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SCHOOL DISTRICT VARIABLES INCLUDING DISTRICT LEADERSHIP AND THEIR CONTRIBUTION TO STUDENT ACHIEVEMENT IN NEBRASKA CLASS III PUBLIC SCHOOL DISTRICTS

by

Jeffrey D. West

A DISSERTATION

Presented to the Faculty of

The Graduate College at the University of Nebraska

In Partial Fulfillment of Requirements

For the Degree of Doctor of Education

Major: Educational Administration

Under the Supervision of Professor Miles Bryant

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DISSERTATION TITLE

School District Variables and Their Contribution to Student Achievement in Nebraska Class III Public School Districts

BY

Jeffrey D. West

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GRADUATE COLLEGE
UNIVERSITY OF NEBRASKA

SCHOOL DISTRICT VARIABLES INCLUDING DISTRICT LEADERSHIP AND THEIR CONTRIBUTION TO STUDENT ACHIEVEMENT IN NEBRASKA CLASS III PUBLIC SCHOOL DISTRICTS

Jeffrey D. West, Ed.D.

University of Nebraska, 2002

Advisor: Miles Bryant

Using data from 38 rural school districts in Nebraska, this study examined what attributes of a school district affected students' aggregate levels of academic achievement. District attributes were measured through four environmental variables, four organizational variables, and an 80-item school district survey.

District data was collected from a state report card. A survey was administered to a randomly selected sample of five teachers or ten percent of the total number of teachers (whichever was greater) in each of 50 randomly chosen districts. Teachers answered questions about their perceptions of their district. Districts that had a return rate of at least three surveys were included in the study. This resulted in a final sample of 38 districts.

Analysis of data showed the following: 1) there was an insignificant correlation between staff qualifications and pupil teacher ratio and student achievement; 2) number of professional support staff had no significant effect on achievement; 3) increasing

district resources did not correlate with increased student achievement; 4) school size was unrelated to student achievement; and 5) neither levels of conflict nor district leadership had a relationship with student achievement. A significant negative correlation was found between the number of minority students in the district and student achievement.

Multiple regression was used to analyze the contribution of predictor variables to variation in achievement. The one variable that consistently explained variation in achievement was the number of minorities in the district. In several models, measures of organizational health were significant contributors to a model that achieved significance.

Establishing the characteristics of school districts that can be directly linked to student achievement is a difficult task. This study identified little within the control of a school district that could be manipulated to impact student achievement. As a consequence, educators should be wary of reform initiatives that seem to offer easy fixes to raising student achievement.

Acknowledgements

As this inquiry draws closer to fulfillment I am reminded of the many people responsible for any success the study has had to date. Appreciation is extended first to my advisor, Dr. Miles Bryant, who had to take on an advisee two-thirds through a program and yet offered me constant attention as though I had been his advisee through the entire process. I also wish to express my appreciation to the members of my committee: Dr. Larry Dlugosh, Dr. Stan Vasa, and Dr. Gary Hartzell, for their help and advice. Kent Mclellan was a primary investigator during this dissertation. His efforts and advice were very beneficial and I thank him for his assistance through out the process.

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Chapter 1

Introduction

> Organizational effectiveness is a puzzle. While its meaning and measurement are ambiguous, it is a central concept in organizational analysis. Effectiveness is both the apex and the abyss in organizational research. It is the apex because all theories of organization and administrative practices are ultimately aimed at identifying and producing effective performance. It is an abyss because no valid theories of organizational effectiveness exist and no list of criteria has ever been formulated that is either necessary or sufficient for evaluating the concept (Cameron, 1984, p. 236).

The importance of and the confusion about defining and measuring organizational effectiveness are apparent for schools. When educators, school patrons, or policy makers gather, an increasingly frequent topic of conversation is organizational effectiveness in schools. Terms such as "accountability," "academic achievement," "student drop-out rates," and teacher satisfaction" are generally included in these conversations. The interest in organizational effectiveness is neither a new phenomenon nor unique to education. For more than a hundred years, writers representing both the private and public sectors have expressed concern about the effective and efficient operation of virtually all organizations, including schools (Hoy & Miskel, 1991).

David K. Cohen (1987) notes an interesting paradox- the more schools have succeeded, the more they appear to have failed. He maintains that the twentieth century has been a period of great improvement in American public education, but school bashing has become a national practice. Both in the reports and group discussions of changing schools, intense arguments frequently deal with complex and tough issues about appropriate definitions and measurements. Little consensus is evident. Hall (1980) holds that no matter the ideological, political, or organizational bias, effectiveness remains the

dependent variable to be explained, sought, or exposed. The issue will not go away, nor should it.

The concept popularly called "effective schools" has emerged as a major element in the vision for better schools. The idea of effective schools began to grow when educators noticed that some schools apparently served their pupils better than other schools did. The effective schools emphasis has educators seeking "what works" to make schools better, and trying to combine results into a conceptual framework that recognizes such key elements as the culture of individual schools, the need for rewards, and the need for a climate or environment that supports the goals of education (Achilles, 1985). According to Rutherford (1985), educational leaders "have clear, informed visions of what they want their schools to become" (p.32). Improvement through effective schools approaches start with a vision of what a good school should be (Achilles, 1985).

The earliest beginnings of the effective schools movement can be traced to the work of James Coleman and his associates (1966) in "Equality of Educational Opportunity." They challenged the notion that educators can themselves counter the many and serious inequalities imposed on children by environment, family, and society, and therefore questioned the prevailing public opinion that schools, alone, could make an appreciable difference in the lives of children.

> Schools bring little influence to bear on a child's achievement that is independent of his background and general social context...this very lack of an independent effect means that the inequality imposed on children by their home, neighborhood and peer environment are carried along to become the inequalities with which they confront adult life at the end of school. For equality of educational

> opportunity must imply a strong effect of schools that is independent of the child's immediate social environment, and that strong independence is not present in American schools (Coleman et al. 1966, p. 4).

Others engaged in research and concerned with school improvement almost immediately challenged Coleman's hypothesis. Their strategy to disprove Coleman's argument was simple: they set out to identify individual schools with superior records of success in serving the educational needs of disadvantaged children and youth.

Weber (1971) and Edmonds and Frederickson, (1979) did not accept the Coleman hypothesis. Initially working independently of one another, these researchers began to formulate a research strategy that would, if successful, begin to challenge the hypothesis. The strategy was for the researchers to go into the real world of public schools and see if they could identify individual schools that represented clear exceptions to Coleman's theory. The first generation of studies completed by these researchers became the foundation of the research base of the effective schools movement. Among the studies frequently cited are: Inner City Children Can Be Taught to Read: Four Successful Schools, Weber, (1971) and Search for Effective Schools: The Identification and Analysis of City Schools That Are Instructionally Effective for Poor Children, (Edmonds and Frederickson, 1979).

In 1975, Bidwell and Kasarda published a study using data from 104 school districts in Colorado that examined determinants of organizational effectiveness. Five environmental conditions of these school districts, three components of district structure and one of staff composition were linked in a causal model to the median reading and mathematics achievement test scores of the districts' high school students. The

environmental conditions were (1) size, (2) budget expenditures, (3) percent of non-white in the population of the district's community, and (4 and 5) the education and income levels of the parental population. The measures of district structure were pupil-teacher ratio, administrative intensity and the number of professional staff. The staff composition variable was defined as the qualification level of the professional staff.

According to Bidwell and Kasarda, "Coleman did not investigate very deeply organization structures or practices in their sample of schools and so could say very little about relationships between organizational variables and student achievement."(p. 56). They also believed it was possible that the school unit was not the most appropriate unit for discovering effects of schooling on student achievement, especially if organizational attributes were the independent variables. They went on to say that "...if we view organizational phenomena as a means for transforming environmental inputs into outputs, then one principal locus of these phenomena may be the school district rather than the individual school." (p. 56).

The importance of instructional leadership to school effectiveness has been the focus in educational research findings. According to Terry (1996) instructional leadership can move the school district in the direction of academic success, which is the product of education. Instructional leadership is a compelling image, deeply rooted in American education. Strong leadership focused on instruction is often referred to by educational reformers as one of the key contributors to school effectiveness. Similarly, studies of effective schools generally conclude that strong instructional leadership is a central element associated with school effectiveness (Greenfield, 1987).

In a study supported by the Brookings Institution, Chubb and Moe (1990) concluded that, although state or local policy does not affect student achievement, achievement is influenced by what educational leaders do. Successful schools are characterized as those that have a clear sense of purpose, true professionalism among staff, ambitious academic programs, and strong instructional leadership.

In spite of a widespread conviction about the power of leadership, the belief that people filling formal leader roles exert meaningful influence on organizational outcomes is still questioned. These critics point to the failure of research to uncover clear and consistent relationships between leadership variables and organizational performance. They argue that leaders' discretion to make changes in and influence organizations is limited by complex and pervasive constraints (Hart, 1993).

Research and thinking on leadership took a major step when scholars began to focus their attention on leaders' behaviors. Definitions of leadership reflecting this focus have a distinctly action-based flavor (Hart, 1993). Similarly, Lipham (1964) defined leadership as behaviors that facilitate the attainment of organizational goals.

The reform movement since the publication of A Nation at Risk in1983 has changed the roles and responsibilities of administrators. Educational leadership and attention to the quality of instruction have become important factors, which serve to identify, in general, effective schools. All the effective schools research on the elementary, middle, and secondary levels repeatedly have identified instructional leadership as critical. Instructional leadership and effective schools have gone hand-in-hand from the beginning. Advocates contend that this long-standing relationship may be the best hope for public education into the 21st century (Lezotte, 1994).

Edmonds earlier had argued that "one of the most tangible and indispensable characteristics of effective schools is strong administrative leadership, without which the disparate elements of good schooling can neither be brought together nor kept together" (Edmonds, 1979, p. 32).

Statement of the Problem

The purpose of this study was to ask if and under what conditions the attributes of school district organization affect students' aggregate levels of academic achievement.

Purpose Statement

This study had two purposes. The first and over-riding purpose was to examine school district variables in terms of their contribution to student achievement. Nebraska has a variety of types of schools in terms of size and student demographics and teacher characteristics. The new state report card provided an opportunity to use school district data to determine if there are particular district variables that contribute to student achievement.

The second purpose was to specifically examine the contribution of a measure of leadership within the school district to student achievement in that district. There has been no lack of scholars who believe that leadership is an important contributor to student achievement. This study attempted to capture the effect of that leadership at the district level.

Research Questions

1. Did organizational characteristics contribute to district achievement levels and if so, how much of the variation in achievement was explained by these organizational characteristics?

2. Did environmental conditions of the district contribute to district achievement levels and if so, how much of the variation in achievement was explained by these environmental conditions?

3. Did district leadership contribute to district achievement levels and, if so, how much of the variation in achievement was explained by variation in a measure of district leadership?

4. How much additional explanatory power was created by the addition of the independent variable of district leadership?

5. Did measures of organizational health contribute to district achievement levels and, if so, how much of the variation in achievement was explained by variation in a measure of organizational health?

These research questions are developed more fully in Chapter Three.

Definitions

Organizational Effectiveness: Goal attainment: the ability of a school district to produce what it sets out to produce in a volume appropriate to the demand (Bidwell & Kasarda, 1975).

Environmental Conditions: Conditions that an organization can do little to control such as district size, fiscal resources, disadvantaged students and percent of student non-white (Bidwell & Kasarda, 1975).

Social-Ecological Approach: A process of asking whether and how attributes of school district organization affect the transformation of environmental inputs into students' aggregate levels of academic achievement (Bidwell & Kasarda, 1975).

School District Size: Total student population of the school district as reported in the 2000-2001 School District Membership Report.

Fiscal Resources: The sum of all local, state, and federal revenue received by the school district as reported in the 2000-2001 Annual Financial Reports submitted by Nebraska Public School Districts and confirmed by their audit reports.

Disadvantaged Students: The percent of all school-age children residing in the school district who are eligible for Free and Reduced-priced meals as reported in the 2000-2001 School District Membership Report.

Percent Non-white: The percent of the student population residing in the school district who were not classified as white reported in the 2000-2001 School District Membership Report.

Pupil-Teacher Ratio: The number of students (as reported on the 2000-2001 School District Membership Report) per teacher (as reported on the 2000-2001 Fall Personnel Report) calculated by dividing the number of students by the number of teachers in each district.

Administrative Intensity: The full time equivalency (FTE) of personnel in the school district who must hold a valid administrative certificate as reported in a document specifically requested by the researchers from the Nebraska Department of Education Data Center.

Professional Support Component: The full time equivalency (FTE) of personnel in the school district who are employed as counselors, nurses, and/or speech personnel certificate as reported in a document specifically requested by the researchers from the Nebraska Department of Education Data Center.

Certificated Staff Qualifications: The percent of total certificated staff that held at least the Master's degree as reported on the 2000-2001 Fall Personnel Report.

Student Outcomes: The degree to which the school district places a high value on student outcomes as measured by the Organizational Health Survey.

Leadership: The degree of effective leadership in a school district as measured by the Organizational Health Survey.

Organization Structure: The appropriateness of the organizational structure of the school district as measured by the Organizational Health Survey.

Communication: The degree of open communication in the school district as measured by the Organizational Health Survey.

Conflict Management: The degree of disagreement in a school district as measured by the Organizational Health Survey.

Human Resource Management: The degree to which the school district organization's human resources are well utilized as measured by the Organizational Health Survey.

Participation: The degree to which participation is used in the school district as measured by the Organizational Health Survey.

Creativity: The degree of creativity in the school district as measured by the Organizational Health Survey.

Organizational Attributes: Those attributes of district structure such as pupil-teacher ratio, administrative intensity, certificated staff qualifications and the ratio of supporting professional staff to teachers.

Student Math Achievement Score for the District: The percentage of students that fall in each quartile of a standardized math test as reported on the Nebraska Department of Education State Report Card Web site (http: reportcard.nde.state.ne.us) converted to interval data by weighting the quartiles and multiplying those weights times the number of students in each quartile in grades three, eight and eleven.

Student Reading Achievement Score for the District: The percentage of students that fall in each quartile of a standardized reading test as reported on the Department of Education State Report Card Web site (http: reportcard.nde.state.ne.us) converted to interval data by weighting the quartiles and multiplying those weights times the number of students in each quartile in grades three, eight and eleven.

Assumptions of the Study

1. Academic attainment is an important indicator of school effectiveness.
2. That the indicators of instructional leadership gathered from the literature are desirable for high achieving schools.
3. Multiple regression is an appropriate statistical method for analyzing the type of data investigated in this study.
4. That the instrument used is a valid means of capturing opinion about district variables.
5. That respondents will be truthful in responding.
6. That data gathered will distribute normally.
7. It is reasonable to create a weighted score to represent district achievement.

Limitations of the Study

1. This study was subject to those strengths and weaknesses inherent in the instructional leadership survey by questionnaire design.
2. The data used was obtained from the Nebraska State Department of Education. When gathering academic achievement data, the Department did not gather the data from uniform statewide achievement testing. Different schools used different achievement tests. Also, individual student scores were not available, only the percentage of students in each quartile for each district.
3. This study was descriptive in nature and relied heavily on self-reporting by school officials.
4. Conclusions for the study were applicable to Nebraska schools during the 2000-2001 school year.
5. The interval data used to represent school district student achievement was obtained by creating interval data from nominal data.
6. Model may yield Type One errors by missing critical factors.

Delimitations of the Study

1. The generalizability of the findings from this study is limited to the characteristics of the schools used in this study. Only class III schools were used for the study.
2. Only schools in Nebraska were used for this study. The results of this study can not be generalized beyond Nebraska.
3. May not be possible to get accurate measures of a school district by asking a limited number of teachers.

4. The model proposed in this study is a limited explanation of the variation in student achievement.

Significance of the Study

We badly need empirical studies, conducted in a variety of organizational settings, which use well-defined models of the links between input and output. The school district is one such setting, and since Equality of Educational Opportunity (Coleman et al., 1966) there has been a good deal of attention to the outputs (especially the academic outputs) of schools. This work, however, has not been conducted from the perspective of organization analysis. This study used the social-ecological approach to ask whether and how attributes of school district organization affect the transformation of environmental inputs into students' aggregate gains in academic achievement. The present study not only added to the independent variables used by Bidwell and Kasarda in an attempt to see if a measure of instructional leadership can improve on their model, but also this study may cause us to question whether instructional leadership will increase the explanatory power of the original study.

The Nebraska Department of Education published the State of Nebraska Report Card in 2000. In order to produce the report card, the Department of Education required all class II through class V school districts to provide data on items such as teacher qualifications, student socioeconomic status, teacher ratio, student attendance, graduation rate, school district size, budget expenditures, and student performance on standardized tests in the areas of reading and math. The report card was a summary of the above mentioned data. Many of the independent variables analyzed by Bidwell and Kasarda (1975) are also reported in the State Report Card. Using data collected by the

Nebraska Department of Education. this study replicated the Bidwell and Kasarda study amended to include the independent variable of instructional leadership.

Organization of the Study

Chapter 1 contains the Introduction. Statement of the Problem. Research Questions. Definitions. Assumptions. Limitations. Delimitations. and the Significance of the Study. Chapter 2 consists of a review of selected references. In Chapter 3. the methods and design are presented. The analysis of data is in Chapter 4. Chapter 5 contains the summary. conclusions. and recommendations.

Chapter 2

Review of Selected References

The purpose in the present chapter was to review selected references and research related to organizational effectiveness of schools as well as school reform. The origin, growth, and impact of Effective Schools Research and its relationship to instructional leadership were also reviewed.

Organizational Effectiveness of Schools

The Administration of the Public Schools-A Historical Perspective

In 1962, Callahan published a study entitled, *Education and the Cult of Efficiency*. This study described the social forces that had shaped the administration of public schools. The author's intent was to explore the origin and development of the adoption of business values and practices in educational administration. Callahan was not surprised to find business ideas and practices being used in education, but what was unexpected was the extent, not only of the power of the business-industrial groups, but of the strength of the business ideology culture on the one hand the extreme weakness and vulnerability of administrators of the other. The author noted, "I was surprised and then dismayed how many decision they made or were forced to make, not on educational grounds, but as a means of appeasing their critics to maintain their positions in the school" (p.ii).

The search for educational effectiveness can be traced to the early 1900s. From 1900 to 1910 American schools experienced growing pains: teachers were inadequately prepared, classrooms were over crowded, school buildings and equipment were inadequate, and the education of minorities had been neglected. But the basic framework for the concept of a free public school from kindergarten through the college years had

been established. Still. as noted by Callahan (1962) "At the turn of the century America had reason to be proud of the educational progress it had made" (p.1).

Over the next quarter century several forces shaped American society. As part of American society public schools reflect to some extent the culture of which they are a part and respond to forces within that culture. Due to the nature of their organization. support. and control schools are especially vulnerable and respond quickly to the strongest social forces. Industrial capitalism – the application of mechanical power to the production of goods under the influence of free enterprise - was the most powerful force during this period as well as the decades immediately preceding it (Callahan. 1962).

Industrial capitalism resulted in two developments that had a major impact on American society and education after 1900. One of these was the rise of business and industry to a position of prestige and influence. and America's subsequent obsession with business-industrial practices and values. The other was the reform movement historically associated with Theodore Roosevelt. When combined with the vulnerability of the school administrator these factors contributed to the conditions in American society. which explain the impact of Frederick Taylor's system of scientific management and the continuing influence of the business-industrial ideology on American society and education after 1911. It became common place for Americans. when they thought of reforming schools. to apply business methods to achieve their ends. As noted by Callahan (1962) "The direct influence of business on school administrators and through them. on the schools. sprang from twin factors that were like the two sides of a coin: the vulnerability of the schools and schoolmen: and the great strength of the business community and the business philosophy in an age of efficiency" (p. 179).

The introduction of businesslike organization and operation into schools was fairly well standardized from 1900 to 1925. Unfavorable comparisons between business and schools, applying business-industrial criteria (e.g., economy and efficiency) to education, and suggesting that business and industrial practices be adopted by educators were common during this time period. In 1903, for example, a writer for the *Atlantic Monthly* stated, "The management of school affairs is a large business involving a city of 100,000 inhabitants and expenditure of probably $500,000 annually; the same business principles should be adopted in modern industry should be employed here" (Callahan, 1962, p.6). William C. Bagley published a textbook on education entitled *Classroom Management* that was written for teachers in training and reprinted more than thirty times. In his text Bagley used an extensive amount of business terminology. For example, Bagley stated the problem of classroom management was primarily a "...problem of economy; it seeks to determine in what manner the working unit of the school plant may be made to return the largest dividend upon the material investment of time, energy, and money. From this point of view, classroom management may be looked upon as a 'business' problem" (Bagley, 1910, p. 2).

School boards also contributed to the adoption of business methods in the public school arena. Before 1900 most boards were unwieldy organizations that were governed to some extent by politics. Slowly they were reorganized and paralleled the municipal reform movement. This process resulted in fewer members and those members were usually businessmen who relied on their business skills to solve educational problems (Callahan, 1962).

Leonard Ayres, an educator, was also a major contributor to the adoption of business methods by public schools. Ayres (1909) published an allegedly scientific study of retardation and elimination entitled *Laggards in our Schools*. Using school records, reports, and statistics collected by government agencies Ayres collected data which he claimed indicated that schools were filled with retarded children and that most dropped out of school before finishing the eighth grade. He defined a retarded child as one who was over-age for their grade regardless of how well they were doing in their course work. Ayres claimed that "the extent of retardation varied from 7 percent in Medford, Massachusetts, to 75 percent for Negro children in Memphis, Tennessee, with the average being about 33 percent for all pupils in public schools" (Ayres, 1909, p. 3). While his data showed that large numbers of children were over-age for their grade without regard for the social or educational reasons, he blamed the schools. Ayres described the schools as "fitted not to the slow child or to the average child but to the unusually bright one" (Ayres, 1909, p. 5).

In addition to reporting the percentages of "retarded" children in school Ayres proposed that schools should be ran as a factory and that business and industrial values should be applied in a systematic way. By using the normal year-by-year progress through schools as a criterion for measuring the relative "efficiency" of a school he developed a system for presenting this "Index of Efficiency" in a percentage form. Ayres found that the most "efficient" school systems spent approximately 6.5 percent of their annual budget on repeaters, and the least "efficient" school systems spent approximately 30.3 percent on these students (Ayres, 1909).

While these numbers would seem to indicate serious problems with public schools it is important to note that Ayres only used the grade and age distribution of students to come up with these findings. He failed to take into account the many social and economical reasons that were beyond the control of the school to explain why many children were over-age and did not fit into a neat, mechanical age-grade schedule. While Ayres' report could have made a significant contribution to solving educational problems he choose to ignore the social and economical issues which contributed to student success or lack thereof. Instead Ayres focused on the financial drain of the "repeater." This fact combined with the fact that this material was written by a prominent educator and presented as what appeared to be a valid scientific study resulted in an economy-minded public developing a critical view of public schools and their administrators (Callahan, 1962).

The combination of the widely publicized Ayres report, the dominance of business men and acceptance of their business values, the creation of a reform minded public, the perception that all American institutions were mismanaged, and the increased cost of living created the perfect setting for a new system of management in public schools called "scientific management." The system was becoming known throughout the world, even finding its way into China and Russia. Frederick W. Taylor, credited with the origin and development of this system, claimed that his principles could be applied to all institutions and the system was also often described as a panacea for the ills of mankind by many of Taylor's most prominent supporters (Callahan, 1962).

Scientific management was essentially a system for "...getting greater productivity from human labor..." (Callahan, 1962, p.25). There were four basic

principles of scientific management. First, a science for each element of a man's work was developed. This replaced the old "rule-of-thumb" method (strategies handed down from generation to generation) used in most organizations. Taylor believed that "there was one best way of doing a job and this method could be determined only through scientific study of that job by experts with proper implements, i.e., a stop watch and recording card" (Taylor, 1911, p. 25). Second, workers were selected, trained, taught, and developed, rather than being allowed to choose their own work and train themselves the best they could. Third, management heartily cooperated with the workers so as to insure that all of the work was done in accordance with the principles of the science that had been developed. Fourth, there was an almost equal division of the work and responsibility between the management and the workers. "The management take over all work for which they are better fitted than the workmen, while in the past almost all work and the greater part of the responsibility were thrown upon the men" (Callahan, 1962, p. 27).

While Taylor's system of scientific management was originally proposed as a method of increasing effectiveness in the business & industry section, it was also adopted, interpreted, and applied to public schools. While the greatest impact was upon administration, the administrator, and the professional training programs for administrators, the influence of scientific management extended to all American education from the elementary schools to the universities (Callahan, 1962).

The widespread publicity given scientific management and the great claims made in its behalf intensified the public's feeling that waste existed everywhere, and at the same time offered a means of eliminating it. A major result was that public criticism was directed towards institutions that were large enough to be suspected of gross managerial

inefficiency and those supported by public taxation. Public schools. especially those in larger cities. met both of these criteria (Callahan. 1962).

With the onset of numerous articles that were critical of schools appearing in popular and professional journals educators were forced to respond accordingly. As noted by Callahan (1962) "The sudden propulsion of scientific management into prominence and the subsequent saturation of American society with the idea of efficiency together with the attacks on education by the popular journals made it certain that public education would be influenced greatly. But the extent of this influence was increased by the vulnerability of the leaders in the schools - the superintendents - to public opinion" (p. 52). As early as 1900 the survival of school superintendents depended on their ability to appease their most powerful and vocal critics (Callahan. 1962).

In 1913 two events occurred which demonstrated the fact that public school administrators were moving quickly to appease their critics. The first event was the annual meeting of the Department of Superintendence of the National Education Association. This meeting of "...every superintendent who is alive to the responsibilities of his office and the opportunities his profession must look forward to..." (Callahan. 1962. p. 64) contained a major session devoted to improving school systems by scientific management. The second event was the devotion of Part 1 of *The Twelfth Yearbook of the National Society* for the study of Education to the application of scientific management to city school systems. This organizations membership was comprised of the leading educators in America. and its yearbook was one of the most prominent professional publications at that time (Callahan. 1962).

As scientific management was being implemented in public schools there was an oversimplification of the knowledge, skills, and time necessary even to begin building the foundation upon which the art of teaching would be based. As a result, educators were forced to assume the role of experts and in so doing turned their attention to cost accounting or to simple mechanical problems. This resulted in the original meaning of scientific management being changed as it was being applied to education. Educators were not qualified to carry on the difficult research work that was necessary. Their inability to carry out the necessary scientific research led them to focus their attention on applying the scientific method to the financial and mechanical aspects of education. In response to criticism administrators both studied and applied the advice of "experts" or they called them in to assist with their efforts (Callahan, 1962).

In his textbook entitled *Public School Administration* Cubberley (1916) described the emergence of the educational efficiency expert as "... one of the most significant movements in all of our education history" and that "...their work would "change the whole character of school administration" (p. 325). The author noted that the work of efficiency experts fell into two categories. The first category was that of constructing tests and rating scales for measuring school efficiency. The second category was that of developing school surveys. While some efficiency experts were competent in both categories, most experts specialized in one or the other.

In an effort to measure efficiency within the schools, efficiency experts engaged in a wide variety of activities many of which involved the development and utilization of "objective" achievement tests in the areas of math and language arts. As noted by Strayer (1913) "...if scientific measurement is to be accomplished, we must have units or scales

of measurement which will enable us to make measurements which are verifiable by other observers. We may not hope to achieve progress except as such measuring sticks are available or may be derived" (p. 253). The testing of students became common place during this time period. One district was noted as administrating approximately fifty thousand examinations to its students. It was reported that the testing made it possible to determine the districts strong and weak points in a fashion much like the methods used in factories and commercial establishments in the sense that it offered a method of determining where the city's money is being invested most wisely, and where the city's money was not producing the expected results (Callahan, 1962).

Teacher rating scales were also being developed as a major part of the effort to measure school efficiency. In the beginning these scales were developed based on Taylor's work, but as time passed they became more dependent upon the business and industrial world's concept of promoting workers based on merit. The desire to apply sound business principles had prompted most large city administrators to adopt some form of the merit system when promoting teachers or determining their salaries (Callahan, 1962).

As teacher-rating scales became more and more popular the development of rating scales for all other individuals in schools were developed. Rating scales for superintendents, principals, students, and even janitors became widespread. In this age of "weighing and counting" it was a common belief that accurate descriptions and efficiency measures should be developed for all who were employed by the school (Callahan, 1962).

School surveys were also being performed by efficiency experts during this time period. The growing use of surveys occurred as response to the growing concern for efficiency, which was sweeping the country, and the increasing criticism of schools. The popularity of the survey is explained by Sears (1925) "With a critical public opinion demanding economy and efficiency, and with a new conception of education growing rapidly into a science of education, we had both the motive and the means by which the survey movement could take form. Under these circumstances it was not strange that the public should take readily to the survey idea. People were already familiar with the work of the efficiency engineer and the accounting expert in business and industry. Naturally, then, when boards of education called upon educational experts to help point the way out of difficulties, the idea was promptly understood and sanctioned by the public, and the school survey movement had begun" (p 3-4).

Outside efficiency experts were commonly used to develop and implement surveys. Outsiders were used as these individuals or groups would have no interest in the local situation whereas local personnel were not trusted to be non-biased in their reporting of results. The motivating force behind most surveys was economic, not educational. Financial aspects of the operation of schools were very prominent in most surveys. This makes sense when one considers that most of the surveys were developed as part of the scientific management movement and financial savings was a major aspect of this process (Callahan, 1962).

An additional logical application of Frederick Taylor's gospel of efficiency was that of complete and intensive use of "plant" facilities. In the name of efficiency, administrators were being put under increasing pressure to demonstrate that none of the

plant was being allowed to stand idle. Between 1911 and 1925 administrators worked to attain greater efficiency and economy by developing a more intensive and extensive use of the school "plant." One of the responses to these pressures was the theme of 12-month schooling. This theme had appeared before and was repeated from time to time in the years that followed. While this concept was a definite must for business and industry there were several problems with its adoption by public schools. Despite the fact that such a plan may have tremendous educational value, the school-factory analogy was unsound. Callahan (1962) notes that "Operating schools in this way undoubtedly increased the educational "production," but this production was difficult to see or measure. What could be seen, of course, was increased costs" (p. 127). Much of the public opposed this type of plan because it meant additional expense and therefore the consequent raising of taxes. While there were isolated pockets of successful implementation of 12-month schooling, it was not successful on a widespread permanent basis.

An alternate plan developed in response to the rejection of 12-month schooling was the Platoon School. This plan was proposed as a method of fully utilizing the school building during the regular school year. The economic benefits obtained by implementing this plan were the major reason that it was so appealing to superintendents and boards of education. The plan became so popular that by 1929 school districts had implemented this plan (or variations of it) in 1068 schools in 202 cities and 41 states. These schools accounted for an estimated 730,000 students (Case, 1931).

The plan involved the use of all rooms in the building at all times during the school day. This type of plan required a high degree of administrative planning and

precision timing in moving students. In his book, The Platoon School in America, Case (1931) describes a sample platoon school "...while one group was in its home room receiving instruction in reading, writing and arithmetic, another group was in the music room, another in the shop, another on the playground, etc. When the bell rang the students would shift to their next class. Generally, children had two ninety-minute periods or three hours a day in basic subjects, and six thirty-minute periods in special subjects the other three hours of the school day" (p. 21). Regular classroom teachers taught the regular subjects to many groups of children, while the specialized teachers taught their special subjects to these groups which rotated through their classes.

The reasons for the popularity of platoon schools are not difficult to determine. Not only did the plan save schools money, but it also provided an enriched educational program for students. It was also presented by some experts as "...being an example of the application of scientific management to education" (Callahan, 1962, p. 130). This resulted in the plan being associated with the panacea of scientific management, which was popular at the time. The plan also provided a solution to the problems of overcrowded classrooms that were occurring due to an increasing school population. Administrators supported the plan as it allowed them to economize and defend themselves against charges of inefficiency while at the same time it allowed them to prove their administrative ability (Callahan, 1962).

While superintendents and boards were optimistic about platoon schools due to the promises of economic benefits, teachers were less than enthusiastic. Many teachers saw platoon schools as being impersonal, demoralizing, having a higher rate of mortality in the terms of student failure, and that they actually cost more money than current

systems. Margaret Hayle (1924), a veteran Chicago teacher and representative of the American Federation of Teachers, voiced her opinion in the *New Republic* a national publication. In her article Hayle quoted a letter written by a mother who had withdrawn her child from a platoon school. The mother described the platoon school as a school that "looked to me like nothing so much as the lines of uncompleted Ford cars in the factory, moving always on, with a screw put in or a burr tightened as they pass—standardized, mechanical, pitiful" (p. 18). As a result of widespread criticism of platoon schools by teachers and parents the platoon school declined steadily after 1930, but many of its original elements can be seen in todays public schools (Callahan, 1962).

The major problem with the adaptation of business and industry values and practices to education was that they were adopted indiscriminately and applied with little or no consideration of educational values or purposes. As noted by Callahan (1962)

> "It was not that some of the ideas from the business world might not have been used to advantage in educational administration, but that the wholesale adoption of the basic values, as well as the techniques of the business-industrial world, was a serious mistake in an institution whose primary purpose was the education of children. Perhaps the tragedy was not inherent in the borrowing from business and industry but only in the application. It is possible that if educators had sought "the finest product at the lowest cost"—a dictum which is sometimes claimed to be a basic premise in American manufacturing—the result would not have been unfortunate. But the record shows that the emphasis was not at all on "producing the finest product" but on the "lowest cost" (p. 244).

The impact of business and scientific management would continue to be felt in education for many decades. As a result of these forces other actions taken by school administrators in an effort to cut costs were developed in secondary schools. These actions included increasing class size, teacher load, and school size. While the actions were actually taken for financial reasons, they were rationalized to the public through the use of unsubstantiated claims of educational gain. These actions resulted in schools becoming even more impersonal and factory like, throughout the sixties (Callahan, 1962).

Many national reports called for an increase in school effectiveness. The reports generally discussed similar topics calling for overall school reform. It was common for the reports to stress the mismatch between national requirements for a more highly skilled work force and current performance levels in schools; the need for comprehensive response that included schools, business, labor, public-interest groups, and government; and that schools be restructured in order to bring about noticeable gains in student performance (Levine & Levine, 1996).

Theory Years and the Search for Theories Related to Organizational Performance

The Goal Attainment Model

Education is not devoid of effective indicators. Educators and members of the public acknowledge that different schools achieve different levels of success, even with similar student populations. Based on real or imagined information, parents may decide, for example, to locate in a given attendance area because they know that a particular school maintains excellent academic standards while another school lacks strong discipline procedures. Moreover, schools report results to the public that the officials believe represent their accomplishments (Hoy & Miskel, 1991).

To ask a global question about whether a school is effective or ineffective is of limited value. Effectiveness is not one thing: hence, a one-dimensional definition is not adequate. Rather, a school can be effective and ineffective depending on the criteria used. Without a theoretical model as a guide, it is impossible to state that one school is more effective than another, or to say that a given indicator is a measure of effectiveness, or to plan ways to change the school (Hoy & Miskel, 1991).

Traditionally, organizational effectiveness has been defined in terms of the degree of goal attainment. Amitai Etzioni's (1964, p. 6) widely held definition is that "an organizational goal is a desired state of affairs which the organization attempts to realize." An organization is effective if the outcomes of its activities meet or exceed organizational goals. Goals provide direction and reduce uncertainty for organizational participants and present standards for assessment of the organization.

Two assumptions underlie the goal model (Campbell, 1977). First, a rational group of decision-makers in the organization have in mind a set of goals that they wish to pursue. Second, the goals are few enough in number to be administered and are defined concretely enough to be understood by the participants. If the assumptions are accepted, it follows that the decision-makers should be able to assess organizational effectiveness and to develop measures to determine how well the goals are being achieved. Administrative practices have been developed to enhance goal specification and goal achievement. Boards of education and administrators attempt to enhance goal attainment by centralizing and formalizing the school organization and mandating guidelines for the scope and sequence of curriculum.

However, several shortcomings of the goal concept and the goal model should be noted. Among the criticisms of using goals to assess organizational effectiveness, Kim Cameron (1978) provides the following analyses:

1. Too often the focus is on the administrator's goals rather than those set by teachers, students, parents, and other constituencies.
2. In many instances, the researchers overlook the multiplicity of goals and their contradictory nature.
3. Organizational goals are retrospective. They serve to justify school and educator action, not to direct it.
4. Organizational goals are dynamic, while the goal model is static.
5. In schools, valued outcomes depend to a large extent on socioeconomic status. Wealthy school districts achieve higher test scores than less affluent ones because students start with better academic backgrounds.

The System Resource Model

The system resource model defines effectiveness as the organization's ability to secure an advantageous bargaining position in its environment and to capitalize on that position to acquire scarce and valued resources. The concept of bargaining position implies the exclusion of specific goals as ultimate effectiveness criteria. Rather, the system resource model directs attention toward the more general capacity of the organization to procure assets. Consequently, this definition of effectiveness emphasizes the continuous, never-ending process of exchange of, and competition over, scarce and valued resources. Each time a state legislature meets to appropriate tax monies for schools, this process is visible. Educational organizations compete in an environment of

state politics with transportation, social welfare, correctional, and other agencies and organizations to acquire the valued commodity of state aid. With the proposals for "schools of choice," competition between public and private schools is likely to increase. When public school enrollments decline, as they do periodically, and the employment prospects weaken for educators, competition for students intensifies. According to the system resource model, the most effective schools would sustain growth or minimize decline by advantageous bargaining with the parents and students or legislators. Hence, the criterion for effectiveness becomes the organization's ability to acquire resources (Hoy & Miskel, 1991).

A generalization emerging from the assumptions is that in more effective organizations bureaucratic expectations, informal groups, and individual needs work together better to produce an impact on the environment than they do in less effective organizations. All organizations emphasize the need for adequate resources and avoidance of undue strain. Educational administrators, for instance, place great importance on maintaining harmony because harmonious actions in a system resource framework enhance organizational effectiveness (Hoy & Miskel, 1991).

The strong dependence on the environment forces the organization to concentrate on adaptive functions to compete successfully for resources. From the system resource perspective, effective organizations are those with sensitive monitoring mechanisms that provide information about new behavior that can lead to the acquisition of more assets. To preclude enrollment declines, many colleges, universities, and school districts are tapping the demand for educational services by nontraditional students. They are attempting to mine the rich resources of this underserved student population by offering a

plethora of adult, easy access, and outreach programs. According to the system resource model, the final criterion the researcher must use to assess organizational effectiveness is internal consistency. The model predicts that an effective organization will distribute resources judiciously over a wide variety of coping and monitoring mechanisms (Hoy & Miskel, 1991).

The system resource model of organizational effectiveness has several alleged defects, especially when applied to educational organizations. For one thing, placing too much emphasis on inputs may have damaging effects on outcomes. When an educational organization becomes consumed by the acquisition of resources, other functions may be neglected. For example, in order to stem declining enrollments, many colleges and universities are engaging in intense and expensive competition for students, thus compromising program vigor and quality.

Critics also allege that since increasing inputs or acquiring resources is an operative goal for the organization, the system resource model is actually a goal model. Thus, the differences between the goal and the system resource approaches may represent an argument over semantics. As Hall (1972, p. 100) has observed, "The acquisition of resources does not just happen. It is based on what the organization is trying to achieve, its goal, but it is accomplished through the operative goals." In other words, the system resource model actually verifies the operative goal concept; in fact, Richard Steers (1977) has argued that the two approaches are complimentary. Indeed, a possible, even, highly desirable approach is to conceptualize organizational effectiveness by combining the two perspectives (Hoy & Miskel, 1991).

The Integrated Model

Connolly, Conlan and Deutsch (1980) note that the goal and resource models share one crucial assumption. "...it is possible, and desirable, to arrive at the single set of evaluative criteria, and thus at a single statement of organizational effectiveness" (p. 212). Realizing this common assumption several theorists (Goodman and Pennings, 1977; Steers, 1977, Campbell, 1977) have attempted to integrate the two approaches. While their theories differ slightly, they all agree that the use of goals cannot be avoided. Hoy & Miskel (1991) describe the nature of goals in a resource system. They note that "Behavior is explicitly or implicit goal directed, and organizational behavior is no exception. However, from a system resource framework, goals become more diverse and dynamic; they are not static, ultimate states, but are subject to change over relatively short periods of time. Moreover, the attainment of some short-term goals can represent new resources to achieve subsequent goals. Thus when a systems framework is used, a cyclic nature characterizes goals in organizations" (p. 379).

There are several subtle nuances of organizational effectiveness. In order to understand these issues the integrated model must be expanded to include three additional characteristics—a time dimension, multiple constituencies, and multiple criteria (Hoy & Miskel, 1991).

Time is a frequently neglected factor in the study of organizations and the assessment of their effectiveness. Yet issues of time are of central importance. Gibson, Ivancevich, and Donnelly (1976) proposed that the influence of time on organizational effectiveness could be conceptualized along a continuum of success ranging from short-term, through intermediate, to long-term.

Another influence of time is that the criteria for organizational effectiveness are constantly changing. As constituents' preferences change, new constraints and expectations evolve to define school effectiveness. As a consequence, performance that is effective today is likely to be ineffective at a later date as preferences and constraints change. Also, specific criteria of effectiveness shift as organizations move through their life cycles from their early entrepreneurial stages through their mature stages (Cameron, 1984).

Multiple constituencies must also be considered when one is studying is organizations and the assessment of their effectiveness. The values and biases of stakeholders always influence effectiveness criteria. Organizations that have multiple constituencies typically have effectiveness criteria that are derived from a number of different perspectives. As a result, multiple stakeholders play critical roles that define goals and provide information for their assessment. An additional complicating factor of multiple constituencies is that they actively prefer different criteria. This often results in effectiveness becoming less a scientific concept and more a political concept (Connolly, Conlon, and Deutsch, 1980).

Integrating the goal and resource models requires the inclusion of multiple constituencies who define and evaluate effectiveness using a variety of criteria. Termed by Keeley (1984) as a relativistic multiple-contingency approach to organizational effectiveness, this approach assumes that no single statement about organizational effectiveness is possible or desirable. No single effectiveness indicator or simple list is appropriate. Politics and power affect the definition and measurement of effectiveness (Kanter and Brinkerhoff, 1981).

Multiple criteria are an additional concept that must also be considered when one is studying organizations and the assessment of their effectiveness. There is no single ultimate criterion that can capture the complex nature of organizational effectiveness. Hoy & Miskel note that "In the combined goal-system resource approach, effectiveness indicators must be derived for each phase of the open-system cycle—input, transformation, and output. Virtually every phase, process, or outcome variable can be and has been used as an indicator of effectiveness" (p. 381).

In order to develop a multidimensional measurement of organizational effectiveness one must select key concepts. The selection of the most appropriate variables that represent effectiveness can be an overwhelming task. Campbell (1977) chose to use thirty categories to classify a list of organizational effectiveness indicators. Likewise, Steers (1975) needed to use fifteen different criteria for a sample of only seventeen studies of effectiveness (Hoy & Miskel, 1991).

As a result of the difficulties of selecting appropriate effectiveness variables a theoretical model must be followed. Zammuto (1982) believes that researchers must remain cognizant of the fact that organizations are social interventions to satisfy human needs. People participate in exchange relationships with an organization in order to receive a valued outcome. Continued participation or support of the organization is dependent on the continued creation of valued outcomes by the organization as perceived by the participants. In the context of valued outcomes, Talcott Parsons (1960) provides an excellent model to guide the selection process of specific criteria. Parson proposes that a system's survival depends on the exercise of four critical functions, which are fundamental to resource acquisition and can be considered organizational goals:

adaptation, goal achievement, integration, and latency. Adaptation is the process of an organization controlling its environment. Goal achievement is the gratification of system goals. Integration is the social solidarity within the system—the process of organizing, coordinating, and unifying relations into a single unit. Finally, latency is the maintenance of the integrity of the value system—the system's motivational and cultural patterns. Campbell (1977) and Steers (1975) have developed specific criteria to measure each of these. Hoy and Miskel's (1991) summary of the results of merging the general dimensions, specific criteria or indicators and other perspectives of effectiveness can be seen in Figure 2.1. In explaining the model the authors noted that "An integrated goal-system resource model of organizational effectiveness can be derived by having the four necessary functions of social systems act as operative goals. By adding specific indicators of attainment for the four goals and by considering the time frame and constituencies applicable to each indicator, we can complete the model" (p. 382).

When using the model illustrated in Figure 2.1 the authors recommend that researchers proceed in three steps. First, determine the constituencies who will define the operative goal. Second, specify a time dimension, focusing on short-term, medium-term, or long-term goals. Third, identify several criterion indicators. When making a comprehensive evaluation of organizational effectiveness you must also include outcomes for each of the four critical goals (Hoy & Miskel, 1991).

A neglected factor in the study of organizations and the assessment of their effectiveness is time. The influence of time on organizational effectiveness can be conceptualized with a continuum of success ranging from short-term, through

Effectiveness Dimensions	*Added Perspectives*	*Multiple Indicators*
Adaptation - - - - - >	Time Constituencies - - - - - - - >	Adaptability Innovation Growth Development
Goal attainment - - >	Time Constituencies - - - - - - - >	Achievement Quality Resource acquisition Efficiency
Integration - - - - >	Time Constituencies - - - - - - - >	Satisfaction Climate Communication Conflict
Latency - - - - - - >	Time Constituencies - - - - - - >	Loyalty Central life interests Motivation Identity

Figure 2.1 Integrated Model of Organizational Effectiveness

intermediate, to long-term (Gibson, 1976). For schools, representative indicators of short-term effectiveness include student achievement, morale, job satisfaction, and loyalty. Criteria for intermediate success encompass adaptiveness and development of the school organization and instructional programs, career advancement of the educators, and success of the former students. From the system resource framework, the ultimate long-term criterion is survival of the organization. Declining enrollments, school closings, and consolidating small school districts represent long-term problems of survival (Hoy & Miskel, 1991).

Another influence of time is that the criteria for organizational effectiveness do not remain constant. As constituencies change their preferences, new constraints and

expectations evolve to define school effectiveness. The goal of the effective school is, continually, to become effective rather than be effective. Hence, when discussing school effectiveness, the dimension of time is an essential component (Zammuto, 1982).

Effectiveness criteria always reflect the values and biases of constituencies or stakeholders, that is, interested individuals and groups within or outside the school who have a stake in organizational effectiveness (Cameron, 1978). For schools or other organizations with multiple constituencies or interest groups, the effectiveness criteria typically are drawn from a number of perspectives. For educational settings, the debate regarding the definitions of a good school has been joined by scholars, parents, students, teachers, politicians, government officials, taxpayers, and employers (Balderson, 1977). Schools are viewed as battlegrounds for both inside and outside stakeholders who compete to influence the criteria for effectiveness in ways that will advance their own interests. Effectiveness becomes less a scientific and more a political concept (Hoy & miskel, 1991).

Research Based on Achievement as Effectiveness Criteria

Standardized Test Scores

When speaking of school performance, many parents and other citizens, government policy makers, and scholars define organizational effectiveness narrowly. Usually they mean student scores on standardized tests measuring cognitive skills while most would acknowledge other criteria. Such critics typically ignore the school's role in developing motivation, creativity, self-confidence, aspirations, and expectation, all of which are needed for future success in school and adult life (Hoy & Miskel, 1991).

Two apparent reasons help explain the overreliance on standardized test scores. The first is political and the second is practical. Hanushek (1978) argued that several important constituencies of education see test scores as having intrinsic value. Although many educators disagree, parents, students, and government policy makers often believe that the tests are essential for measuring accountability. Furthermore, standardized test scores are commonly available to the public: hence, measuring cognitive outcomes is easier than measuring noncognitive ones (Hanushek, 1978; Maudaus, Airasian, and Kellaghan, 1980).

Even though expediency, rather than theory, has too often guided research programs on school effectiveness, student achievement is an important indicator of goal attainment. Moreover, so many influential constituencies believe in the intrinsic value of student achievement as measured by standardized achievement tests that administrators and teachers must address questions about what factors in schooling lead to higher test scores (Hoy & Miskel, 1991).

Essentially, all schools and school districts, and many states as well, have testing programs. In the late 1970s, twenty-nine states had or were considering competency-based testing programs. By the late 1980's, virtually all states had some type of testing program for students, educators, or both (Madaus, Airasian, and Kellaghan, 1980).

The most frequently used testing instruments come in batteries of subscales that purport to measure a variety of skills. Widely used standardized achievement tests include the Iowa Test of Basic Skills and the Metropolitan Achievement Test. Virtually all of the test batteries measure knowledge of English and mathematics. Science, social studies, and other subject areas form additional achievement subscales. SAT and ACT

scores also have become popular indicators of school effectiveness. During the last two or so decades, new roles and expectations for standardized testing have emerged. In particular, the internal control of testing to guide classroom decisions now coexists with external control of testing to drive policy choices (Airasian, 1987).

Two approaches to studies of cognitive achievement as an indicator of organizational effectiveness appear in literature. The first is designated production function research, and it became popular in the mid-1960s. Also termed input-output analysis, the technique was developed by microeconomists to predict the output of a system using sets of input, or independent, variables (Hoy & Miskel, 1991). Hanushek (1989) asserts that the underlying model is forthright. It assumes that the output of the educational process is related directly to a series of inputs. In a school setting, the input groups usually are classified as family resources, school resources, community characteristics, student resources, and peer group characteristics, while the outputs are scores on achievement tests. The purpose is primarily to predict an outcome, rather than to explain how the result was produced. Therefore, statistical analysis, usually some form of regression analysis, is employed to infer specific determinants of achievement and the importance of each input on student performance (Lau, 1978).

Production Function

A review of the literature reveals two approaches to using cognitive achievement as an indicator of organizational effectiveness. The first, production function research, was popular in the mid-1960s. This technique, also termed input-output analysis, was developed by microeconomists to predict the output of a system using sets of input, or independent, variables. Hanushek (1989) notes

that the underlying model is forthright. It assumes that the output of the educational process, scores on achievement tests, is related directly to a series of inputs such as family resources, school resources, student resources, community characteristics, and peer group characteristics. The purpose of this approach is primarily to predict an outcome, rather than to explain how the result was produced. Therefore, statistical analysis, usually some form of regression analysis, is used to infer specific determinants of achievement and the importance of each input on student performance (Hoy & Miskel, 1991).

James S. Coleman and his associates (1966) conducted the most influential educational study reflecting this approach, *Equality of Educational Opportunity*. Popularly known as the Coleman Report, it remains the largest survey of American public education ever taken. Nationally, 645,000 students completed standardized ability and achievement tests as well as forms to describe their family backgrounds. Approximately 60,000 teachers responded to questionnaires about their educational experiences, teaching tenure, attitudes, and verbal ability. Finally, data on a variety of organizational variables including class size, school organization, libraries, and laboratory facilities were collected from over 4,000 schools.

The most surprising finding concerned the role the school had in pupil achievement. When home background variables were controlled, school factors appeared to explain little variance in the test scores. What mattered most was not the material quality of the school, but the students' home backgrounds before entering the school and their peers (Hoy & Miskel, 1991).

No matter how they are measured, differences in socioeconomic background of the family lead to significant differences in student achievement. Still, little room for doubt exists that differences among schools and teachers are important to achievement. Schools are not homogeneous in their effects on students: schools differ in effectiveness (Hoy & Miskel, 1991). Larry Cuban (1984) notes that the initial impulse behind the study of effective schools was to improve academic achievement in low-income, largely minority schools.

Organizational Research

Scholars have deduced what they believe are the few—three, five, six, or ten critical school factors for enhancing scores on standardized tests. As popularized by Ronald Edmonds, Lawrence C. Stedman (1987) observes that most educators are now familiar with the five-factor effective schools formula: (1) strong leadership, especially in instructional matters; (2) high expectations by teachers for student achievement; (3) an emphasis on basic skills; (4) an orderly environment; and (5) frequent, systematic evaluations of students. While Stedman is critical of previous attempts to synthesize the literature of effective schools, he offers his own nine-factor formula. Although this small set of school variables is also limited in its ability to describe and explain the complex processes related to academic achievement, he did concentrate on case studies of the best examples of schools-those that had grade-level success with low-income students for several years.

School organizations and academic achievement are highly complex and simple five or even ten-item formulae will not solve the problems of increasing school effectiveness. School climate or culture, instructional behaviors of administrators,

classroom organization, and bureaucratic, motivational, leadership, and communication processes should be studied in schools to add further explanations about how schools influence academic achievement. Although standardized achievement tests contain conceptual, empirical, and political traps for educators seeking an indicator of school effectiveness, they are essential in measuring performance (Hoy & Miskel, 1991).

Organizational Coupling

While schools may have traditionally functioned as loosely coupled systems, accumulating evidence has begun to suggest that strengthening organizational coupling in the areas of curriculum and instruction may enhance instructional effectiveness at the school and district levels.

There are a variety of alternative and emergent organizational perspectives that are potentially useful in studying the organization and operation of public elementary and secondary schools. The image of organizations as loosely coupled systems has been argued to be especially applicable to educational organizations (Clark, 1981). That is, the individuals, units, processes, and actions within public elementary and secondary schools may be more loosely linked than classical, bureaucratic theory would presume and this loose coupling is not necessarily an indication of organizational pathology (Weick, 1982).

However, research and commentary on the instructionally effective school indicate that tight linkages enhance effectiveness (Edmonds, 1979). The tight linkages become apparent when the variables characteristic of successful urban schools are considered. The descriptions of those variables offered by Edmonds (1979) accentuate the underlying assumptions about the existence of tight linkages between the individuals.

units, processes, and actions in the instructionally effective school. For example, Edmonds (1979, p. 22) asserted that the instructionally effective school is characterized by the following:

1. Strong administrative leadership without which the disparate elements of good schooling can neither be brought together or be kept together.
2. A climate of expectation in which no children are permitted to fall below minimum but efficacious levels of achievement.
3. An atmosphere or organizational climate that is orderly without being impressive and generally conducive to the instructional business at hand.
4. A commitment to pupil acquisition of basic skills that takes precedence over all other school activities.
5. The divergence, when necessary, of school energy and resources from other business in furtherance of the objectives.
6. The establishment of some means by which pupil progress can be monitored.

Each of these characteristics represents a classical, bureaucratic image of instructionally effective schools, as they imply closely-knit sets of relations between and among the people, processes, and outcomes in the school. These schools, in fact, have been described as bureaucracies that work. For example, the description of strong administrative leadership assumes tight linkages not only between the administrator and all other people in the building or district, but also between the administrator and the instructional processes (Astuto & Clark, 1985).

If this classical, tightly coupled image of instructionally effective schools is correct, instructionally effective schools seem to differ markedly from other educational

organizations. Undoubtedly, effective schools are characterized by simultaneous loose-tight properties. The key to organizational effectiveness is not the arbitrary tightening or loosening of coupling strength. Rather, the key to organizational effectiveness is sensitivity to coupling as an organizational variable and the identification of patterns of coupling that enhance or impede organizational effectiveness (Astuto & Clark, 1985).

Effective Schools Research

The Origin of Effective Schools Research

In 1966, James Coleman and several colleagues conducted a national survey entitled, *Equal Educational Opportunities Survey*. The purpose of this survey was to assess the distribution of educational resources by race and based on these descriptive data, assess equality of educational opportunity in public schools. Coleman and his colleagues indicated that schools did not significantly affect student performance. The students' social environments were more directly related to student success. In 1972, Jencks and a group of Harvard colleagues in *Inequality: A Reassessment of the Effect of Family and Schooling in America* also supported the idea that schools did not seem to make a difference. This public acceptance constituted a formidable obstacle to the advancement of educational equity and to the general improvement of student achievement (Mace-Matluck, 1990).

Fortunately, for public education, many researchers did not accept the Coleman hypothesis (Lezotte, 1990). As a result of Jencks' studies, the question of whether effective schools actually existed eventually surfaced. Mace-Matluck (1990) discussed the notion that student progress clearly varied from school to school, and that the real question was whether this variation in achievement among schools was affected by

school process or whether this variation could be explained completely in terms of student aptitude.

The Growth of Effective Schools Research

The period of the late 1970s brought about case studies, program evaluations, and coalitions that attempted to define effective schools. Mace-Matluck (1990) offered that the synthesis of an effective school is one in which the conditions are such that student achievement data show that all students evidence an acceptable minimum mastery of those essential basic skills that are prerequisite to success at the next level of schooling.

The next period, 1983-1998, focused on implementing the findings from effective school research into schools. During this time period, educators saw the production of a plethora of resources and materials designed to aid people in the implementation of effective school concepts. The U.S. Office of Education funded two Research and Development Centers that were charged with conducting basic research and supporting the development of effective programs in U.S. schools. A generic model of school improvement was put forth by Edmonds (1978) and has been refined by others as public schools move towards becoming more effective (Mace-Matluck, 1990).

While the Effective Schools movement was growing in popularity there were also those who were not convinced it was a panacea for education. Cuban (1983) cautioned against rushing to implement the changes called for by effective schools advocates. He listed and described several significant problems and unanticipated consequences that occur in the research and application of the effective schools findings. The problems included the following: no one knew how to grow effective schools; there was not agreement on definitions on key concepts; and effectiveness was defined too narrowly.

The unanticipated consequences included the following: increased uniformity: a narrowed educational agenda: and heightened conflict between teachers and administrators over instructional leadership.

Public schools as organizations were never designed to teach all students. especially those from poor families. to a high level of achievement. Furthermore. all teachers and administrators have had a minimum of 12 years of acculturation as students to the norms. beliefs. and behaviors of an institution whose mission seems to be teaching and learning for all. Although many criticisms of the Effective Schools movement have been documented. one fact appears to be evident. schools exist that are able to attain remarkably high levels of pupil mastery of basic school skills even though these schools are serving large proportions of economically poor and disadvantaged students. minority and nonminority (Lezotte. 1990).

A similar movement. The Excellence Movement. also evolved during the time the Effective Schools work was being performed. Appearing between 1980 and 1983 this top-down educational reform campaign threatened to overcome the more modest Effective Schools movement. Those involved with the Effective Schools movement felt there was cause for concern (Mace-Matluck. 1990).

The Effective Schools movement and the Excellence Movement shared some similarities. The two movements are similar in that each: (a) is fundamentally a positive effort to improve schools. and each assumes that schools can and should do better: (b) is concerned with student outcomes: (c) has produced models which are intended to increase school effectiveness and call for schools to become more orderly and focused on

academics: and (d) criticize former practices for less than adequate expectations for student learning (Mace-Matluck, 1990).

While the two movements did share some similarities there were very important differences between the two. These significant differences are well described by Zerchykor (1985). The Excellence Movement focused on the secondary level, while the Effective Schools movement focused primarily on the elementary level. The Effective Schools movement targeted basic skills, such as reading and math, while the Excellence Movement focused on higher-order skills and competencies and mastery of subject matter above and beyond basic skills and minimum competencies. The Excellence Movement encouraged the nurturing of the top students, calling for tighter standards, the development of more demanding curriculum, and an increase in achievement and aptitude scores. While schools adopting the Excellence Movement could be effective for the "best-and-the-brightest" students, they wouldn't necessarily be effective for all students. This is in sharp contrast to the Effective Schools movement, which promoted a goal of success for all. The importance of this difference is noted by Mace-Matluck (1990). "There is a growing realization at the national level, for example, that the economic and social good of the country cannot be served if a burgeoning population of minority students is left behind" (p. 16).

Trends of the 1990s

In 1983 The National Commission on Excellence in Education released its report and recommendations in a report entitled *A Nation at Risk*. The report immediately elevated the concern for improvement of the U.S. educational system. The report concluded that there was a rising tide of mediocrity in education and that the U.S. had

been moving toward unthinkable, unilateral educational disarmament. The commission concluded that "...if an unfriendly foreign government had attempted to impose on America the mediocre educational performance that exists today, we might well have viewed it as an act of war" (Levine & Levine, 1996, p. 401).

A Nation at Risk called several factors to the attention of the American public. The report noted that there was a decline or inadequacy in the public education system. Evidence of this decline was the weakening of high school graduation requirements, declining achievement scores, and unacceptable graduation rates. The commission called for more stringent requirements and higher expectations for students in what it called the "Five New Basics." These areas of study included English, mathematics, science, social studies, and computer science. To improve achievement the commission recommended assigning more homework, emphasizing study skills, increasing the length of the school day and school year, and improving the management and organization of schools. The commission also had the following recommendations regarding teachers: Higher standards for teacher preparation programs; competitive performance based salaries; career ladders; eleven month contracts; mentoring for new teachers; and alternative routes to certification (Levine & Levine, 1996).

A number of other reports that addressed the status of education and made improvement recommendations were released at approximately the same time as *A Nation at Risk*. The Education Commission of the States published a report produced by its Task Force on Education for Economic Growth (1983), that also called for higher academic standards and improvements in the areas of discipline, curriculum, teaching, and the status of teachers. The College Board (1983) also released a report that

recommended school officials dramatically increase requirements and standards for high school graduation and entry into post-secondary education (Levine & Levine, 1996).

By the latter part of the 1980s there was a sense of urgency regarding public education. Many felt that students, especially minority students, were graduating without possessing adequate skills to succeed on the job or to progress beyond initial low-level jobs. An additional concern was that many other students who were entering the labor force had poor reasoning skills, problem-solving abilities, and other higher-order skills. As noted in Levine & Levine (1996) "...public education in our postindustrial, metropolitan society is in a state of crisis related to the deepening problems posed by international economic competition, introduction of high technology as a fundamental consideration in social and economic development, and inadequate functioning of the educational system for a large proportion of students, particularly minority students in concentrated poverty neighborhoods" (p. 396). This statement becomes especially significant in light of demographic studies that have indicated that more than one-third of new entrants in the labor force of the future will be minorities (Levine & Levine, 1996).

Much of the data on achievement levels and patterns in public schools has been collected through the National Assessment of Education Progress (NAEP) tests, which have been administered since the early 1970s. Some major conclusions can be drawn from this data: 1. Average performance levels have been mostly stable for the past two decades. Reform efforts of the 1980s have not resulted in significant changes. 2. Relatively low percentages of students reach high performance levels on NAEP tests. 3. When compared to students from developing countries, U.S. students are at the bottom

rank on higher-order mathematics skills. Similarly, science skill scores were below Japanese school scores in one-third of the U.S. schools (Levine & Levine, 1996).

There are numerous possible explanations for the performance levels of U.S. schools on the NAEP. One contributing factor is the tendency for teachers to emphasize instructional practices that concentrate on enhancing lower-level skills. Levine & Levine (1996) note that "Analysts working with NAEP data...found that approximately half of the eighth-grade English teachers in their surveys admit to focusing on the mechanics of English as a central part of instruction" (p. 397). Applebee, Langer, and Mullis (1990) found that most classrooms relied on

> "...teacher presentations, textbooks, and workbooks or teacher-prepared exercises. Such patterns of instruction appear to have been successful in helping large numbers of students attain basic levels of proficiency in each subject...[but] do not seem to have been successful...[in developing higher-order skills involving complex reasoning and problem solving]. For gains in higher-order skills to occur the goals of instruction need to be reconsidered. Teaching decisions were once guided by a hierarchy suggesting that students must first learn the facts and skills and later learn to apply them. Yet many educators now recognize the limitations of this stepping-stone view of education. Educational theory and research suggest a different pattern...[in which content mastery and learning of higher-order skills occur together. For more thoughtful learning to occur, teachers will need to orchestrate a broader range of instructional experiences" (p. 40-41).

There have been many others who have made analyses and recommendations similar to those proposed by NAEP. In 1990, representatives from twenty national

educational educators' associations met and agreed that it was imperative to improve teaching and learning of critical thinking and problem solving. A short time later the National Academy of Sciences released a three-year study that indicated that biology was being taught in ways that mainly involved exercises in memorization rather than intellectual exploration (Levine & Levine, 1996). Several other studies (Schaub and Baker, 1991; Stigler and Stevenson, 1991; Anderson and Soniak, 1994) found that emphasizing rote learning accounted for the generally low performance in science and math by U.S. students when compared to students in Japan and other Asian countries.

Many educators have also called for the reexamination and massive transformation and reform of traditional education in the U.S. The National Council of Teachers of Math developed a program to train and retrain teachers so that they may place emphasis on problem solving rather than mechanistic answer finding. Albert Shanker, president of the American Federation of Teachers in 1990 put it very succinctly

> "Every child in a given community still starts school by virtue of having passed a certain birthday. Children arrive together on the same day that the beginning of school and leave o the same day at the end. They still are organized into large classes where, at the elementary level, they spend most of the day listening to a teacher who must push or pull them through the various lessons so they can all get more or less to the same point at he end of the year. At the secondary level, students still are passed as a group from classroom to classroom, teacher to teacher and subject to subject about every 40 to 50 minutes. Instruction still is organized by curriculum, and curriculum is organized into units to be "covered" and tested by a certain time. We live in a technologically sophisticated

society, but "chalk and talk" still is the main technology of schooling from K through 12.

In other words, most schools still act though education is something done to a child—poured in or glued on—rather than something the child, with the help of the school, makes happen. (p. H4756)" (Levine & Levine, 1996, p. 400).

Major national reports calling for an increase in schools effectiveness continued to be published in the late 1980s and 1990s. The reports generally carried a similar theme, calling for radical reform in elementary and secondary education. It was common for the reports to stress the mismatch between national requirements for a more highly skilled work force and current performance levels in schools: the need for a comprehensive response that included schools, business, labor, public-interest groups, and government; and that schools be restructured in order to bring about noticeable gains in student performance (Levine & Levine, 1996).

Elementary Level

Ronald Edmonds and his colleagues studied elementary schools in New York and Michigan in which students at low-income schools were achieving at a level comparable to more advantaged students, and concluded that the "most tangible and indispensable characteristics" of these schools were (1) strong administrative leadership; (2) a climate of expectation in which no children are permitted to fall below minimum levels of achievement; (3) an orderly and quiet atmosphere; (4) a strong emphasis on acquisition of basic skills; (5) concentration of resources and energy on attainment of fundamental objectives; and (6) frequent monitoring of student progress (Edmonds, 1979; Bullard & Taylor, 1993; Teddlie, 1996).

Additional detail regarding the characteristics of unusually effective elementary schools was provided in a study (Levine & Stark, 1982) of instructional and organizational arrangements at high-achieving inner city elementary schools in Los Angeles and Community District 19 in Brooklyn, New York. District 19 schools had introduced a comprehensive reading approach that placed emphasis on the Chicago Mastery Learning Reading Program, now called "Insights," which is explicitly designed to teach comprehensive and other higher-order skills in kindergarten through eighth grade. When the training is successful, teachers are less likely to rely on basal texts regardless of whether they are too advanced for some students or too simple for others. Drawing on these and other approaches, the unusually effective inner-city schools in this study exemplified the following characteristics: (1) curriculum objectives, teaching materials, and testing were being aligned with each other; (2) arrangements more effective than the customary Title I "pull-out"; (3) relatively greater emphasis was placed on higher-order cognitive skills; (4) explicit efforts were made to minimize teachers' record-keeping chores; (5) supervision was much more out-come based; (6) administrators were supportive and skilled in providing a structured environment; (7) administrators were willing and able to bend rules in a manner that enhanced school effectiveness.

Intermediate Level

Relatively few studies have succeeded in identifying the distinctive characteristics of effective secondary schools. One reason for the shortage of research is the small number of secondary schools that stand out as having high achievement compared to other schools similar in socioeconomic composition. Difficult as it has been to find

unusually effective elementary schools (in terms of academic achievement), finding successful secondary schools has been even more difficult (Levine & Levine, 1996).

A few intermediate schools, however, have demonstrated that their students' achievement can be raised to relatively high levels. Following a search for high-achieving inner-city intermediate schools(defined as junior high schools including grades 7, 8, and 9 or middle schools including grades 7 and 8), Levine and his colleagues (1984) identified five such schools in four big cities. They concluded that effective inner-city intermediate schools exemplified these four common characteristics:

1. Organizational arrangements facilitated improved reading performance among low-achieving students.
2. Teachers emphasized achievement of higher order cognitive skills.
3. Guidance and personal development of students were emphasized.
4. Expectations and requirements for student performance were consistently and extremely high and rigid.

Each successful intermediate school had a different approach and mixture of approaches for attaining the goals implicit in these four characteristics. Some approaches used by these schools included:

- More time devoted to reading, language, and math.
- Individual and small group tutoring.
- School-within-a-school units for low achievers.
- Availability of elective courses emphasizing high-order skills.
- Large numbers of counselors and guidance personnel.
- Required summer school for failure in any subject.

- Weekly or biweekly report cards.

Each of the schools in this study had made structural changes to improve the performance of its students, particularly their low achievers. By structural change, they mean major modifications in the schedule as well as in how students and teachers are assigned to classes. For example, one school had changed the typical pattern so that classes of low achievers were much smaller than average classes; another had reduced the time devoted to science and social studies in order to increase the allocation for reading and math. Such changes appear to be prerequisite to school effectiveness at the secondary level (Fullan, 1991; Fullan & Miles, 1992; Levine & Lezzotte, 1995).

Senior High Level

Because there are fewer successful inner-city schools at the senior high level than at the elementary or intermediate levels and because high schools usually are much more complex than at the lower schools, relatively little is known about the characteristics of unusually successful senior high schools. Among the few inner-city high schools for which there are data indicating that substantial gains have been made in improving student performance is South Boston High School. In 1975, South Boston became desegregated high school attended by predominantly low-income and low-achieving white and black students. Reform of South Boston took several years to accomplish during a time of continuing turmoil related to desegregation and political upheaval in the Boston school system, but by 1980 data on improvement in the performance of students were encouraging and impressive. Between 1979 and 1980, for example, average reading scores improved from the 16th percentile to the 40th percentile in the ninth grade and from the 18th to the 32nd percentile in the tenth grade. In addition, the percentage of

graduates attending postsecondary educational institutions increased from fewer than 8 percent in 1976 to 40 percent in 1980. Considerations that appear to have been most important in accounting for these and other improvements at South Boston included the following:

1. A new principal and administrative team made major changes in traditional organizational patterns and insisted that staff members reexamine their methods in order to develop more effective approaches for educating disadvantaged youths.
2. Teachers willing to discard traditional methods that were largely ineffective replaced two-thirds of the previous faculty.
3. Alternatives to address the learning problems of students included a self-contained school-within-a-school emphasizing academic learning, and a mini-school emphasizing experiential learning and individualized instruction.
4. Nearly all ninth and tenth graders were placed in reading and writing courses rather than in traditional English classes.
5. Students were placed in mathematics courses rather than in business mathematics, which was primarily beginning mathematics.
6. Work-study programs based on learning opportunities in the community.
7. Discipline throughout the school was firm but fair.
8. Strong security measures were imposed as needed.
9. School spirit and pride were systematically emphasized.
10. Systematic guidance and personal development of students was emphasized.
11. An effective in-school suspension program was introduced.

12. A systematic effort was made to draw on resources in the community in order to overcome the many personal problems that hinder learning (Kozberg & Winegar, 1981).

Since no two schools share exactly the same problems and possibilities, one cannot say that other secondary schools should implement exactly the same set of changes as were introduced in South Boston. However, some of these changes, such as systematic emphasis on school spirit, firm but fair discipline, and emphasis on development of reading and math skills, have received considerable support in research on effective high school approaches for improving student performance, particularly among low achievers (Levine & Lezotte, 1995).

Since the early 1980's, research has identified organizational characteristics that seem to make some schools effective. But because the bulk of this research has been conducted at the elementary level, it is important to ask how applicable these findings are to secondary schools. Research done by Research for Better Schools, highlights the differences between elementary and secondary schools and suggests that the basic organizational structure at the secondary level may necessitate different approaches to improving effectiveness and even different definitions of effectiveness. The results of the study suggest that some of the features that characterize effective schools are significantly less prevalent at the secondary level than in elementary schools due to the broad goals and departmentalized structure of secondary schools (Firestone & Herriott, 1982).

Considerations Affecting Interpretation of Effective Schools Research

Readers of effective schools research should be aware of a number of considerations that may affect interpretation and conclusions. First, definitions of school effectiveness are widely divergent. Some persons refer to a school with unusually high academic achievement, usually after taking account of social class; but others may be referring to a self-renewing school that continuously identifies and solves internal problems, or to a school that promotes students' personal growth, or to a school that concentrates on independent learning.

Second, most research on effective schools is correlational. Researchers have identified characteristics (correlates) of unusually effective schools, but only a few have manipulated a particular variable, such as expectations for students or leadership of the principal, to assess effects on achievement. Dependence on correlational research makes it difficult to be certain that efforts to improve a given characteristic will make any real difference in students' performance.

Third, other methodological problems have left much of the research vulnerable to criticism. For example, schools identified as effective in a given subject (e.g., reading) during a given year may not be effective on other measures or on the same measure in subsequent years. In addition, statistical controls for students' social class and family background frequently have not been adequate to attribute high achievement to school characteristics.

Fourth, the identification of general characteristics cited in the effective schools research does not provide teachers and principals with much specific guidance about what they should do in the schools. For example, saying that a school has a productive

climate and good leadership does not provide much direct help in determining how to accomplish these goals.

Finally, most of the research has been concerned entirely or largely with inner-city schools. School identified as unusually effective in such studies generally have been poverty schools in which academic achievement is higher than at most other schools with similarly disadvantaged students. It is more difficult to identify effective schools outside the inner city, where high achievement is more common. In addition, the key components of effectiveness outside the inner city differ in some respects from those at poverty schools (Levine & Levine, 1996).

Educational Leadership

What school leaders stand for and believe about education and schooling, the role of education in our society, how schools should be structured and operated, and how parents, teachers, and students should be treated constitutes a basic set of principles that bring meaning and integrity to educational leadership (Sergiovanni, 1984). Successful leaders infuse a common set of values, ideals, and principles in their schools. The task is to build school culture.

Leaders can help shape the culture of an organization by what they pay attention to and reward. Systematic attention is a powerful way of communicating values and beliefs. Moreover, leader reactions to critical incidents and perceived crises are important in building culture. Actions speak louder than words when it comes to communicating organizational values and beliefs to other members (Schein, 1985).

A reasonable reading of research on schools in the last couple of decades leads to the interpretation that schools can develop as places for excellent teaching and learning.

But, left to their own devices, many of them will not. We know, on the one hand, that instruction in classrooms is the essential core activity in our educational systems and that some schools within those systems provide serious, productive, and even pleasing instruction for students. In such schools, the educators become fulfilled in their work. On the other hand, we know that many classrooms, schools, and school districts function as little more than loose amalgams of roles and duties (Greenfield, 1987).

Instructional Leadership-The Exceptions And The Rule

In spite of the usual number of detractors, there is significant spirit of optimism among educators these days. While national reports point critical fingers at high rates of illiteracy, comparatively low achievement averages, and watered-down curricula, educators are finding a silver lining in the attention they draw toward education at the federal and state levels. With all of the negative conclusions, the reports can give a symbolic impetus to positive school change in local districts (Deal, 1985).

Beyond these reports, research on effective schools and school improvement projects reverses a decade-old conclusion from Coleman et al. (1966) that "schools don't make a difference." Instead, we have dozens of accounts of schools where children from poor families as well as diverse kinds of communities are reaching levels of achievement that surpass those predicted for them.

The Superintendent as Instructional Leader

> Given that the literature of effective schools suggests that no school can become effective without the visible and active involvement of the principal hip-deep in the elementary school instructional program, then it also seems likely that no school board approving policies aimed at systemwide improvement can hope to

achieve that condition without a superintendent who sustains a higher than usual involvement in the district's instructional program (Cuban, 1984, p. 129).

Research on the superintendency in general is remarkably thin, while research on the leadership role of the superintendents is sparser still. Only a handful of studies conducted over the last 15 years examine the instructional leadership role of superintendents (Murphy & Hallinger, 1986). As Bridges (1977) noted in his examination of the "state of the art in research on school administration. "Despite the importance of this administrative role (the superintendency) to education and society, less than a handful of studies analyzed have investigated the impact of the chief executive officer. This topic merits both reflection and empirical examination since nothing of consequence is known about the impact of the occupants of this role".

Research on the superintendency must begin to integrate powerful constructs developed with measures of organizational effectiveness. These constructs include variables identified in studies of effective teaching and schooling, the concept of organizational coupling, and the functions of coordination and control as they relate to the role of management in improving productivity (Hallinger & Murphy, 1982).

Superintendents in instructionally effective school districts reported that they were actively involved in managing and directing technical core activities in their districts. They used a variety of both direct and indirect leadership tools. They controlled the development of goals both at the district and school levels: they were influential in establishing procedures for the selection of staff: they took personal responsibility for the supervision and evaluation of principals: and they established and

regularly monitored a district wide instructional and curricular focus. A detailed analysis of each of these functions is presented below.

1. *Setting goals and establishing expectations and standards.* Superintendents were deeply involved in the development of district level goals. More importantly, they also exercised direct responsibility for ensuring that school level objectives reflected district achievement norms
2. *Selecting Staff.* Effective school district superintendents were often involved in the selection of new teachers and almost always involved in the selection of new administrators. One of the primary activities of superintendents in this area was the development of selection criteria and procedures. Superintendents reported that skills in managing curriculum and instruction followed by human relations' skills.
3. *Supervising and evaluating staff.* Superintendents had primary responsibility for the supervision and evaluation of principals. As part of the supervision process, they regularly met with individual principals. Superintendents used school visits to examine how both district and school level systems were operating and to confirm or disconfirm a variety of information they picked up from people through the district and community.
4. *Establishing an instructional and curricular focus.* One often-overlooked area of potential superintendent instructional leadership is the establishment of a district focus on instructional and curriculum activities.
5. *Ensuring consistency in technical operations.* Curriculum and instructional goals were most important and curricular and instructional expertise was the

most important factor in the selection of new administrators. Superintendents were also active in the selection of the staff development programs in their districts. Significant amounts of time were devoted to issues of curricular and instructional coordination.

6. *Monitoring curriculum and instruction.* An important method by which superintendents inspected technical operations was through their visits to schools. During these visits they reported reviewing the following: a) the extent to which district and school goals were being implemented in classrooms; b) the match between the district adopted curriculum and the objectives emphasized during class lessons; c) the pervasiveness of the district-preferred teaching strategy; d) the principals' clinical teaching and supervision skills; e) the effectiveness of school and classroom management practices as reflected in student movement patterns on the school campus and student engagement rates in classrooms; and f) the principals' level of understanding about what was happening in the areas of curriculum and instruction in their schools.

Hallinger & Murphy (1982) conducted a study that examined the behavior of a group of elementary school principals in a district in which the superintendent had implemented policies to promote instructional leadership. The superintendent designed and implemented the following district-wide policies and practices aimed at promoting instructional leadership.

1. He defined the district's primary goal to be improving student achievement as measured by test scores. This goal was to be reflected in the goals and programs of individual schools within the district.
2. The school goals of the principals were collected and reviewed by the district office.
3. He made explicit his expectation that principals were to be highly involved in managing curriculum and instruction at school sites.
4. Each school was assigned a vice-principal with the understanding that the purpose was to free up administrative time for instructional supervision and support.
5. Promotions to the positions of staff development trainer, vice principal, and principal were based upon instructional expertise. This sequence of positions became a new career path within the district.
6. Many teachers and all principals received ongoing extensive inservice training in instructional strategies, lesson design, and classroom management. The superintendent set the expectation that principals be highly competent in these areas so they would have the expertise to provide instructional support to teachers.
7. All principals participated in ongoing staff development in the areas of instructional supervision and teacher evaluation. The supervision and evaluation practices of the principals were then monitored and reviewed by district office personnel on a regular basis.

8. The principals were also involved in the process of curriculum coordination in cooperation with the district office curriculum department. District-wide curricular objectives were established. These were then aligned with textbooks used in the schools and tests used for assessment and evaluation. Principals were expected to see that the curriculum was taught.
9. A staff position was created at the district level whose primary purpose was to guide the integration of school and teacher effectiveness findings into district programs.

The superintendent's program for promoting instructional leadership had an impact on the behavior of the principals. This study was not designed to measure the effect of the superintendent's program for promoting instructional leadership. It seems reasonable, however, to suggest that the district level policies and practices described earlier may have created a climate in which instructional leadership would be exercised more actively. Several examples of how this may have occurred can be suggested.

The promotion policies of the superintendent focused upon expertise in curriculum and instruction. He had made only three promotions to elementary principalships during his first four years in the district. Yet the two top rated instructional leaders were among the three appointments. This suggests that the superintendent's promotion policy may have had an effect on instructional leadership within the district.

The development of the vice principalship may also have influenced the instructional leadership behavior of the principals. The appointment of vice principals relieved the principals of some of the time pressures inherent in the job, pressures which principals contend limits their ability to spend time in classrooms. This factor by itself

sets the context for this research apart from other studies of elementary school principal behavior. There were two administrators available in the schools to do the job that one principal is generally expected to do. In addition, the vice principalship became an apprenticeship for future principals. The two top ranked instructional leaders both had an opportunity to practice their instructionally oriented training as vice principals prior to their promotion by the superintendent. Finally, a norm was established within the district that promotions would be made on the basis of instructionally related skills.

Another area in which the superintendent's policies in this study clearly promoted instructional leadership is supervision and evaluation. These job functions are not generally practiced with consistency or rigor in schools, yet they are being practiced with great frequency in this particular school district (Hallinger & Murphy, 1982).

The Principal as Instructional Leader

As policymakers turned their attention to finding effective leaders for the nation's schools, they faced as many questions as answers. A dominant belief in policy circles, driven in large part by the academic-standards movement, was that principals, instead of being building managers, should become leaders of instruction-dynamic, inspirational educators focused almost exclusively on raising student achievement (Olson, 2000).

The changes in what is expected of principals have been dramatic. The principalship has gone from a position that was largely managing a student program, managing teachers, and managing the facility to one where the main responsibility now is instructional leadership (Olson, 2000).

Because principals view supervising instruction as their most important duty, effective ones make regular visits to classrooms to monitor instruction (Cohen and

Manasse, 1982). They articulate the learning expectancy, expect teachers to achieve it, involve teachers in decision making regarding teaching and learning, and regularly evaluate teacher performance as it relates to student learning (Brookover and Lezotte, 1979).

The importance of instructional leadership to school effectiveness has been a recurring theme in educational research findings. In addition to the emphasis placed on instruction and leadership, the significance of principals as the chief providers of instructional leadership has increased.

Although many principals consider instructional leadership to be one of their most important responsibilities, the amount of time spent on instructional activities can be less than time spent on managerial tasks. Consequently, in schools without adequate instructional leadership, a lack of consensus about what teachers should be teaching and ambivalence about what, how much and how well students are learning exists (Shoemaker, 1984).

Educational observers argue that administrators are ill-equipped for environments in which they, along with their students and teachers, are judged according to test scores and performance goals to a greater degree than ever before. While principals have to know something about instruction, they must be motivated, provide resources, and find people to help if they do not have the expertise in their school to deal with an instructional problem (Olson, 2000).

A clear difference in the principal's role exists in improving and declining schools. In improving schools, principals are more likely to be instructional leaders, assertive in their instructional leadership role, more of a disciplinarian and perhaps most

of all, more responsible for the evaluation of the achievement of basic objectives. The principals in declining schools appear to be permissive and to emphasize informal and collegial relationships with teachers. They put more emphasis on general public relations and less emphasis upon evaluation of the school's effectiveness in providing a basic education for students (Edmonds, 1989).

Principals in high-achieving schools were more likely to involve teachers in critical decisions about instruction. They were also more likely to recognize the accomplishments of students and to communicate with the community about academic achievement in their schools (Heck & Marcoulides, 1993).

> One attribute of a high-performing school is a dedicated and dynamic principal. The principal is committed beyond the normal call of duty, and feels a personal responsibility to ensure their students' success. The principal is the educational leader of the school and the person who, on a day to day basis, ensures those students receives a quality education. The principal establishes high standards and expectations, and takes the initiative to promote consistent commitment to those standards and expectations. Moreover, the principal assumes responsibility for the education their students receive and do not entertain excuses for why students cannot learn. Their belief that all students can and will learn permeates the school environment and contributes to the success of the school. However, principals do more than just believe that students can learn. In order to obtain results, they collaborate with other stakeholders to develop initiatives that promote high academic achievement for all students (Andersen, 1997, p. 24).

In a study funded by the Price Waterhouse Coopers Endowment of the Business of Government. Teske and Schneider (1999) examined leadership as a factor in the creation of good schools. They observed eight New York City schools identified as high performing. While the schools varied in size. grade level served. and characteristics such as management style or level of parental involvement. Teske and Schneider found one common element: strong and consistent leadership by the school principal.

> Each principal was integral to defining the culture of the school. whether they had created it or adapted to it...(The School) share a strong set of values that support a safe environment: high expectations for every student: a belief in the importance of basic skills instruction: clear performance goals and continuous feedback: and strong leadership and a belief in its importance. Each principal had a vision and an articulated vision for their school (p.22-23).

The Charles A. Dana Center for the U.S. Department of Education conducted another observational study of high-performing schools. this time nine high-poverty urban elementary schools. Although the schools are described as different in many ways. some common themes highlighting the importance of the principal emerged. Among those common themes were:

- School leaders created a collective sense of responsibility for school improvement. The shared sense of responsibility was nurtured by joint planning processes and reinforced by efforts to involve everyone in key components of the school's work.
- The quality and quantity of time spent on instructional leadership activities increased. Principals spent more time helping teachers attend to instructional

issues and decreased the time teachers spent on distractions that diverted attention away from teaching and learning.

- Educators persisted through difficulties, setbacks, and failures. In spite of challenges and frustrations, school leaders did not stop trying to improve their schools (1999).

Principals in the nine schools "constantly challenged the school staff to higher levels of achievement...generously praised the efforts of contributors, and then artfully redirected the entire school toward even higher goals for the achievement of their students" (Teske and Schneider, 1999,16).

Because the task of creating a more effective school falls on the shoulders of principals, they must discover ways to inspire and encourage school personnel to consider the promise and the challenge effective schools research offers. To create an effective school, principals must make learning and teaching their highest school priority. The expectation that students can learn, will learn, and must learn, should be the battle cry of all principals seeking higher student achievement (Carter & Klotz, 1990).

The Role of the Superintendent in Effective Schools

Districts that have embraced the mission of improving schools along the lines suggested in the literature of effective schools, that is goal setting, targeting academic aims, establishing and maintaining high expectations and frequent monitoring These policies promote a tighter coupling between organizational goals and the formal structure, while relying on a traditional top-down pattern of implementation. Most often at the instigation of the superintendent, these policy decisions trigger a similar pattern of

activities in the school district. This pattern includes the adoption of the following policies:

1. Superintendent and school board establish district-wide instructional goals, often stated in terms of student outcomes, that is, improvement in test scores.
2. Superintendent mandates planning process for each school. Each staff produces school-wide and individual classroom goals targeted upon student outcomes and aligned with the district goals.
3. The district curriculum for kindergarten through twelfth grade is reviewed to determine if the objectives for subject matter and skills, the textbooks and other instructional materials, and both local and national tests are consistent with what is taught in the classroom.
4. Superintendent revises district supervisory practices and evaluation instruments used with teachers and principals to align them with district goals and the literature on effective teachers and principals.
5. Superintendent and board create a district-wide assessment program to collect information on what progress, if any, occurs in reaching district, school, and classroom goals. Information is used to make program changes.
6. Superintendent introduces a staff development program for teachers, principals, central office supervisors, and the school board. The program concentrates on effective schools and teaching, goal making, assessment procedures, evaluation of staff, and the steps necessary to implement each of these (Cuban, 1984, p. 133).

As with the principal, experience-based knowledge about superintendents as instructional leaders exceeds the present state of research-produced knowledge. The accounts by or about superintendents embracing an effective schools approach describe attitudes and activities typical of an earlier generation of superintendents, teacher-scholars who were deeply interested in the instructional process and active in schools and classrooms. A century ago, superintendents had to teach teachers what to do in classrooms: they inspected what was taught, listened to children recite, taught classes, and, in general, were unmistakably visible in the school program. That model of superintendent as instructional leader gave way to a managerial approach that has dominated the superintendency for the last three generations (Callahan, 1962).

At a time when budgets, program, and staff cuts and school closings are affecting most districts, when a crisis of confidence in schools is attracting media attention, and when administrators are privately and publicly bewailing the lack of money and the restrictions upon their power, policymakers and academicians are calling for inspired leadership. The following is a list of untested propositions put forth by Cuban (1984) that researchers and policymakers may find worthy of consideration in regards to influencing instructional improvement.

First, no superintendent can secretly improve a school district. The source of formal authority for a superintendent's initiative is the school board, which needs to approve the general direction and to work in tandem with the superintendent.

Second, the superintendent sets the agenda and develops the mission, using his or her managerial skills to decide when to open the gate to ideas and when to close it, when to veto and when to support, in short, how to develop policy.

Third, the superintendent establishes a climate, which nurtures instructional improvement in the district. Once the superintendent becomes identified with the mission of school improvement, even symbolic visibility in schools and classrooms carries weight. Encouragement and support for principals and teachers, such as protecting the instructional day and nourishing professional development, are also important.

Fourth, the school chief uses a number of managerial tools to implement the mission: targeting limited resources on activities that promise a payoff; placing like-minded, skilled staff in key positions that will advance the district's mission; and actively participating in monitoring and assessing the instructional program.

Such behavior on the part of the superintendent describes a high profile, active involvement in the instructional side of school operations. Will it produce improved student academic performance? Maybe. Experience-derived knowledge says yes, but no body of independent evidence yet exists to demonstrate that engaging in these tasks will yield dividends. What these assertions about superintendent behavior suggest is that some degree of direction and top-down implementation is necessary in launching an improvement program (Cuban, 1984).

This description of superintendent behavior is narrowly targeted on the academic performance of students. The goals of schooling, however, go well beyond test scores. If the mission of a district embraces many goals, some of which may require substantial changes in teaching practices such as developing student initiative, decision-making, and cooperativeness, other leadership tasks may also be involved (Cuban, 1984).

The Role of the Principal in Effective Schools

Principals of unusually effective schools are much more likely than the average principal to assume or seize an important role in selecting teachers who will serve on their faculty and in transferring out those perceived as detracting from or, in some cases, not contributing to the effectiveness of the school. In many cases, this function of leadership has required expenditures of large amounts of time and energy on the part of principals, as well as willingness to test the limits of contractual provisions with teacher organizations and to challenge central office procedures and practices regarding assignment and removal of teachers. Actions of principals with respect to selection and removal of teachers may be more salient and comprehensive at effective, low socio-economic schools than at outstanding middle income or mixed schools. Principals of effective schools tend to emphasize this aspect of leadership regardless of economic status (Levine and Lezotte, 1990).

Emphasis on selection and removal of teachers appears to be front-ended in the sense that the process is most evident during the years when a school is moving toward effectiveness (Stringfield and Teddlie, 1987). After principals have registered significant success in constituting or motivating a faculty capable of working together to improve their effectiveness, turnover is reduced and faculty composition is stabilized. Given that teachers and their students experience much more success, capable faculties are easier to recruit and retain. Thus, principals of effective schools have remarked that their faculties are relatively experienced and stable (Glenn, 1981).

Principals of effective schools frequently are administrative mavericks who are willing to challenge directives from the central office or other external forces perceived

as interfering with the effective operation of their schools. Examples of maverick behaviors include refusal to use instructional materials required by the central office: unwillingness to participate in highly bureaucratized, mandated procedures dealing with teacher evaluation: buffering the school and its faculty from influential external agents even though this may generate criticism of the principal and/or the faculty: practicing creative insubordination when external regulations are dysfunctional: and violating central office guidelines on class size or other matters in order to provide resources for staff development, improve coordination of instruction, or accomplish other school goals (Glenn, 1981). In general, buffering actions of effective principals tend to focus on protecting teachers from external forces that threaten to reduce their commitment and limit their effectiveness, particularly from the proliferation of paperwork chores which faculty experience as unnecessary and irrelevant. Effective principals demand much from their faculty: by the same token, they are unwilling to tolerate unproductive external requirements that interfere with their teachers' capacity to meet these demands (Rosenholtz, 1985)

The principal usually is a key factor in accounting for leadership behaviors associated with school effectiveness. One aspect of behavior involves frequent visits to classrooms combined with constant personal surveillance of activities taking place in the school (Lezotte, 1983) Moreover, educational leadership in effective schools has emerged as a correlate in virtually every study in which it has been included as a variable (Armor 1976: Brookover & Lezotte, 1979: Felsenthal, 1982).

Leadership at effective schools does not necessarily involve systematic clinical supervision wherein principals spend large amounts of time in extensive, formally

scheduled observations and pre-and post conferences with their teachers (Murphy. 1989). Principals of effective schools may or may not spend some time in clinical supervision. but they seem unwilling to devote inordinate amounts of time to this activity when doing so distracts them from more important issues. even when the central office directs them to emphasize clinical supervision (Sizemore. Brossard. and Harrigan. 1983).

Taylor (1984) pointed out that effective principals' propensity to appear frequently for short periods of time on an unscheduled basis in classrooms and elsewhere helps enable them to effectuate the "sense-making" function of leadership. That is. to figure out what is taking place in an uncertain and complex situation and determine what short-and long-range actions may contribute to attainment of the school's priority goals. Principals skilled in instructional leadership exemplify a knowledge-in-action that enables them to recognize and overcome complicated obstacles to effectiveness. even though they may not be able to articulate a clear. theoretical explanation of what they are doing.

Visiting classrooms frequently and engaging in regular strategic dialogue with teachers and other persons does not by itself ensure that a school will be effective: other correlates of effectiveness and sources also must be present. But the importance of principal behaviors of frequent personal monitoring and sense-making is apparent in Taylor's analysis of the function of strategic dialogue and its place in the school improvement efforts that take place in inner city and middle-class elementary schools in her study (Taylor. 1984).

Producing and maintaining large gains in achievement is a difficult and complex task that generally requires the expenditures of much time and energy on the part of

principals and other school leaders. Thus several case studies of effective schools have remarked on the tendency of their principals to work very long hours in hectic activities that deplete their physical and mental energy (Doll, 1969; Venezky and Winfield, 1979; Levine and Stark, 1982; Manasse, 1984). High expenditures of time and energy by principals and other leaders of effective schools exemplify an effectiveness correlate, which is not limited to education but has been described as a key leadership characteristic in many other types of organizations. Hard work by itself is insufficient, as indicated by the fact that many principals of less effective schools work equally long and difficult hours. Other actions and organizational characteristics must be present. Valid data on principals' comparative expenditures of time and effort are difficult to obtain except through expensive observations that assess leadership behaviors over relatively long periods of time. Undoubtedly, ebbs and flows exist in the time and energy expenditure patterns of effective principals, in accordance with variables such as length of their tenure in the school and extent of turnover in faculty. What is not clear, is whether high expenditure of time and energy is more important as a prerequisite for handling the difficult tasks inherent in improving schools or as a means to communicate and spread commitment in the organization, or is equally important in both purposes (Lezotte, 1990).

Principals of effective schools often spend large amounts of time supporting their teachers (e.g., Doll, 1969; Glenn, 1981; Levine and Stark, 1982; Rosenholtz, 1985; Sizemore, 1985; Murphy, 1989). Supportive behaviors of effective principals include both emotional encouragement and practical assistance in acquiring materials, handling

difficult teaching assignments, and otherwise working to function successfully as a member of a motivated faculty (Lezotte, 1990).

Principals of effective schools also have sometimes been described or have described themselves as going to great lengths to obtain additional resources for their schools (Venezky and Winfield, 1979; Glenn, 1981; Murphy, 1989). Strenuous efforts to obtain resources to attain or enhance effectiveness includes a range of activities such as writing grant proposals, soliciting funds or other resources in the community, stretching or bending rules along with skillful politics aimed at acquiring all possible district resources, and in-school fund raising. Effective principals' emphasis on acquisition of resources appears to be related to other effectiveness correlates such as risk-taking, problem solving marked by willingness to try alternate approaches when current ones are not working, and high expenditure of time and energy to ensure success in attaining school goals (Lezotte, 1990).

Like the larger body of research on effective schools, research on leadership behaviors which contribute to instructional effectiveness has been hampered by methodological issues involving difficulties in establishing causal relationships, uncertainties concerning generalizability across differing types and levels of schools, disagreement about appropriate statistical analysis, and questionable interpretations in moving from theoretical explanations to advice for practice (Zirkel and Geenwood, 1987; Murphy, 1989). Murphy (1989) analyzed and summarized much of the literature on instructional leadership. After reviewing the literature in eight related areas of research bearing on instructional effectiveness, Murphy concluded that instructionally effective leaders tended to be outstanding with respect to developing mission and goals; managing

the educational production function by promoting quality instruction: promoting an academic learning climate establishing positive expectations and standards: and developing a supportive work environment by creating a safe and orderly environment.

With the possible exception of a handful of individuals assigned to very small elementary schools, principals require assistance from one or more instructional support persons if they are to function as instructional leaders. Given the range of concerns, e.g., multiple effectiveness correlates, and diverse aspects of instructional leadership that require attention in working to enhance student performance, principals cannot readily orchestrate a successful improvement campaign without substantial on-site assistance (Lezotte, 1990; Armor, 1976).

As noted in The Minnesota Educational Effectiveness Program (1989), "The principal holds an important position within the school to influence and promote a value system, which esteems academic excellence. The leadership within the school has also been identified as pivotal to promoting desirable interactions among its members and promoting commonly valued expectations and goals" (p.20). These results were replicated in a work produced by the Wisconsin Center for Education Research. In 1991, researchers at the National Center on Effective Secondary Schools wrote:

> The principal, to a great extent, sets the tone for a sense of respect for the professional work of teachers. And, our study suggests that where teachers are treated with respect-and, in turn, treat students with respect-teacher quality of work life is high even when there is little other evidence of significant restructuring. Conversely, teachers who do not feel respected by administrators,

> other teachers and students are caught up in a work environment that cannot be fulfilling no matter how many other opportunities are available to them (p. 65).

In his description of instructional leadership, Edmonds (1989) noted that:

> ...the principals of effective schools behave in ways that are observably, demonstrably, and sometimes dramatically different from the way those principals behave in ineffective schools. The main difference is that principals of effective schools are the instructional leaders in their buildings, while those in ineffective schools are not (p. 3).

Lezotte (1989) stated that "In the effective school, the principal acts as an instructional leader and effectively and persistently communicates that mission to the staff, parents, and students. The principal understands and applies the characteristics of instructional effectiveness in the management of the instructional program" (p. 3).

In a work produced in conjunction with Lezotte, Levine (1990) stated that:

> Although a few analysts have described isolated examples wherein the central leadership of unusually effective schools have been provided by someone other than the principal, the large majority of studies and examples identify the principal as the most critical leadership determinant of effectiveness (p.16).

Barth (1990) discussed the importance of the principal. He noted that:

> One finding that consistently emerges from the wave of studies is the importance within the school of the principal. The words vary, but the message is the same:

- The principal is the key to a good school. The quality of the educational program depends on the school principal.

- The principal is the most important reason why teachers grow-or are stifled on the job.
- The principal is the most potent factor in determining school climate.
- Show me a good school, and I'll show you a good principal (p. 63-64).

Several other researchers have addressed the general importance of public school principals. As noted by Flanigan (1990), "the decade of the 1980's has produced a growing body of knowledge concerning effective schools and the key role the principal shares in such schools" (p. 2). When discussing the importance of principals, Goldman (1998) stated that "...the school's characteristics are a reflection of the educational values of its leader" (p. 20). Koll, Lampe, and Hegedus (1996) explained that "the school principal is seen by many as the key element in establishing a productive and satisfying work climate...." (p. 102). Raisch (1995) stated "successful school districts are composed of effective schools, and the presence of a strong principal is a prerequisite to individual school effectiveness" (p. 12).

School leadership is not a mystical attribute but a set of attitudes, activities, and behavior, which inspire others to effective group efforts (Gersten, Carnine, and Green, 1982). Active instructional leadership from the principal of a school may be a good thing, but an effective principal is less likely to prescribe specific methods than to offer continual assistance in response to problems which teachers identify for themselves (Stallings, 1981).

Leadership Behavior

Instructional leadership can and should be encouraged throughout the school community, but principals are in a key position to provide consistent and continuous

leadership to set a tone of order and purpose for the school as a whole, to build commitment for specific academic goals, and to guide the evaluation of progress toward those goals (Armor et al., 1976).

In a study of districtwide effective schools projects Purkey & Smith (1983) reported that the project had not had a significant impact on the district's secondary schools and linked the failure to the lack of several elements, including leadership. Purkey suggested that school system leadership must be present at both the district and building levels. At the district level, the tasks of leadership include coordinating policies related to the improvement project with general district policies and operating procedures, anticipating impediments to the change effort and providing concrete assistance and symbolic support and monitoring the development of an infrastructure to carry out project policies. At the building level, Purkey found that principals were preoccupied with the daily demands of managerial leadership and consequently were unable to provide the leadership necessary to realize the goals of the effective schools project. He concluded that the principal's responsibilities must be redefined to free him or her to provide leadership for the change process and that incentives must be provided by the central office to encourage principals to risk altering existing practices and structures.

Researchers on the role of leadership in business and industry suggested that strong leadership is a prerequisite for making participative management work. Kanter & Brinkerhoff (1983), for example, argued that corporate leaders must be "prime movers" who encourage individuals to find better ways of doing things, who get increasing numbers of people involved in making change happen, and who promote collaborative

teams that serve as vehicles for reform. Leaders in the exemplary firms Kanter studied were engaged in defining the problems faced by their companies, building coalitions of people from all levels of the organization to solve those problems, and mobilizing people and resources on behalf of the change effort. Note that, as vital as the leader is, the emphasis is not on top-down command but on using power to tap the creative and productive abilities of employees.

Using Kanter and Brinkerhoff's (1983) description of the leadership skills needed to promote workplace innovation in schools, educational leaders at the district and school levels must possess several skills that include a theoretical understanding of organizations and organizational change; the ability to manage the decentralized, cross-departmental team approach implied by the emphasis on staff participation; and the ability to persuade others in the school system to provide information and resources. Educational leaders must commit themselves to a collaborative, building-site improvement project.

Principals can step forward and assume the role of instructional leader if they believe that students can learn and that teachers can and should help students learn. The means to help students learn exist in research findings, and that, at the least, effective schools research provides a research-based, cost-effective strategy and blueprint for reform that has resulted in high student achievement elsewhere. The solutions to creating an effective school are within the reach of principals who seek solutions in research findings.

The principals of effective schools were viewed as critical factors to student achievement. Effective principals were found to be assertive and achievement-oriented men and women who viewed learning as the most important reason for being in school.

The principals of effective schools were versed in teaching and learning principles, were current in research regarding the same, and encouraged its use in problem solving. Moreover, they held teachers accountable for student learning (Berman & McLaughlin, 1979; Blumberg & Greenfield, 1980; Brookover & Lezotte, 1979).

Effective schools research offers principals general guidelines from which specific school improvement plans can be established. As a result, many principals have expanded their knowledge of effective schools considerably by reading or by attending workshops, conferences, or training sessions (Carter and Klotz, 1990).

Leadership in effective schools suggests two conclusions: First, individuals who have the vision that learning in a democracy must be inclusive lead effective schools and school districts. Second, these individuals have the ability to communicate this vision to others in the district and in the school so they share the vision and accept the mission.

A leader's vision cannot endure unless the leader is able to create a critical mass of support for it among those who must be committed to its implementation. If the leaders are fortunate to have teachers who also believe that schools in a democratic society must be committed to the learning-for-all mission, then the journey is made a bit easier and progress will likely be realized more quickly (Lezotte, 1994).

Brubaker and Coble (1997) noted that, "It is important that an assistant principal or principal accepts responsibility or takes the heat when things go wrong in school. This may mean that the school administrator will take blame for errors made by his or her superordinates on occasion" (p.13).

The Bidwell & Kasarda Study

Charles E. Bidwell and John D. Kasarda (1975) published a very influential study entitled *School District Organization and Student Achievement*. The authors used data from 104 school districts in Colorado to examine determinates of organizational effectiveness. The authors were interested in analyzing the effect of specific variables on reading and math achievement scores. Five environmental conditions of the districts, three components of district structure and one of staff composition were linked in a causal model to the median reading and mathematics achievement scores of the district's high school students. The authors included the environmental variables of size, fiscal resources, percent non-white in the population of the district's community, and the education and income levels of the parental risk population. District variables that were included were pupil-teacher ratio, administrative intensity, staff composition, and the ratio of supporting professional staff to teachers.

This study was an answer to some of the negative findings reported in the Coleman Report. The authors believed that there were good reasons to suspend judgment about the negative conclusions in the report. The authors noted that "Some of these are technical and center largely on errors of measurement (Jencks, 1972). Others are substantive and have to do with the failure of EEO to take school and school district structure into account" (p. 56). They claimed that some of the within-school variance in pupil achievement reported in EEO was not the result of extra-school influences, but rather of curricular differentiation

and variation in the allocation of resources to the multiple curricular tracks (Bidwell & Kasarda, 1975).

Bidwell & Kasarda (1975) also criticized Coleman and his associates for not investigating organization structures or practices in their schools deep enough. As a result, the EEO study could say relatively little about co-variation of organization variables and pupil achievement. The authors found that "They did not consider how between school differences in such organization attributes as the division of labor, formalization of teaching activities, supervision of teaching, or the morphology of control might have mediated or otherwise affected relationships between inputs to schools and pupil achievement" (p. 56).

An additional problem to the EEO study listed by Bidwell and Kasarda (1975) was that it used the school as the unit of analysis rather than the school district. The authors believed that the school was not the appropriate unit of analysis for discovering effects of schooling on pupils' achievement, especially if organizational attributes were used as an independent variable. The authors noted that

> "On the one hand, within-school variation in resource allocation, classroom-group composition and norms and similar characteristics of pupils' proximal school environments may have greater salience for the activities of both teachers and students than such attributes when measured at the school level.
>
> On the other hand, if we view organizational phenomena as a means for transforming environmental inputs into outputs, then one principal locus

of these phenomena may be the school district rather than the individual school. There is little variation between schools in the centralization of administrative control, more between school districts" (p. 56).

They also noted that there was a discrepancy in the EEO study due to the fact that the study measured expenditures at the school district level, despite the fact that the school was the unit of analysis (Bidwell & Kasarda, 1975).

Despite the previously mentioned shortcomings, according to Bidwell & Kasarda (1975), the main shortcoming of the EEO study was that it failed to explore ways in which the organization of education may intervene between inputs to schooling and its outcomes. The authors noted that "Specific models of this organizational mediation are required, whether the level of analysis is the school district or the individual school (or, indeed, still higher levels of aggregation, such as the national systems of education" (p. 57). Despite the fact that there had been an early study conducted in schools on the relation between organization size and administrative morphology the effect of this relationship on schools and school districts has not been considered (Bidwell & Kasarda, 1975).

While there are many ways to define effectiveness, Bidwell & Kasarda chose to regard effectiveness as goal attainment. They were interested in what influences that ability of a school to produce what it sets out to produce in an appropriate volume. While schools have many goals, academic achievement of students is clearly one of them. The authors were also interested in using this indicator due to the fact that it was the only output of schools and school districts that was widely and publicly measured (Bidwell & Kasarda, 1975).

Bidwell & Kasarda also limited their focus to the short-run effectiveness of schools districts. The short-run mission for school districts is to transform inputs such as students, resources, staff, technology, and community preferences into outputs such as student achievement. Their hypothesis was "...that the environmental conditions that confront a school district will affect levels of student achievement primarily through their effects on the structure and staff composition of these districts" (p. 57).

Bidwell & Kasarda's (1975) study involved using a sample of districts for which there was a wide range of size and fiscal resources. There was also an easily determined division of labor among instructional, administrative and supporting professional staff. The authors also gathered data describing the professional qualifications of key school district personnel, the socioeconomic characteristics of the school district population and the academic achievement of the district's students. The variables and their operationalization are as follows:

Environmental Conditions (Exogenous Variables)

(1) *School District Size* – Average daily student attendance (SIZE).

(2) *Fiscal Resources* – The sum of all local, state, and federal revenue received by the school district, divided by pupils on average daily attendance to standardize for size (RESOURCES).

(3) *Disadvantaged Students* – The percent of all school-age children residing in the school district who came from

families with incomes below the nationally defined poverty level (DISAD).

(4) *Education* (parent risk population) – The percent of males 20-29 years old and females 15-44 years old residing in the school district who had completed at least 4 years of high school educational (EDUC).

(5) *Percent Non-white* – the percent of the population residing in the school district whom were classified by Census definition as non-white (PNONW).

Organizational Attributes (Intervening Variables)

(1) *Pupil-Teacher Ratio* – The number of pupils in average daily attendance divided by the number of classroom teachers, converted to full-time equivalents (PTRATIO).

(2) *Administrative Intensity* – The ration of administrators to classroom teachers (ADMIN).

(3) *Professional Support Component* – The ratio of professional support staff to classroom teachers (PROF).

(4) *Certificated Staff Qualifications* – The percent of total Certificated staff who held at least the Master's degree (QUALIF).

Achievement (Dependent Variables)

(1) *Reading Achievement* – Median grade-standardized reading achievement level (nationally normed percentile) for high school students (RACH).

(2) *Mathematics Achievement* – Median grade-standardized mathematics achievement level (nationally normed percentile) for high school students (MACH) (Bidwell & Kasarda, 1975).

Using these variables Bidwell and Kasarda developed a model of school district organization and student achievement. In the model, the exogenous variables measure certain environmental conditions that impact a school district in the short-run. Intervening between these variables and the output of the district (student achievement) is a set of organizational attributes that involve key district functions: classroom teaching, professional support and administration. The authors also indicated whether there was a positive or negative correlation between the variables of the model (See Figure 2.2.) (Bidwell & Kasarda, 1975).

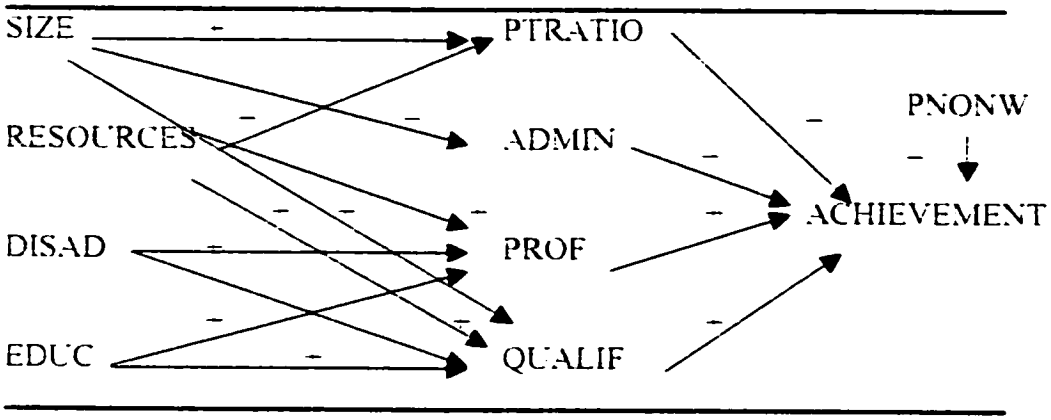

Figure 2.2 Bidwell & Kasarda Model of School Organization

Bidwell and Kasarda (1975) predicted that none of the environmental conditions would have a direct effect on achievement, except for the percent non-white. They believed that "...if there were any school district effects at all on aggregate student achievement, then attainment should be influenced by student-teacher ratio, teacher qualifications, administrative intensity and the relative size of the professional support staff—more heavily by the first three than by the fourth" (p. 62).

Bidwell & Kasarda (1975) found that their study provided "...substantial evidence of the significance of organizational structure and staffing for school districts" (p. 68). The variables of pupil-teacher ratio, administrative intensity, certificated staff qualifications, professional support component, and percent non-white accounted for almost 50 percent of the variation in achievement within their sample. Pupil teacher ratio and administrative intensity depressed median levels of achievement; whereas, staff qualifications fostered student achievement. Of the environmental conditions, percent-non white was the only variable that had a consistently significant direct effect on median achievement levels. It is important to note however that other environmental conditions have important indirect effects on achievement due to their direct effects on school district structure and staff qualifications. This is especially true for district resources. These finding were especially significant in light of the earlier research such as the Coleman Report that suggested student achievement was not affected by the attributes of educational organizations. The authors found that the structure and

staffing of school districts appeared to transform inputs to school districts into outputs of student achievement (Bidwell & Kasarda, 1975).

Based on their study, Bidwell & Kasarda (1975) made several recommendations that school districts could take to maximize aggregate levels of students' academic achievement. First, hire relatively large numbers of well-qualified teachers. Second, school district revenue should be reaffirmed as a major influence on attaining sufficient high quality teachers. Third, realize that while large school districts do a better job of instruction due to the amount and diversity of resources for instruction increases in size are limited. At some point the student achievement will suffer due to unfavorable pupil-teacher ratios.

Chapter 3

Methodology

Introductory Overview

The methodology for this study was modeled after the Bidwell and Kasarda study, with a few exceptions. This study examined the relationship between organizational health factors and district achievement whereas the Bidwell and Kasarda study did not. Also, the Bidwell and Kasarda study examined the relationship between parental education levels and district achievement, whereas this study did not.

The Unit of Analysis

The school district was selected as the unit of analysis.

State Report Card Data

Many of the variables analyzed in Bidwell and Kasarda (1975) are also reported on the Nebraska State Report Card. Using the data collected by the Nebraska Department of Education for the Nebraska State Report Card this study partially replicated the Bidwell study, but also added additional independent variables that were analyzed. This study focused on Class III school districts in Nebraska.

The Nebraska Department of Education published the first State of Nebraska Report Card in 2000. The purpose of the report card was to provide the public with an overview of the effectiveness of Nebraska's schools. In order to produce the report card the Department of Education required all class II through class V school districts to provide data on items such as pupil teacher ratio, teacher qualifications, student socioeconomic status, student attendance, school district size, graduation rate,

expenditures, and student performance. The report card was a summary of this data presented to the public as a means of demonstrating the progress of Nebraska schools.

The data obtained by the Nebraska Department of Education has not been readily available in the past. The present study not only broadened the basic understanding of organization structure and effectiveness, but it also shed light on the question of whether school districts can make changes that may reasonably affect student achievement.

Selection of School Districts

The school districts selected for this study were randomly selected from all Class III schools with a student population larger than 150, but smaller than 900. There were 227 Class III school districts in Nebraska during the 1999-2000 school year. Fifty school districts were randomly selected as the sample population. An alphabetical list of schools meeting the aforementioned criteria was developed using the Nebraska Education Directory. Each school was numbered and a random numbers table was then used to select districts for the sample population. The teacher selection process is described in the Survey Administration section.

Study Design

This study is a quantitative study which uses both pre-existing data and data collected through the use of a survey instrument.

Dependent Variables

The dependent variables for this study were reading and mathematics achievement. The degree of achievement in each of these areas was determined by the percentage of students in each district that fall into each quartile of the standardized achievement test administered in each district. This percentage was then converted to a

weighted score. The percentage of students in the first quartile (highest scores) were multiplied by four, the percentage of students in the second quartile were multiplied by three, the percentage of students in the third quartile were multiplied by two, and the percentage of students in the fourth quartile were multiplied by one. The four weighted scores were then added to create a district score.

Independent Variables

The independent variables for this study can be divided into two groups, environmental conditions and organizational attributes. While many of the factors listed in the report card may indeed be valid measures of school effectiveness, it is this researcher's belief that one very important variable is being ignored when considering school effectiveness. The many studies identified in the literature review section speak to this point. The relationship between instructional leadership and student achievement is not addressed in the Bidwell study. This variable has been added to this study in hopes of strengthening the Bidwell and Kasarda model and also to attempt to increase the explanatory power of the original study.

The variables and their operationalization are as follows:

Environmental Conditions (Exogenous Variables)

(6) *School District Size* – Total student population of the school district as reported in the 2000-2001 School District Membership Report.

(7) *Fiscal Resources* – The sum of all local, state, and federal revenue received by the school district as reported in the 2000-2001 Annual Financial Reports submitted by Nebraska Public School Districts and confirmed by their audit reports.

(8) *Disadvantaged Students* – The percent of all school-age children residing in the school district who are eligible for Free and Reduced-priced meals as reported in the 2000-2001 School District Membership Report.

(9) *Percent Non-white* – The percent of the student population residing in the school district who were not classified as white as reported in the 2000-2001 School District Membership Report.

Organizational Attributes (Intervening Variables)

(1) *Pupil-Teacher Ratio* – The number of students (as reported on the 2000-2001 School District Membership Report) per teacher (as reported on the 2000-2001 Fall Personnel Report) calculated by dividing the number of students by the number of teachers in each district.

(2) *Administrative Intensity* – : The full time equivalency (FTE) of personnel in the school district who must hold a valid administrative certificate as reported in a document specifically requested by the researchers from the Nebraska Department of Education Data Center.

(3) *Professional Support Component* – The full time equivalency (FTE) of personnel in the school district who are employed as counselors, nurses, and/or speech personnel certificate as reported in a document specifically requested by the researchers from the Nebraska Department of Education Data Center.

(4) *Certificated Staff Qualifications* – The percent of total certificated staff that held at least the Master's degree as reported on the 2000-2001 Fall Personnel Report.

Survey Instrument

The instrument used in this study (Appendix B) was developed by modifying a survey entitled, Organizational Health Survey (1970) developed by P.T. Kehoe and W.J. Reddin. The original instrument was intended to measure organizational health in the business setting. The survey consisted of 80 items grouped into eight categories with ten items each. The items on the original instrument were rewritten to measure teachers' perceptions in a school setting rather than those of employees in a business setting. Measures were obtained for each of the following categories: productivity, leadership, organization structure, communication, conflict management, human resource management, participation.

The instrument was piloted in two Nebraska school districts that met the same criteria used when randomly selecting the 50 districts used in the study. Ten teachers were recruited in each district to participate in the pilot study in order to accumulate feedback on the instrument. Each teacher was mailed a letter (Appendix C) requesting his or her participation in the pilot study. Feedback was also obtained from the researcher's supervisory committee.

The review in The Ninth Mental Measurements Yearbook found three major problems with the Organizational Health Survey. First is that the authors did not control for response styles. Dey (1985)) notes "All the keyed responses are "agree" and this leaves the survey open to socially desirable responses. In effect the scale could well be measuring acquiescence rather than providing an accurate report on organizational attitudes" (p.1101). To compensate for this concern the survey was modified to include a four-point Likert Scale. The next issues the author had with the survey was that once scale scores have been obtained there's no information provided for interpreting the results. Finally, the organizational climate literature suggests that factors such as technology and organizational size have moderate to strong positive correlation with organizational climate scores. There is no direction as to what size of organization and at what level of technology the survey should be used. The last two concerns of the author were not factors in this study as all schools selected were limited in size.

Survey Administration

The superintendent of each of the districts selected to participate in this study was identified using the 2000-2001 Nebraska Education Directory. All the superintendents

were mailed a letter (Appendix D) describing the study and informing them that their districts were selected to participate in the study.

Data were collected by mailing a cover letter outlining the study (Appendix E), the questionnaire, and a self-addressed stamped envelope to a randomly selected group of teachers from each district. Five teachers or ten percent of the total number of teachers, which ever was greater, were selected to be surveyed in each district. A follow-up questionnaire was sent to all subjects who did not return the questionnaire within ten days of the first mailing. Only those districts that had a return rate of at least three surveys were included in the study. In order to insure the confidentiality of the participants' responses, number identified the questionnaires only. The surveys were kept in a locked file and destroyed after June 2002.

The Relationship of Dependent and Independent Variables

It is predicted that none of the environmental conditions will have a direct affect on achievement, except for percent non-white. If there are any school district effects at all on aggregate student attainment, the prediction is that attainment should be influenced by student-teacher ratio, teacher qualifications, administrative intensity and the relative size of the professional support staff—more heavily by the first three than by the fourth.

This prediction is derived from the researcher's view of instruction: that it is teacher-intensive, that it involves at its center teacher response to feedback from students, and that it generates a low level of interdependence between the sub-units of school districts.

Research Questions

Major Research Questions

1. Did organizational characteristics contribute to district achievement levels and if so, how much of the variation in achievement was explained by these organizational characteristics?
2. Did environmental conditions of the district contribute to district achievement levels and if so, how much of the variation in achievement was explained by these environmental conditions?
3. Did district leadership contribute to district achievement levels and, if so, how much of the variation in achievement was explained by variation in a measure of leadership?
4. How much additional explanatory power was created by the addition of the independent variable of leadership?
5. Did measures of organizational health contribute to district achievement levels and, if so, how much of the variation in achievement was explained by variation in a measure of organizational health?

Sub-questions

1. Did environmental conditions of the school district (size, fiscal resources, number of minorities, cost per pupil, number of disadvantaged students) contribute to district achievement levels and, if so, how much of the variation in the achievement was explained by these environmental variables?

1.1 What percentage of the variation in the district achievement as measured by adjusted district math and reading scores was explained by school size? Correlation coefficients determined through multiple regression were used to answer the question.

1.2 What percentage of the variation in district achievement as measured by researcher converted district math and fiscal resources explained reading scores? Correlation coefficients determined through multiple regression were used to answer this question.

1.3 What percentage of the variation in district achievement as measured by researcher converted district math and reading scores is explained by the percentage of disadvantaged students in a district? Correlation coefficients determined through multiple regression were used to answer this question.

1.4 What percentage of the variation in district achievement as measured by researcher converted district math and reading scores was explained by the percent of non-white students in a district? Correlation coefficients determined through multiple regression were used to answer this question.

2 Did organizational characteristics (pupil-teacher ratio, administrative intensity, numbers of professional support staff, and certificated staff qualifications) contribute to district achievement levels and if so, how much of the variation in achievement was explained by these organizational characteristics?

2.1 What percentage of the variation in district achievement as measured by adjusted district math and reading scores was explained by pupil-teacher ratio? Correlation coefficients determined through multiple regression were used to answer this question.

2.2 What percentage of the variation in district achievement as measured by adjusted district math and reading scores is explained by administrative intensity? Correlation coefficients determined through multiple regression were used to answer this question

2.3 What percentage of the variation in district achievement as measured by adjusted district math and reading scores is explained by the professional support staff component? Correlation coefficients determined through multiple regression were used to answer this question.

2.4 What percentage of the variation in district achievement as measured by adjusted district math and reading scores is explained by certificated staff qualifications? Correlation coefficients determined through multiple regression were used to answer this question.

3. Did instructional leadership within a district, as measured by the Organizational Health Survey subscale result in higher district achievement levels and if so, how much of the variation in achievement was explained by variation in a measure of instructional leadership?

The researcher computed and reported the results of regression analysis. As defined by Borg and Gall (1989) "Multiple regression is a multivariate technique for determining the correlation between a criterion variable and a combination of two or more predictor variables" (p. 601). The criterion variables were math and reading weighted percentile scores. The predictor variables were those variables listed as independent variables.