and a commonwealth since 1952. Because of the close relationship between the United States and Puerto Rico, many of the social institutions on the island reflect those on the mainland. The Department of Education is no exception. In many important
aspects, such as revenue sources and centralized versus decentralized power bases, the educational systems of Puerto Rico and the United States may vary. However, in many other aspects, such as curriculum subject-matter and evaluation and measuring techniques, both educational systems are very similar.

The Puerto Rican Department of Education has three levels of power: (1) central, (2) regional, and (3) local. At the central level, the department is directed by the Secretary of Education, who is a member of the island's executive cabinet. The Secretary of Education directs the Subsecretary of Education and 10 auxiliary secretaries. At the regional level, the department is divided into seven regions, and each region has a regional director. The regions, then, are divided into school districts, with a total of 100 school districts in the system. Each school district has a superintendent, for a total of 100 superintendents. For the purpose of this study, the entire population of 100 (N = 100) superintendents was surveyed.

The Department of Education of Puerto Rico measures its effectiveness and that of its school districts in much the same manner as does the Department of Education in the United States. The department used objective as well as subjective criteria when measuring the system's success. Similar to the system of the United States, the
Education Department of Puerto Rico uses students' achievement scores and students' dropout and graduation rates as indicators of the school districts' effectiveness.

In 1989, the educational system of Puerto Rico had an enrollment of 651,225 students, K-12. In the same year, 37,538 teachers and 23,733 nonclassified personnel worked in the system. The official language of the island is Spanish, but the curricula and subject matters taught in the classroom are very similar to those of the educational systems in the United States. As in the United States, the Education Department of Puerto Rico places special emphasis on teaching students essential subjects such as mathematics, reading, and writing—coupled with other classes in science, social studies, fine arts, and recreation.

Variables in the Study

Independent Variable

The independent variable of the study was the leadership style of superintendents in the Puerto Rican Education Department. The data obtained were used to determine if a superintendent's style of leadership has any significant relationship with the dependent variable, the effectiveness of the district.
Measuring Instrument

The study analyzed the relationship between the style of leadership of the superintendent and the effectiveness of the school districts. The superintendent's leadership style was measured using the Leader Behavior Analysis II-Self (Blanchard et al., 1991) questionnaire. The instrument was developed and marketed by the Blanchard Training and Development Company in Escondido, California.

During the last three decades, several instruments have been developed to measure styles of leadership. In the mid-1950s, a group of investigators at Ohio State University developed the Leadership Behavior Description Questionnaire (LBDQ, Halpin & Winer, 1957). Boles and Davenport (1982) cited Shartle and Stogdill and Coons as using the LBDQ with military and business personnel, as well as Halpin, who used the LBDQ with school superintendents. According to Boles and Davenport, the LBDQ has gone through many changes throughout the years and is now in its 12th version.

Another instrument for measuring styles of leadership is Hall and Williams's (1982) Leadership Styles Questionnaire. The instrument has 12 questions or situations to which the participant responds by grading his or her behavior on a scale of 1 to 10, depending on how
characteristic or uncharacteristic the behavior is to the person answering the questionnaire. The Leadership Styles Questionnaire has a Spanish version, and for that reason it was considered as a good instrument to measure the style of leadership of the superintendents in Puerto Rico. However, the complicated system of answering and scoring the questions could have been a problem for the superintendents, and hence deter some of them from responding to the survey.

The instrument selected to measure the styles of leadership of the superintendents of the Education Department of Puerto Rico was Leader Behavior Analysis II-Self (LBAII, Blanchard et al., 1990). The LBAII has its origins in the work of Hersey and Blanchard (1969) and their situational leadership theory. In 1985, the authors of the LBA, using the original LBA format, created the LBAII (Zigarmi, Edeburn, & Blanchard, 1991). The instrument presents the participant with 20 situations in which the respondent chooses the most appropriate answer out of four alternatives, from A to D. Depending on the participant responses, the LBAII-Self will classify the style of leadership into one of four categories. Blanchard et al. (1991) described the four leadership styles as follows:

1. SI or Directing: High directive and low supportive behavior. The leader has specific goals and
direction for the followers and will closely supervise them.

2. S2 or Coaching: High directive and high supportive behavior. The leader asks for the input of the followers but continues to direct task accomplishment.

3. S3 or Supporting: High supportive and low directive behavior. The leader shares the decision-making process with the followers and supports their efforts toward task accomplishment.

4. S4 or Delegating: Low supportive and low directive behavior. The leader turns over the decisions and responsibilities to the followers.

The LBAII-Self also measures the flexibility and effectiveness of the style of leadership of the participant. A Spanish version of the LBAII-Self was used in the study.

Zigarmi et al. (1991) reported "the internal consistencies of the LBAII-Self to be adequate normal for self-report instruments (ranging from a low of .43 to a high of .60)" (p. 87). For the Spanish version of the LBAII-Self, Serafin (1991) reported an alpha reliability coefficient of .559 and a standardized item alpha of .553. According to Serafin, "the consistency of the Spanish version is only .04 different from the highest reliability coefficient found in the English version of the LBAII-Self" (p. 49).
Besides the questionnaire, a letter from the Subsecretary of Education, Puerto Rico, in charge of investigations and innovations, granting permission for the study, and a return-stamped envelope were also included in the package sent to the superintendents. An introduction letter explained the study and guaranteed anonymity to the participants.

**Dependent Variable**

The dependent variable of the study was the effectiveness of the school districts in the Puerto Rican Department of Education. This variable was determined by taking into consideration three indicators: (1) sixth-grade student scores on standardized Spanish, mathematics, and English tests; (2) 12th grade student graduation rate; and (3) overall student dropout rate.

Different criteria can be considered when measuring school districts' efficiency. As Lewis (1986) pointed out, merit in schools can be judged by both objective and subjective criteria. In this study, objective data were used to determine the effectiveness of the school districts. The analyzed data were for the 1988-89 school year.
The Study

For the study, questionnaires were distributed to the 100 school district superintendents in the Puerto Rico Department of Education. According to Ary, Jacobs, and Razavieh (1990), "Questionnaires do not elicit as high a completion rate as the interview. A low response rate limits the generalizability of the results of a questionnaire study" (p. 421). Subsequently, in this study, a total of 60 questionnaires was collected. After initial distribution, a follow-up letter was sent to all 100 superintendents reminding them to answer and return the questionnaire. A month later, a response rate of only 15 necessitated sending a second follow-up letter to 80 of the superintendents. Included with this reminder was another copy of the questionnaire. Two months later, given a response rate of only 24 questionnaires, a personal trip to Puerto Rico became necessary during which 25 superintendents received visits. Afterward, the number of questionnaires collected totaled 42. Finally, after 25 to 30 phone calls to the superintendents who previously had not responded, the number of replies became 49, and the last 11 questionnaires collected were returned via a delegate in Puerto Rico.

Tabulation of the answers on the collected questionnaires showed that only two out of the possible four
styles of leadership had been selected by participants: S2 Coaching and S3 Supporting.

Data to measure the effectiveness of the school districts were obtained by means of a personal visit to the Central Offices of the Education Department of Puerto Rico in Hato Rey. Officials at the Education Department supplied data showing the test score percentages for sixth-grade students who scored from 70% to 100% in each of three subjects: Spanish, mathematics, and English. The tests were administered by the Central Office of the Education Department during the 1988-89 school year.

The numbers showing the percentage of students who had dropped out of school during the 1988-89 school year were also collected. The dropout percentage included the total student population in the system, 1st to 12th grade. Also collected were data showing the percentage of students who had graduated from the 12th grade at the end of the 1988-89 school year.

Data used to measure the effectiveness of the 60 superintendents who had answered the questionnaire are public information, obtained from the Central Office of the Department of Education, Hato Rey, Puerto Rico.

Research Hypotheses

The purpose of the study was to determine if a significant relationship exists between the leadership styles
of superintendents in the Puerto Rico Education Department and the effectiveness of their school districts.

**Conceptual Hypothesis**

Does a significant relationship exist between the leadership style of the superintendents and the effectiveness of their school districts?

**Operational Hypotheses**

School district efficacy can be measured by considering many factors besides the ones used in this study. The three elements used in the study to measure school district efficiency involve objective data. About measuring school effectiveness, Madaus et al. (1980) wrote:

> A school may be effective to the extent that there is congruence between its objectives and its achievements. In other words, it is effective to the extent that it accomplishes what it sets out to do. Given the large range of school objectives, a comprehensive study of school effectiveness would be a very vast effort indeed. (p. 22)

In the current study, significant differences in the means that measured effectiveness were not expected. For this reason, the operational hypothesis was stated in the null form. Because five different elements were used to measure the effectiveness of the school districts, five different null hypotheses are stated.
**Hypothesis 1:** No significant difference occurs in the mean of the Spanish test scores of students in the sixth grade for school districts with superintendents using an S2 Coaching leadership style as opposed to school districts with superintendents using an S3 Supporting leadership style.

**Hypothesis 2:** No significant difference occurs in the mean of the mathematics test scores of students in sixth grade for school districts with superintendents using an S2 Coaching leadership style as opposed to school districts with superintendents using an S3 Supporting leadership style.

**Hypothesis 3:** No significant difference occurs in the mean of the English test scores of students in sixth grade for school districts with superintendents using an S2 Coaching leadership style as opposed to school districts with superintendents using an S3 Supporting leadership style.

**Hypothesis 4:** No significant difference occurs in the mean of the percentage of 12th grade students who graduated from districts with superintendents using an S2 Coaching leadership style as opposed to the mean of the percentage of 12th grade students who graduated from school districts with superintendents using an S3 Supporting leadership style.
Hypothesis 5: No significant difference occurs in the means of the percentage of students from all grades who dropped out of school for school districts with superintendents using an S2 Coaching leadership style as opposed to school districts with superintendents using an S3 Supporting leadership style.
CHAPTER IV

FINDINGS OF THE STUDY

The purpose of this study was to measure the relationship between the self-reported leadership styles of superintendents in the Puerto Rico Education Department and the relative effectiveness of their school districts. The leadership style of 60 superintendents was measured using the Leader Behavior Analysis II-Self, developed by Blanchard et al. (1990). The effectiveness of the districts was measured using the percentage of students that graduated from 12th grade, the percentage of all students that dropped out of school, and the percentage of sixth grade students who scored from 70% to 100% in standardized tests administered by the Central Office of the Education Department in three subject areas: Spanish, mathematics, and English.

The operational hypotheses for the study were as follows:

Hypothesis 1: No significant difference occurs in the mean of the Spanish test scores of students in the sixth grade for school districts with superintendents using an S2 Coaching leadership style as opposed to school districts with superintendents using an S3 Supporting
leadership style.

**Hypothesis 2:** No significant difference occurs in the mean of the mathematics test scores of students in sixth grade for school districts with superintendents using an S2 Coaching leadership style as opposed to school districts with superintendents using an S3 Supporting leadership style.

**Hypothesis 3:** No significant difference occurs in the mean of the English test scores of students in sixth grade for school districts with superintendents using an S2 Coaching leadership style as opposed to school districts with superintendents using an S3 Supporting leadership style.

**Hypothesis 4:** No significant difference occurs in the mean of the percentage of 12th grade students who graduated from districts with superintendents using an S2 Coaching leadership style as opposed to the mean of the percentage of 12th grade students who graduated from school districts with superintendents using an S3 Supporting leadership style.

**Hypothesis 5:** No significant difference occurs in the means of the percentage of students from all grades who dropped out of school for school districts with superintendents using an S2 Coaching leadership style as opposed to school districts with superintendents using an S3 Supporting leadership style.
The independent variable of the study was the leadership style of the school district superintendents in the Education Department of Puerto Rico. A Leader Behavior Analysis II-Self (Blanchard et al., 1990) questionnaire was sent to each one of the 100 superintendents; 60 questionnaires were returned. The questionnaire presented the superintendents with 20 different situations in the workplace and each situation had four alternative answers. Answers for the 60 were tabulated. Out of the four possible leadership styles to choose (S1 Directing, S2 Coaching, S3 Supporting, and S4 Delegating), the superintendents who returned the questionnaires preferred two styles only: S2 Coaching and S3 Supporting. Out of the 60 respondents, 17 of the superintendents used an S2 Coaching leadership style, and 43 superintendents used an S3 Supporting leadership style.

The dependent variable of the study was the degree of effectiveness of the school districts. The effectiveness of the school districts was measured using the dropout rate of the overall student population; the graduation rate for students in the 12th grade; and the scores on Spanish, mathematics, and English on standardized tests given to students in the sixth grade.

For this study, each school district was assigned the following numbers: the percentage of dropouts, percentage of students who graduated from 12th grade, and
percentage of sixth grade students who scored from 70% to 100% in each one of the standardized tests administered by the Central Office of the Education Department. After assigning each district five numbers equivalent to an effectiveness rating, the participating districts (60) were divided in two groups, S2 Coaching and S3 Supporting, then contrasted to each other to determine differences.

To test the hypotheses, parametric statistical tests were used. The superintendents were divided according to which one of the two styles of leadership they preferred, S2 Coaching or S3 Supporting. With only two independent means to compare for significant differences, a two-tailed t test was performed to test each one of the five operational hypotheses.

Presentation and Analysis of the Data

Superintendents' Leadership Styles

Only two styles of leadership, out of four possible styles, were chosen by the superintendents who returned the questionnaires. These styles are the S2 Coaching and the S3 Supporting styles of leadership—as opposed to the S1 Directing and the S4 Delegating leadership styles.

Table 1 shows the self-reported leadership styles of participating superintendents. From a total of 60 superintendents who responded to the questionnaire, 17 (28%)
preferred the S2 Coaching leadership style. The other 43 (72%) of the superintendents preferred the S3 Supporting leadership style. None of the superintendents who responded to the questionnaire chose the S1 Directing or the S4 Delegating leadership styles.

Table 1
Self-Reported Leadership Styles of Superintendents

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School District Effectiveness

Data used to measure school district effectiveness were collected from the Central Office of the Education Department and corresponded to the 1988-89 school year.

Table 2 summarizes the data that represent the effectiveness of the school districts. The school districts are identified by assigned numbers; data representing school district effectiveness are presented in percentages.
Table 2
School District Effectiveness Data (Percentages)

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<td>29</td>
<td>43</td>
<td>0.7</td>
</tr>
<tr>
<td>82</td>
<td>75</td>
<td>60</td>
<td>44</td>
<td>66</td>
<td>1.3</td>
</tr>
<tr>
<td>85</td>
<td>89</td>
<td>36</td>
<td>39</td>
<td>39</td>
<td>1.1</td>
</tr>
<tr>
<td>87</td>
<td>90</td>
<td>55</td>
<td>38</td>
<td>35</td>
<td>1.7</td>
</tr>
<tr>
<td>88</td>
<td>83</td>
<td>40</td>
<td>30</td>
<td>30</td>
<td>1.8</td>
</tr>
<tr>
<td>90</td>
<td>85</td>
<td>48</td>
<td>26</td>
<td>39</td>
<td>0.4</td>
</tr>
<tr>
<td>94</td>
<td>89</td>
<td>41</td>
<td>24</td>
<td>34</td>
<td>1.4</td>
</tr>
<tr>
<td>95</td>
<td>93</td>
<td>58</td>
<td>27</td>
<td>39</td>
<td>1.6</td>
</tr>
<tr>
<td>96</td>
<td>90</td>
<td>48</td>
<td>27</td>
<td>24</td>
<td>1.2</td>
</tr>
<tr>
<td>99</td>
<td>55</td>
<td>39</td>
<td>10</td>
<td>32</td>
<td>1.4</td>
</tr>
<tr>
<td>100</td>
<td>62</td>
<td>47</td>
<td>32</td>
<td>29</td>
<td>1.2</td>
</tr>
</tbody>
</table>

Note. ID = school district. Grad. = graduation percentage of students in 12th grade. Span. = percentage of students in 6th grade who scored from 70% to 100% in the Spanish test. Math. = percentage of students in the 6th grade who scored from 70% to 100% in the mathematics test. Engl. = Percentage of students in the 6th grade who scored from 70% to 100% in the English test. Drop = Percentage of overall students population (1st to 12th grade) who dropped out of school.
Hypothesis 1

No significant difference occurs in the mean of the Spanish test scores of students in the sixth grade for school districts with superintendents using an S2 Coaching leadership style as opposed to school districts with superintendents using an S3 Supporting leadership style.

To test Hypothesis 1, a two-tailed $t$ test was conducted. The Spanish test scores for sixth grade students for the 60 school districts participating in the study were collected. These scores were divided between school districts using superintendents with an S2 Coaching leadership style and school districts with superintendents employing an S3 Supporting leadership style. Thus, 17 school districts are led by superintendents with an S2 Coaching leadership style, and 43 school districts are headed by superintendents with an S3 Supporting leadership style. A two-tailed $t$ test with a $.05$ alpha level was performed to find the means and standard deviations of both groups and to determine if a significant difference exists between the means of the two groups. The $t$ test for this study had 58 degrees of freedom. For a two-tailed $t$ test with 58 degrees of freedom and a $.05$ alpha level, the $t$ test table established a 2.000 critical value.
Table 3 shows the findings of the $t$ test. The mean for the superintendents with an S2 Coaching leadership style was 50.5; for superintendents with an S3 Supporting leadership style it was 54.7. The standard deviation for the S2 Coaching group is 11.1 and for the S3 Supporting group it is 8.9. After the $t$ test, a difference between the means of two groups was observed. To establish the significance of such difference, the observed value was compared with the critical value on the $t$ table. For a two-tailed $t$ test with 58 degrees of freedom and a .05 alpha level, the $t$ table shows a critical value of 2.000. That critical value exceeded the $t$ observed value of -1.53. Therefore, the difference between the two means is not significant enough to reject null Hypothesis 1. The results of the $t$ test suggest that the leadership style of the superintendents is not the only factor causing the difference between the means of the two groups.

Hypothesis 2

No significant difference occurs in the mean of the mathematics test scores of students in the sixth grade for school districts with superintendents using an S2 Coaching leadership style as opposed to school districts with superintendents using an S3 Supporting leadership style.
Table 3
Means, Standard Deviations, and t-Test Results for the Variable Spanish Test Scores and Leadership Style

<table>
<thead>
<tr>
<th>Leadership style</th>
<th>S2 Coaching (n = 17)</th>
<th>S3 Supporting (n = 43)</th>
<th>Two-tailed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variable</td>
<td>X</td>
<td>SD</td>
<td>X</td>
</tr>
<tr>
<td>Spanish test scores</td>
<td>50.5</td>
<td>11.1</td>
<td>54.7</td>
</tr>
</tbody>
</table>

*p ≤ .05.

In regards to testing Hypothesis 2, the mathematics test scores of the 60 districts participating in the study were collected. The scores were divided according to the leadership styles of the superintendents, S2 Coaching or S3 Supporting. Seventeen superintendents chose the S2 Coaching leadership style, and 43 chose the S3 Supporting leadership style. A two-tailed t test was conducted to determine the means and standard deviations of the two groups and to find out if a significant difference arises between the means of the two groups.

The results of the t test for Hypothesis 2 are presented in Table 4. The mean for the group with the S2 Coaching leadership style is 36.3; for the S3 Supporting
group, the mean is 36.4. The S2 Coaching group has a standard deviation of 9.0. For the S3 Supporting group, the standard deviation is 11.7. The observed value of -.02 does not exceed the critical value of 2.000 on the t table for a two-tailed t test with 58 degrees of freedom and a .05 alpha level. Therefore, operational null Hypothesis 2 is accepted. The difference between the two means is not significant enough to show that the leadership style of the school district superintendents is the only factor that influences the district's efficiency.

Table 4
Means, Standard Deviations, and t-Test Results for the Mathematics Test Scores and Leadership Style

<table>
<thead>
<tr>
<th>Leadership style</th>
<th>S2 Coaching (n = 17)</th>
<th>S3 Supporting (n = 43)</th>
<th>Variable</th>
<th>( \bar{X} )</th>
<th>SD</th>
<th>( \bar{X} )</th>
<th>SD</th>
<th>df</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mathematics test scores</td>
<td>36.3</td>
<td>9.0</td>
<td>36.4</td>
<td>11.7</td>
<td>58</td>
<td>-0.02</td>
<td>.983</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*\( p \leq .05 \).
Hypothesis 3

No significant difference occurs in the mean of the English test scores of students in the sixth grade for school districts with superintendents using an S2 Coaching leadership style as opposed to school districts with superintendents using an S3 Supporting leadership style.

In regards to testing Hypothesis 3, the scores of the English test were collected and divided between the two groups participating in the study, S2 Coaching and S3 Supporting. A two-tailed t test was performed to find the means and standard deviation for both groups and also to determine if a significant difference occurs between the means of the two groups.

Table 5 presents the findings of the t test. The group of superintendents with the S2 Coaching leadership style has a mean of 39.4 and a standard deviation of 12.6. The group of superintendents using the S3 Supporting leadership style has a mean of 43.9 and a standard deviation of 10.5. In the t table, the critical value for a two-tailed t test with a .05 alpha level and with 58 degrees of freedom is 2.000. The observed value of -1.38 in the t test does not exceed the critical value. Therefore, the results of the t test indicate that the difference between the means of the groups is not significant enough to reject Hypothesis 3. The difference
between the means can be caused by other factors besides the leadership styles of the superintendents.

Table 5
Means, Standard Deviations, and t-Test Results for the English Test Scores and Leadership Style

<table>
<thead>
<tr>
<th>Leadership style</th>
<th>S2 Coaching ( (n = 17) )</th>
<th>S3 Supporting ( (n = 43) )</th>
<th>Two-tailed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variable</td>
<td>( \bar{X} )</td>
<td>SD</td>
<td>( \bar{X} )</td>
</tr>
<tr>
<td>English test scores</td>
<td>39.4</td>
<td>12.6</td>
<td>43.9</td>
</tr>
</tbody>
</table>

*\( p \leq .05 \).*

**Hypothesis 4**

No significant difference occurs in the mean of the percentage of 12th grade students who graduated from districts with superintendents using an S2 Coaching leadership style as opposed to the mean of the percentage of 12th grade students who graduated from school districts with superintendents using an S3 Supporting leadership style.

For Hypothesis 4, data concerning the percentage of 12th grade students who had graduated during the 1988-89
school year were collected, and each school district was assigned its corresponding percentage. The school districts were divided into two groups according to the leadership styles of the superintendents, S2 Coaching and S3 Supporting. To determine the means, standard deviations, and whether any significant difference occurs in the means of both groups, a two-tailed $t$ test was performed.

Table 6 presents the results of the $t$ test. Group S2 Coaching has a mean of 88.6 and a standard deviation of 9.3. Group S3 Supporting has a mean of 88.5 and a standard deviation of 9.0. The two-tailed $t$ test has 58 degrees of freedom and a .05 alpha level. After the $t$ test, a difference in means was detected between the two participating groups. However, the observed value of 0.6 does not exceed the $t$-table critical value of 2.000. Therefore, the difference between the two means is not considered significant enough to reject the null hypothesis. Hypothesis 4 is accepted at .05 alpha level. The difference in means between the two groups can result from other effects besides the leadership styles of the superintendents.

**Hypothesis 5**

No significant difference occurs in the means of the percentage of students from all grades who dropped out of
Table 6
Means, Standard Deviations, and t-Test Results for the Percentage of Students Graduating From 12th Grade and Leadership Style

<table>
<thead>
<tr>
<th>Leadership style</th>
<th>S2 Coaching (n = 17)</th>
<th>S3 Supporting (n = 43)</th>
<th>Two-tailed</th>
</tr>
</thead>
<tbody>
<tr>
<td>12th grade graduates</td>
<td>( \bar{X} ) 88.6  SD 9.3</td>
<td>( \bar{X} ) 88.5  SD 9.0</td>
<td>df 58  t -0.6  p .951</td>
</tr>
</tbody>
</table>

\*p \leq .05.

For Hypothesis 5, the dropout percentages of each participating school district were collected. The school districts were divided into two groups, S2 Coaching and S3 Supporting. A two-tailed t test was performed to find out the means and standard deviations of the groups and to find out if any significant difference exists between group means.

Table 7 shows the results of the t test for Hypothesis 5. The S2 Coaching group has a mean of 1.5 and a
standard deviation of .47. The S3 Supporting group has a mean of 1.4 and a standard deviation of .70. The two-tailed t-test has 58 degrees of freedom and a .05 alpha level. To test if the difference between means is significant, the observed value of .26 was compared with the t-table critical value of 2.000. The observed value does not exceed the critical value; therefore, the difference between the two means is not significant enough to reject null Hypothesis 5. Hypothesis 5 is accepted at .05 alpha level. The difference between the means could result from another effect besides the leadership styles of the school district superintendents.

Table 7
Means, Standard Deviations, and t-Test Results for Student Dropout and Leadership Style

<table>
<thead>
<tr>
<th>Leadership style</th>
<th>S2 Coaching (n = 17)</th>
<th>S3 Supporting (n = 43)</th>
<th>Two-tailed</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>( \bar{X} )</td>
<td>SD</td>
<td>( \bar{X} )</td>
</tr>
<tr>
<td>Variable</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dropouts</td>
<td>1.5</td>
<td>0.47</td>
<td>1.4</td>
</tr>
</tbody>
</table>

\*p ≤ .05.
Summary

The purpose of this study was to measure the relationship between the self-reported leadership styles of the superintendents in the Education Department of Puerto Rico and the effectiveness of the school districts. The leadership styles of 60 superintendents were measured using the Leader Behavior Analysis Self-II, developed by Blanchard et al. (1990). The effectiveness of the districts was measured using the percentage of students who had graduated from 12th grade, the percentage of all students who had dropped out of school, and the percentage of sixth grade students who scored from 70% to 100% in standardized tests administered by the Central Office of the Education Department in three subjects.

The operational hypotheses for the study were as follows:

**Hypothesis 1:** No significant difference occurs in the mean of the Spanish test scores of students in the sixth grade for school districts with superintendents using an S2 Coaching leadership style as opposed to school districts with superintendents using an S3 Supporting leadership style.

**Hypothesis 2:** No significant difference occurs in the mean of the mathematics test scores of students in sixth grade for school districts with superintendents
using an S2 Coaching leadership style as opposed to school districts with superintendents using an S3 Supporting leadership style.

**Hypothesis 3:** No significant difference occurs in the mean of the English test scores of students in sixth grade for school districts with superintendents using an S2 Coaching leadership style as opposed to school districts with superintendents using an S3 Supporting leadership style.

**Hypothesis 4:** No significant difference occurs in the mean of the percentage of 12th grade students who graduated from districts with superintendents using an S2 Coaching leadership style as opposed to the mean of the percentage of 12th grade students who graduated from school districts with superintendents using an S3 Supporting leadership style.

**Hypothesis 5:** No significant difference occurs in the means of the percentage of students from all grades who dropped out of school for school districts with superintendents using an S2 coaching leadership style as opposed to school districts with superintendents using an S3 Supporting leadership style.

To test the five operational hypotheses, a two-tailed *t* test with a .05 alpha level was performed for each one of the hypotheses. The test results showed a difference in the means of the two participating groups.
for each one of the five hypotheses. However, in a comparison of the observed values with the critical values established by the $t$ table, none of the differences between the means was found to be significant. In all five hypotheses, the critical value was found to be greater than the observed value. Thus, all five operational null hypotheses were accepted at .05 alpha level.

The purpose of this study was to measure the relationship between the leadership style of the school superintendent and the effectiveness of the school district. The results of the study indicate that such a relationship between the two variables is not significant enough to reject the null hypotheses. As suggested by a review of the literature, a relationship between the leadership style of the superintendent and the effectiveness of the school district should be an important and strong one. Thus, when measuring elements involved in making an effective school district, other factors besides the ones tested in this study must be considered. The results of this study show that other factors affect a school district's efficacy besides the leadership style of its superintendent.
CHAPTER V

CONCLUSION AND RECOMMENDATIONS

The purpose of this study was to measure the relationship between the leadership style of a superintendent and the effectiveness of the school district. The study was conducted in the Education Department of Puerto Rico. The leadership style of the superintendents was measured using the Leader Behavior Analysis II-Self (Blanchard et al., 1990) questionnaire. The school district effectiveness was measured using the following indicators: (a) student achievement as measured by standardized tests, (b) student dropout rate, and (c) student graduation rate.

The operational hypotheses for the study were as follows:

Hypothesis 1: No significant difference occurs in the mean of the Spanish test scores of students in the sixth grade for school districts with superintendents using an S2 Coaching leadership style as opposed to school districts with superintendents using an S3 Supporting leadership style.

Hypothesis 2: No significant difference occurs in the mean of the mathematics test scores of students in
sixth grade for school districts with superintendents using an S2 Coaching leadership style as opposed to school districts with superintendents using an S3 Supporting leadership style.

**Hypothesis 3:** No significant difference occurs in the mean of the English test scores of students in sixth grade for school districts with superintendents using an S2 Coaching leadership style as opposed to school districts with superintendents using an S3 Supporting leadership style.

**Hypothesis 4:** No significant difference occurs in the mean of the percentage of 12th grade students who graduated from districts with superintendents using an S2 Coaching leadership style as opposed to the mean of the percentage of 12th grade students who graduated from school districts with superintendents using an S3 Supporting leadership style.

**Hypothesis 5:** No significant difference occurs in the means of the percentage of students from all grades who dropped out of school for school districts with superintendents using an S2 Coaching leadership style as opposed to school districts with superintendents using an S3 Supporting leadership style.
Conclusion

A review of literature suggests that when assessing school districts' effectiveness many factors must be considered. For this study, tangible factors such as test scores, dropout rate, and graduation rate were chosen to measure school district effectiveness. Many school districts prefer to consider these factors when measuring effectiveness because such factors are easy to score and easy to understand. However, these elements alone cannot tell the whole story about effectiveness in the school districts. The literature review showed that there are many factors, tangible and intangible, that should be considered when measuring school districts productivity.

Besides the factors used in this study, other tangible elements can be used to gauge the effectiveness of the school district. These tangible factors include students' and teachers' absenteeism rates, teachers-to-students ratio, the rate of expenditure by pupil, and alternative or extracurricular programs in the district.

The effectiveness of the school districts can also be measured by examining intangible factors, such as climate of the school district, culture, goals or mission, perception of the followers towards the leaders and vice versa, and motivation of the people involved in the
school district.

A study of the effectiveness of the school districts involving all of its factors is an extremely arduous task. Due to the time and distance constraints, this study was limited to the factors described above.

Recommendations

The findings of this study present many questions about the school districts in the Department of Education of Puerto Rico. Further studies are recommended to answer these questions. The primary recommendation is to test the relationship of school district effectiveness and the leadership styles of the superintendents by utilizing other factors than those used in this study. In doing so, new answers may arise as to the measurement of school productivity.

A further recommendation is to explore the reason why all of the participants chose either S2 Coaching or S3 Supporting styles of leadership and why none chose S1 Directing or S4 Delegating styles. A significant factor in the participants choosing only these two styles may have been the structure of the educational system in Puerto Rico. The centralized system, with limited powers delegated to the superintendents, may be a factor influencing which leadership styles the superintendents use. Such a centralized system leaves the superintendent with
little power to implement changes and may require the school district to maintain the status quo. To determine the answers to these questions, a future study will be necessary.

During his travels collecting the questionnaires throughout Puerto Rico, the researcher had the opportunity to visit several school districts. When visiting these school districts, the researcher noticed appreciable differences among them. One difference is the way in which the offices were set up. In many instances, the buildings housing the office of the superintendent are identical in design, yet each district has a different setup. In some districts, there was a very rigid atmosphere, in which there appeared to be much control over employees. For example, some of those rigid offices have only one telephone. Each time an employee needed to use the telephone, the person apparently needed to ask for permission. In addition, in these offices, no dividers separate the desks of the employees and the entrance into the office. Yet, in other offices, there was a more relaxed atmosphere, with plenty of phones, walls dividing the desks of the workers, and a professional entrance into the office. A study is recommended to determine if the atmosphere of the school district offices affects the leadership styles of the superintendents.
When analyzing the data that measured effectiveness, it was apparent that in some cities with more than one school district, there was a tremendous difference in scores between districts. Thus, a study is recommended to examine the factors that cause such differences. In the centralized educational system of Puerto Rico, every school district should receive equal attention and resources. The researcher is inclined to believe that such differences are the result of families having different social and economical backgrounds. In order to reach such conclusion, a study addressing the issue must be completed.

Finally, it is the hope of the researcher in conducting this study, to, in part, facilitate understanding of the school districts comprising the Education Department of Puerto Rico and how they function.
Appendix A

Acknowledgment Letters of Orders for LBAs in Spanish
May 1, 1991

Mr. Carlos Cortez  
Dept. of Educational Leadership  
Sangren Hall  
Western Michigan University  
Kalamazoo, MI  49008

Dear Mr. Cortez:

We are today ordering 110 LBAs in Spanish. They will be
sent to you under separate cover by the shipping department.

May we request that you return the English LBAs which we
sent you previously. They may be sent to the attention of
Jan Kittleson.

Yours truly,

Dr. Drea Zigarmi

Dr. Drea Zigarmi

JK
August 1, 1991

Mr. Carlos Cortez  
Dept. of Educational Leadership  
Sangren Hall  
Western Michigan University  
Kalamazoo, MI 49008

Dear Mr. Cortez:

Per your request, we are today ordering an additional 80 LBA - Self (in Spanish). These should arrive within a few days.

Good luck with your research!

Yours truly,

Dr. Drea Zigarmi  
Research Coordinator

DZ:jk
Appendix B

Letter of Authorization From Puerto Rico Department of Education
2 de abril de 1991

Directores Regionales y Superintendentes de Escuelas

Mayra Huergo, Psy. D.
Secretaría Auxiliar

AUTORIZACIÓN PARA LLEVAR A CABO ESTUDIOS EN EL SISTEMA EDUCATIVO

El Sr. Carlos Cortés, quien cursa estudios conducentes al grado doctoral, en Western Michigan University, realizará el estudio titulado: The relationship between superintendents style of leadership and the District's Effectiveness en las regiones educativas de la Isla.

Autorizo al señor Cortés a visitar los distritos escolares con el propósito de administrar un cuestionario a los superintendentes de escuelas. Coordinará las visitas con los Directores Regionales y Superintendentes de Escuelas.

Solicito se le brinde al señor Cortés la colaboración necesaria para que pueda realizar su estudio.

Esta autorización tiene vigencia hasta el 31 de diciembre de 1991.

El Departamento de Educación no se solidariza necesariamente con las opiniones, o preferencias, que pudieran surgir por razón del estudio.

Anejo
Appendix C

Cover Letters to Superintendents
30 de Julio de 1991.

Estimado(a) Superintendente,

Mi nombre es Carlos Cortes y soy estudiante en el programa de Doctor en Educación en la Universidad de Western Michigan. En la actualidad me encuentro trabajando en mi tesis doctoral, lo cual es la razón para escribirle esta carta.

Mi tesis doctoral se propone investigar si hay alguna relación entre el estilo de liderazgo de un superintendente y la efectividad del distrito escolar de ese(a) superintendente en Puerto Rico. Con el propósito de clasificar el estilo de liderazgo de los superintendentes en el sistema escolar de Puerto Rico, hace dos semanas yo le envié a todos los superintendentes un cuestionario. Como bien le expliqué en esa primera carta, la información obtenida a través de ese cuestionario será totalmente confidencial y bajo ninguna circunstancia su nombre o la información obtenida será divulgada públicamente.

Si usted ya llenó y envió el cuestionario para atrás, yo quiero darle las gracias por su cooperación. Si aún no lo ha hecho, le quiero pedir de favor que lo haga lo más pronto posible. Como usted bien sabe, para poder completar un estudio es necesario obtener la información requerida, en este caso, el cuestionario.

En el plano profesional, el estudio que yo estoy llevando a cabo puede serle muy productivo a usted y a la Universidad de Western Michigan. Por esa razón yo creo que es importante que usted devuelva el cuestionario a la mayor brevedad. En lo que a mí me concierne, si yo no recibo suficientes cuestionarios de los superintendentes, mi estudio será un fracaso y no podré terminar mi Doctorado. Como usted podrá ver, las dos razones son muy importantes.

De nuevo, si usted ya envió su cuestionario muchas gracias por su cooperación. Si no lo ha hecho todavía, favor de hacerlo a la mayor brevedad. Yo le estaré eternamente agradecido. Si tiene alguna pregunta comuníquese conmigo, collect al (616) 387-7482 o escribame a:
Carlos Cortes
Educational Leadership Dept.
Sangren Hall, Third Floor
Western Michigan University
Kalamazoo, Michigan 49008

Gracias por su cooperación.

Sinceramente,
Carlos Cortes
Estimado(a) Superintendente,

Mi nombre es Carlos Cortes y soy estudiante a nivel Doctoral en el Departamento de Educación de la Universidad de Western Michigan. En la actualidad me encuentro trabajando en mi tesis doctoral, la cual es la razón por la que le estoy enviando esta carta.

Mi tesis está relacionada con el Departamento de Educación de Puerto Rico y sus superintendentes. En mi tesis, yo me propongo estudiar si hay alguna relación entre el estilo de liderazgo de los superintendentes y la efectividad de el distrito escolar. Para categorizar la efectividad de los distritos escolares la siguiente información pública será utilizada: estudiantes graduados por distrito; estudiantes dados de baja; y el promedio obtenido por los estudiantes en exámenes de aprovechamiento administrados por el Departamento de Educación. Como usted bien sabe, esa información es de carácter público y se puede obtener en la Oficina Central de el Departamento de Educación.

Hace aproximadamente un mes y medio le envíe a todos los superintendentes (100) de Puerto Rico un cuestionario con el cual me propongo definir el estilo de liderazgo. Por alguna razón, todavía no he recibido el cuestionario que le fue enviado a usted. El estudio que yo propongo debe estar terminado para el mes de Diciembre, 1991. De no terminar yo el estudio para esa fecha me será imposible graduarme y obtener mi Doctorado. Como puede usted ver, es de mucha importancia para mí el recibir este cuestionario a la mayor brevedad. Si usted ya lleno el suyo y lo envío de vuelta, yo quiero agradecerle su cooperación. Si aún no lo ha hecho, le ruego lo haga lo más pronto posible. Yo entiendo que estos son tiempos muy difíciles y de mucho trabajo para usted en su distrito, sin embargo le pido entienda mi posición y me ayude a completar, no solo mi estudio, pero también mi Doctorado.

Para facilitar el proceso de retorno de el cuestionario, adjunto le envío un sobre pre-dirigido y con sello. Si usted tuviese cualquier pregunta relacionada con el estudio favor de comunicarse conmigo a la siguiente dirección:

CARLOS CORTEZ
EDUCATIONAL LEADERSHIP DEPARTMENT
SANGREN HALL, THIRD FLOOR
WESTERN MICHIGAN UNIVERSITY
KALAMAZOO, MI 49008

o llamarme, a cualquier hora, collect al, (616) 387-7482.

Finalmente, quiero de nuevo agradecerle su cooperación, y espero recibir el cuestionario completado a la mayor brevedad posible.

Sínceramente,

CARLOS CORTEZ
Appendix D

Translation of Cover Letter for the Human Subjects Institutional Review Board
Date: July 15, 1991.

To: HSIRB

From: Carlos Cortes

Re: HSIRB Project Number 91-06-12 (Cover Letter)

This letter is an exact translation, from Spanish to English, of the cover letter that will be send to the subjects that will participate in the proposed research.

Dear Superintendent,

My name is Carlos Cortes and I am a Doctoral student in the Educational Leadership Department at Western Michigan University. Currently, I am working in my doctoral dissertation, and that is the reason why I am sending you this letter.

My dissertation is in relation to the Education Department of Puerto Rico and its superintendents. I proposed to study the styles of leadership of the superintendents, and if there is a relationship between their style of leadership and the effectiveness of their school district. The effectiveness of the districts will be analyzed and measured using existing data such as: student dropout rates, student graduation rates and, student scores in standardized tests. As you well know, this data is available for the public at the Department of Education of Puerto Rico, Central Office.

To move forward with my study, it is necessary that you complete the questionnaire that I am sending you. This questionnaire will be send to all the superintendents in the system (100). The information that will be obtained through the questionnaire will be used, only for the proposed study, and all the necessary measures will be taken to guarantee the confidentiality of the participants. Under no circumstances, your name, address, or any other personal information will be used, and in all times, a number will be used to identify all the participants. I, as the principal researcher will be the only person that will know which number correlates to which school district. Also, non-participation on your part will not be disclosed to the Department of Education of Puerto Rico or to anybody else. Enclosed is a letter from the Sub-Secretary of Education of Puerto Rico in charge of investigations given me permission to conduct my research.

Like you well know, the success of any investigation depends on the participation of the subjects and the prompt return of the necessary information. It is for these two reasons that I am asking you, first, for your cooperation in completing the questionnaire, and second, the prompt return to me of the questionnaire. To facilitate the process of returning the questionnaire, enclosed is a self address, stamped envelope. If you have any question regarding the questionnaire or the study, please feel free to contact me at:

Educational Leadership Department
Sangren Hall, Third Floor
Western Michigan University
Kalamazoo, MI. 49008
or call me collect, at any time, at (616) 387-7482.

Finally, I will like to thank you for your cooperation in this study, and hope to receive your questionnaire soon.

Sincerely,
Carlos Cortes

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Appendix E

Approval Letter From the Human Subjects Institutional Review Board
Date: July 17, 1991
To: Carlos Cortes
From: Mary Anne Bunda, Chair
Re: HSIRB Project Number: 91-06-12

This letter will serve as confirmation that your research protocol, "The Relationship Between a Superintendent's Style of Leadership and the Effectiveness of the District as Measured in the Department of Education of Puerto Rico" has been approved under the exempt category of review by the HSIRB. The conditions and duration of this approval are specified in the Policies of Western Michigan University. You may now begin to implement the research as described in the approval application.

You must seek reapproval for any changes in this design. You must also seek reapproval if the project extends beyond the termination date.

The Board wishes you success in the pursuit of your research goals.

xc: Cowden, Educational Leadership

Approval Termination: July 17, 1992


To provide for the organization of a constitutional government by the people of Puerto Rico. (1950, July 30). *Statutes at Large, 64*, 319. Second session of 81st Congress.


