1996

A study of the perceived quality factors and methods of awarding salary increases for superintendents in selected school districts

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Iowa State University

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A study of the perceived quality factors and methods of awarding salary increases
for superintendents in selected school districts

by

Thomas John Behounek

A Dissertation Submitted to the
Graduate Faculty in Partial Fulfillment of the
Requirements for the Degree of
DOCTOR OF PHILOSOPHY

Department: Professional Studies in Education
Major: Education (Educational Administration)

Approved:
Signature was redacted for privacy.

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Signature was redacted for privacy.

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For the Graduate College
Iowa State University
Ames, Iowa
1996
DEDICATION

I would like to dedicate this dissertation to my wife, Carol, and our children, Jenna, Matt, Jennifer and John. They have sacrificed family time and resources so that I could achieve this degree. I would also like to dedicate this to Leo and Mildred Behounek, my father and mother, who have always been supportive of my educational achievements.
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A study of the perceived quality factors and methods of awarding salary increases for superintendents in selected school districts

by

Thomas John Behounek

William K. Poston, Major Professor
Iowa State University

Forty-four Iowa school board presidents and superintendents from the same school districts were surveyed to investigate and analyze perceptions of the manner in which superintendents are currently being awarded salary increases and the preferred or ideal manner in which salary increases should be awarded. Secondly, a sample of board members, administrators, teachers, students, and support staff from these same forty-four school districts were asked to respond to a Perceived Quality instrument concerning a quality rating of the school districts. The results of these surveys were compiled to determine whether a correlation existed between the current and ideal manner of awarding salary increases to superintendents and the perceived quality rating of the school. This study was conducted to test the theory of W. Edwards Deming that merit or performance will destroy the organization.

The results of the study indicate the following conclusions in the current practice of awarding salary increases:

(1) Board presidents and superintendents agreed that increases or decreases in student population have little effect in determining salary increases.

(2) Board presidents and superintendents felt that teacher negotiated contract settlements have a large impact on the superintendent's salary increase.

(3) Board presidents and superintendents agreed that standardized testing should not be used in determining salary increases.
(4) Board presidents and, to a lesser degree, superintendents felt that the superintendent's performance on the job description has an impact on salary increases.

In the ideal or preferred manner of awarding superintendent salary increases, the following was found:

(1) Increase or decrease of student population should have little effect on salary increases.

(2) Board presidents felt that the superintendent's salary increase should be related to the teacher negotiated contract settlement, while superintendents felt that the superintendent's salary increase should be separate from the teacher negotiated settlement.

(3) Board presidents felt that the performance on the job description should be heavily considered for salary increases. Superintendents placed a significantly lower level of importance than do board presidents for compensation increases based upon job performance. Both board presidents and superintendents agreed that standardized test scores should not be a factor.

(4) A slight negative correlation was found when comparing the perceived quality rating of a school district with performance-based pay for the superintendent. This finding may bind some credibility to Deming's theory that performance or merit pay may have a negative influence on the organization.
CHAPTER I. INTRODUCTION

The concept of paying school district personnel on the basis of their performance is not new to boards of education. For over sixty years, performance-based compensation plans have been alternately praised and condemned by school districts throughout the United States. In fact, some state legislatures have even funded pilot programs involving performance-based compensation for school personnel. Some school districts have also been involved in performance-based compensation programs in the past, with the advent of collective bargaining. Some districts have discontinued these programs. Still other districts currently use some form of merit incentive, while numerous districts are interested in studying this issue. The concept has been vigorously debated and written about under such descriptors as "merit pay," "career increments," "quality of performance pay," "career ladder," and "differential salaries," to name just a few. However, current data on the extent to which performance-based compensation and incentives have actually been negotiated in contracts with educational administrators have not been available (Educational Research Service, 1978; Kienapfel, 1984; Graves, 1995).

In 1983, the "Nation at Risk" report precipitated one of the most active periods of educational reform. The report charged that the "educational foundations of society are presently being eroded by a rising tide of mediocrity." A groundswell of public and political energy and enthusiasm for improving education which has never been seen before had begun (Boyer, 1983; Business Higher Education Reform, 1983; Goodlad, 1984; National Commission on Excellence in Education for Economic Growth, 1983; Ravitch, 1984; Sizer, 1984).
In 1984, a report entitled *First in the Nation in Education* addressed major issues and concerns about education, including accountability and leadership. It was in this report that superintendent performance was addressed as an important part of school improvement and reform. The report noted that strong and effective administrative leadership, beginning with the superintendent, is a critical factor in initiating change for school improvement (Iowa Legislative Council, 1984, p. 35).

Evidence of legislative concern regarding superintendent performance can be found in actions by the Iowa Legislature (1985 Session of the 71st General Assembly) to strengthen certification. Study committees and the State Legislature have reinforced the important role that superintendents play related to school effectiveness.

The public concern for educational excellence and demand for accountability have spotlighted the importance of quality leadership in our nation's schools. Research has shown that quality administrative leadership is the key factor in a school's educational effectiveness (Educational Research Service, 1993). Hence, effective procedures to evaluate and compensate administrative performance are of major concern to school officials, educational leaders, and concerned citizens (Educational Research Service).

For half a century, performance-based compensation for teachers has been intensely debated in school systems of various sizes and in virtually every state in the nation (Educational Research Service, 1993). Performance-based compensation for school administrators, while not attracting the degree of controversy that has surrounded the issue of performance-based compensation for teachers, has been used in some schools as a step toward promoting increased accountability of school management. These programs have implemented performance-based compensation using a vast
number of different approaches and techniques, from management-by-objectives, to point and weighting systems for salary determination (Educational Research Service, 1993).

Should performance-based compensation then be used as an incentive or reward for administrators to provide increased accountability for school management? W. Edwards Deming would emphatically disagree with this concept.

W. Edwards Deming gave direction to business and other institutions. His focus on continuous improvement and quality transformed Japanese industry. Deming outlined his philosophy by listing fourteen points for managing quality and productivity. These points were designed primarily for the manufacturing sector but may apply to the education sector as well (Bosner, 1992). Deming not only outlines his fourteen points for success but also goes on to list "seven deadly diseases" which he says are elements in American institutions which lead to failure. One of these diseases is the "evaluation by performance, merit rating or annual review of performance." Deming states that "the effects of these are devastating-teamwork is destroyed; rivalry is nurtured. Performance ratings build fear, and leave people bitter, despondent, and beaten. They also encourage mobility of management" (Bosner, 1992).

It is important to determine whether merit or performance-based compensation has any effect on the quality of the organization. Therefore, this study is concerned with superintendents' and school board presidents' perceptions of (1) how salary increases are awarded to superintendents, (2) preference for awarding salary increases, and (3) whether the manner of awarding salaries is related to the quality of the organization as so perceived by those involved in the organization.
Statement of the Problem

Increasing the amount of pay for school personnel is often an annual event. Typically, teacher organizations in Iowa enter into collective bargaining with school districts to determine teachers' pay increases for the next school year. But what about school administrators? How do school districts determine the amount of salary increases for school administrators, especially for superintendents? To a great extent, the quality of America's school depends on the effectiveness of school superintendents. These executives of our nation's schools have complex leadership responsibilities and those who hold the position must be among the brightest and best our society has to offer. Their vision and performance must focus on creating schools that will inspire our children to become successful, caring Americans, capable of becoming contributing citizens of the world.

The superintendency requires bold, creative, energetic, and visionary school leaders who can respond quickly to a myriad of issues ranging from dealing with social changes, diverse student populations, and demands for equity, to improving school quality for every child and making effective use of new technologies (Hoyle, 1993). With this in mind, pay decisions make a difference, but little is known about what kind or the value of the difference.

The School Administrators of Iowa, a professional organization for administrators of Iowa schools, expressed two related issues of increasing concern (1) board/administrator relationships and (2) the growing frustration on the part of management when it comes to dealing with salary and fringe benefit settlements (Tryon, 1992). Since 1985, teachers' pay increases have grown at a much larger percentage rate than have administrators' pay increases. The association encourages boards of education to
compensate administrators with a percentage salary increase no less than what is given to teachers (Tryon, 1992).

The problem to be addressed is whether superintendents and board presidents currently agree upon the factors that determine pay increases for superintendents. This then will be compared to the quality index of the school as so measured by the "School System Perceived Quality Assessment Instrument", developed at Iowa State University, (Poston & Bax, 1994), to see if the method of awarding salary increases is dependent upon the perceived quality of the school.

Purpose

The primary purposes of this study were:

1. To determine the manner in which superintendents and board presidents perceive that the superintendents of selected Iowa school districts are awarded salary increases.
2. To determine the methods of reward for superintendents that are preferred by Iowa school superintendents and board presidents.
3. To determine the perceived quality index of selected school districts in the state of Iowa.
4. To determine the relationship between the perceived quality index of Iowa school districts and the level and methods of compensation of Iowa superintendents.

Research Questions

1. What factors are used by boards in determining pay increases for the superintendent in the district?
2. To what degree is performance desired by boards in determining pay increases for the superintendent?

3. To what degree are pay increases for superintendents actually based upon performance?

4. How do levels of salary increases awarded to superintendents relate to the perceived quality of the district?

5. How do methods of compensation differ in terms of corresponding levels of quality in the system?

6. What differences are there between superintendents and school boards in preferences, beliefs, and actions relating to superintendent compensation?

Hypotheses

This study was an investigation into the perceptions of superintendents and board presidents as to the methods currently used in awarding superintendents salary increases, preference of these two groups for awarding superintendent salary increases, and the relationship of awarding salary increases with the perceived quality of the school district. The hypotheses to be tested were:

1. There is no significant difference between board presidents and superintendents concerning their beliefs in how superintendents are currently being compensated and how they should be compensated.

2. There is no significant difference in the beliefs of board presidents and superintendents in their choices concerning whether pay increases for superintendents should be based upon performance or non-performance criteria.
3. There are no significant differences between the perception of superintendents and board presidents concerning the current practice of awarding pay increases and the preferred manner in which pay increases should be awarded.

4. No significant differences exist among superintendents of low, moderate, and high strength of belief in non-performance-based pay when compared by the ranking of their school district in the "ideal situation."

5. There is no relationship between the superintendent's strength of belief in performance pay and the ranking of their school district in the Quality Review study.

Significance of the Study

This study investigates the perceptions of Iowa superintendents and board presidents about the factors that determine salary increases of Iowa superintendents including their attitudes toward use of performance for salary increases. Although much has been written, only a few studies have cast much light on the subject (Graves, 1995). A primary reason for the study was the glaring lack of information concerning the issue (Rist, 1985).

Superintendents of public schools are considered to be the chief instructional leaders of the school district (Hoyle, 1993). It would seem plausible that school boards would wish to consider this role in determining how to reward superintendents. Improvement of educational programs and student achievement may be factors affecting superintendent compensation.
Assumptions

This study was based upon the assumption that subjects respond honestly to the surveys and that the perceptions of all respondents represent actual behaviors or actions measured. The study presumed that the respondents were truthful, honest, and correctly understood the directions and contents of the instrument.

1. The School System Perceived Quality Assessment Instrument was valid and reliable for measuring the quality index of schools.

2. The questionnaire used to determine the method of awarding superintendent salary increases was determined to be valid and reliable following a review by a panel of experts.

3. Participants completing the surveys were knowledgeable.

4. Respondents provided complete and accurate information.

Delimitations of the Study

This section of the study deals with those areas that may affect the research outcomes. Specific areas of limitation are noted with the possible affects each may have had on the conclusions of this study.

(1) The sample was drawn entirely from Iowa. Therefore, the results of this study may not apply to other states or countries.

(2) The list of determining factors for pay increases were developed from existing research and related literature. Given the minimal amount of research in this area, these factors are not necessarily a complete listing.

(3) This study assessed the perceptions of Iowa superintendents and board presidents. Therefore, the results of this study may not accurately reflect perceptions of any other groups.
Definition of Terms

**Allowable Growth** -- increased money for district spending

**Controlled Budget** -- Uniform Levy ($5.40/thousand) plus State Foundation Aid plus additional levy plus property tax adjustment

**New Money** -- the increase in the school district's controlled budget from one year to the next

**Performance-based Compensation** - increased salaries awarded for achieving predetermined measurable student or organizational outcomes or results

Research Design and Variables of the Study

This study included the use of two surveys. The first survey, "Current and Preferred Methods of Awarding Superintendent Salary Increases," asked superintendents and board presidents to answer questions as to how superintendents were currently awarded salary increases and preferences for awarding salary increases. In the design of the questionnaire, the first seven items elicit information about factors which may or may not have any relationship to superintendent performance. These include (1) length of service to the district, (2) increased formal education or inservice training, (3) cost of living increase, (4) new money awarded to the district or allowable growth, (5) teachers negotiated settlement, (6) salaries of superintendents in schools of similar size, and (7) increase or decrease in student population.

Three items obtain information about performance including performance on superintendent's job description, achievement of district or long range goals, and school board evaluations of the superintendent. Two items seek to find if student performance or outcomes are considered in determining salary increases. Finally, the questionnaire
requested participants to rank in order the three most important factors used in determining salary increases.

The second questionnaire, School System Perceived Quality Assessment Instrument, elicited information about seven characteristics of each school district. Based upon the Malcolm Baldridge Award, these characteristics include: leadership, information and analysis, strategic quality planning, human resource utilization, quality assurance of products and services, quality of results, and customer satisfaction.

The prestigious Malcolm Baldridge Award was established in 1987 to encourage quality improvement efforts among business and industry, and is now being considered for education. The Baldridge Award incorporates the use of self-assessment in determining a quality index or rating in each of the seven categories previously listed. According to Fargher (1991), "Self-assessment is a process of reviewing an organization's current practices, competitive strategies, policies, procedures, leadership, human resource practices, and employee and management attitudes toward customer focus, quality, and productivity" (p. 375). The Baldridge Award provides the best framework for a total quality management system and its criteria can be used to assess an organization's quality program (Brown, 1992; Jaehn, 1990; Knotts Jr., Parrish Jr., and Evans, 1993).

Therefore, with the use of the School System Perceived Quality Assessment Instrument, a measurement of the perceived quality of the school district can be made. The procedure for the study was then be to see if there was a significant difference in the methods for awarding of salaries based upon performance or merit and levels of the perceived quality of the school system.
CHAPTER II. REVIEW OF LITERATURE

Superintendents are charged with the responsibility of being the chief instructional leader of a school district. It might then follow that pay increases for the superintendent would closely be tied to organizational performance or outcomes. However simple this may seem, there is not much evidence nationwide that pay is based on performance factors. The review of literature indicates that a common denominator for awarding pay increases seems to be lacking.

This report deals with a traditional concern in organizations—how to devise a compensation plan for administrative personnel that is both supportive of organizational expectations and connected to individual satisfaction. This is a timely subject for analysis because:

- Many school systems have no systematic compensation plan for administrators.
- Some school systems have compensation plans that are inequitable.
- Some school systems have compensation plans that are nonrational.
- Some school systems have adopted schemes proposed by national and regional associations for compensating a particular segment of the total administrative staff, such as elementary-or secondary-school principals.
- The increasing size of and changes in administrative units are creating pressures for system-wide compensation planning for all personnel.
- Continued adherence to the assumption that administration and teaching are similar functions will inhibit development of new departures in compensation plans for administrators.
- Collective negotiations units for professional school personnel frequently exclude administrators.
- Absence of objective arrangements for resolving compensation conflicts leads to organizational tensions, leadership failure, and personnel dissatisfaction.
- Many school boards misunderstand the human impact of pay differentials.
- Dissension continues as to the reference base for scheduling administrative salaries.
- Differentiated pay plans for differentiated staffing, it is alleged, constitute a threat to the equity of salaries for administrative personnel.
- Competitive salary pressures from lower echelons have resulted in less favorable treatment of personnel at the highest administrative levels.
- Boards of education are becoming increasingly reluctant to establish for administrators the highly ingrained and traditional single salary schedule which is generally employed to compensate teachers (Castetter & Heisler, 1974).

According to Pitner and Ogawa in their study of the superintendent in organizational leadership, "in spite of the general tendency for superintendents to attend to structural matters, they find satisfaction in the success of individual students and teachers. Thus, in spite of little real influence on the basic activity of schools - the instruction of students - superintendents attribute responsibility to themselves for instructional outcome" (Pitner & Ogawa, 1981).

A similar viewpoint was expressed by one superintendent in a justification for performance contracts (Allen, 1987). The superintendent stated that "many reports, as well as group spokespersons, are viewing management in terms of leadership teams concerned with the performance of people and the results of the organization." Terms
like "school-based" and "site-based" empowerment and teachers' leadership are relatively new concepts in educational literature. Regardless of this new organizational thrust it is believed that the impetus of school reform still lies with the superintendent and school board (Allen, 1987).

Others support similar viewpoints. What the management team does, particularly the superintendent, determines how successful a school district is going to be. A school board can establish goals and policies, monitor performance, develop staff talent, and balance the budget. But unless the board sees to it that the superintendent and the management team implement the principal elements of educational management (people, process, and performance), the district has a slim chance of receiving the learning results it seeks (Genck & Klingenberg, 1978).

History of Performance-based Compensation

Interest in performance-based compensation programs seems to be at its height whenever education comes under criticism. Generally though, the literature reflects that performance-based compensation has generally been thought of in relation to teachers rather than administrators. In reviewing the history of performance-based compensation, we find that attempts for monetarily rewarding teachers on a performance basis was conceived as early as 1908 in Newton, Massachusetts (Educational Research Service, 1978). From then until the 1920's, the use of performance-based compensation for teachers grew steadily. Evidence was then found of performance-based compensation for teachers entered into the literature during the 1950's and again in the 1960's, when there was pressure for school improvement (Weissman, 1974). However, the literature was still lacking in referencing performance-based compensation for administrators.
The highly publicized *A Nation at Risk: The Imperative for Educational Reform*, which reflected the conclusion of the National Commission on Excellence in Education, prompted renewed interest in performance-based compensation for educators. However, the idea of rewarding people on the basis of how much or how well they produce has been around for a long time (Kienapfel, NASSP, 1984).

Educators, however, have had difficulty in adapting this "reward on the basis of production" idea to education, even though there has been some desire to do just that. Attempts to measure educational productivity quickly ran into obstacles and criticism.

That difficulty in measuring production and the resultant criticism and mistrust of salary systems based on such measuring have kept most school districts from putting any such "reward for production" or "reward for performance" or "merit pay" systems into effect. Most school districts settle for a salary system in which rewards are typically based on length of service and amount of formal education. The implication, of course, is that teachers and administrators get better as their years of experience increases, and/or as they acquire more college credit (Kniepfel, 1984).

**Reasons for Past Failures of Performance-based Compensation Systems**

In recent years there has been frequent debate regarding the desirability of performance-based compensation for school administrators. For numerous reasons there have been very few districts actually trying performance-based compensation and basically these programs were intended for school administrators other than superintendents.

However, in 1977, the Board of Education of the Rialto Unified School District and the superintendent began to refine a "Management Evaluation and Development Program" (Ruttan, 1978). The purposes of this program were: (1) to judge performance
levels of managers; (2) to improve performance and/or maintain it at the highest possible level; (3) to encourage retention of effective managers; (4) to identify needs of managers and to provide assistance for those needs; and (5) to identify outstanding performance which would result in merit pay (Ruttan, 1978).

This program was designed to support the goal of providing students with the opportunity to acquire a quality education through improved evolution. It was also designed to be a positive continuing process that involves management in examining and discussing how each individual is performing (Ruttan, 1978).

In looking at other performance-based compensation programs, it was felt that the reasons they had failed were that the plans had been concerned with performance-based compensation alone and had ignored the importance of the evaluation process and the necessity of an inservice training program. This in turn caused managers to resist performance-based compensation, since they were apprehensive that without an evaluation criteria, placement on the performance-based compensation salary schedule would be arbitrary and that, without an inservice program, there would be no opportunity for them to improve their specific skills (Ruttan, 1978).

Administrator Opinions Concerning Performance-based Compensation

As controversial as performance-based compensation is and has been, there are of course arguments on each side of the issue. It should be no surprise that school boards and superintendents are looking for alternatives in awarding salary increases. As Meitler explains, "the real problem isn't that administrative salaries are too high, it is the problem of the indiscriminate awarding of increases to administrators" (Meitler, 1974). Many board members and superintendents are frustrated or alarmed as they annually encounter the same problems, as shown below.
1. Inequities have crept into the structure of salaries and are perpetuated;
2. The lack of method for recognizing superior performance;
3. The lack of a method for holding back the salary of individuals whose performance or already high salary doesn't merit a salary increase (Meitler, 1975).

In listening to educators and school board members discuss performance-based compensation, we find both skeptics and supporters. Many board members support the idea of paying administrators on the basis of performance, but don't know how to do it. On the other hand, most administrators quietly resist the concept of performance-based compensation with the fond hope that the idea will go away (Meitler, 1975).

Many opinions expressed about performance-based compensation appear to be based on hearsay and personal feelings rather than fact or experience. It's important to keep in mind that very few performance-based compensation programs exist in school districts and little has been written about them. Consequently, when most administrators react with skepticism to the concept, their reaction is based on what they have been told by the teacher associations (Meitler, 1975).

Advantages of Performance-based Compensation

The following reasons are usually given in support of performance-based compensation for administrators:

School districts should reward superior performance. Performance-based compensation provides an opportunity to give additional financial recognition to individuals whose performance is considered to be superior. Of course, the converse is also true and small increases can be given to individuals who are not performing satisfactorily.
School boards should hold administrators accountable. There has been much talk about accountability and many programs and procedures attempt to deal with the issue of holding administrators accountable. However, accountability means little until it takes some tangible form. Giving smaller or larger salary increases is one of the most tangible ways of actually communicating the concept of accountability.

School boards should treat administrators as managers. School boards expect administrators to act as managers, but they usually treat them as teachers with respect to compensation and other personnel policies. If boards want administrators to function as managers, they should treat them as such and also compensate them on the same basis as managers are paid in other organizations.

School districts should provide incentives to improve. If an opportunity exists to earn additional money, it is assumed that most administrators will respond by improving their performance. Of course, other responses may also occur. Administrators who receive small increases or no salary increase year after year may choose to leave the school district (Meitler, 1975).

Disadvantages of Performance-based Compensation

Several arguments have been presented against performance-based compensation. Some examples are as follows:

Some administrators will resist evaluation. While this is not true of all administrators, some fear the results of evaluation and will fight a merit compensation program.

Unhealthy competition will be created with the administrative team. This is one of the frequently advanced potential problems of a performance-based compensation program. However, based on experience in industrial programs, this is seldom a real
problem. One way of handling this potential problem is to make teamwork and cooperation one of the criteria used for granting performance-based compensation.

A performance evaluation program must be developed. Performance evaluation in the field of education may never be very objective. Nevertheless, considerable time must be devoted to development of an acceptable means of evaluation performance if performance-based compensation is to be granted.

More time and effort is required to administer a merit program. Using the teacher's salary schedule was very easy and required little time of administrators. There is no question that more time is required to establish criteria and evaluate performance under a performance-based compensation program (Meitler, 1975).

Performance-based Compensation for Administrators:

Rationale and Overview

In business, industry, and commerce, performance and production of workers are to some degree the basis for determining salaries and promotions. Although many factors mitigate the degree to which this generalization is reality, the fact remains that it is in a company's best interest to reward the most productive employees with more compensation or more responsibility (Kienapfel, 1984). In contrast, the concept of reward on the basis of production has been difficult to adapt to education. Although some school districts have made serious efforts to implement a performance-based compensation plan for teachers or administrators, few have been successful. Efforts to measure educational productivity have typically run into numerous obstacles and criticisms. "Schools aren't businesses," critics charge, "they don't produce tangible products like cement, scissors, or computers." How can educators – administrators and
teachers alike -- be held accountable for something as intangible as "student learning" (Kienapfel, 1984).

The many difficulties involved in measuring job performance in education, combined with the criticisms and distrust of salary systems based on such measurements, have dissuaded most school districts from instituting performance-based compensation systems for either teachers or administrators. In an Educational Research Service (ERS) study, 11,502 school districts enrolling 300 or more pupils were surveyed to determine how many had merit or incentive pay plans for administrators and teachers. Among the 2,848 responses, 435 (15.3%) had a merit or incentive pay plan for administrators and 11 (4.0%) had such a plan for teachers (Educational Research Service, 1978). In general, most districts content themselves with a salary scale based on the employee's length of service and level of education. Implicit in these systems is the assumption that teachers and school administrators improve in their jobs as their years of experience increase or as they acquire more college credits.

Performance-based compensation offers an alternative to encourage administrators to give their best to their jobs. In the current climate of criticism of education, only the best performance may be sufficient.

Importance of Performance-based Compensation for School Administrators

The relationship between quality of performance and length of service or amount of education is weak at best. However, some school districts continue to use an experience/education salary schedule, and some do not use any kind of performance-based compensation salary schedule. One reason is that experience and education are relatively easy to measure. Consequently, salary schedules based on them are easy to
administer. Performance-based compensation systems, on the other hand, are difficult to measure and administer (Kienapfel, 1984).

Yet, despite the many problems, performance-based compensation for school administrators should be examined. It offers a coherent method for bringing administrative salaries into line with salaries in the private sector. School administrators are typically at the end of the line when salaries are being raised and they tend to receive "what is left." This problem is often compounded by the relationship between administrators and school board members. Board members, who usually know the administrators in their district on a more personal basis than they know other staff members, sometimes allow personalities to influence decisions of general salary increases. A 10 percent across-the-board increase for administrators may run into difficulty because each board member may know some administrators who, in the member's opinion, do not deserve a 10 percent raise. Therefore, a whole administrative staff may suffer because of board members' opinions, accurate or inaccurate, concerning the performance of a few (Kienapfel, 1984).

Boards of education might be more willing to grant a given average salary increase for administrators if they could be sure that superior administrators actually would receive greater percent increase and below-average performing administrators would receive a lesser increase. An opportunity for school administrators to be paid according to performance is one way for the best school administrators to keep pace with other school staff increases. This concept is predicated on the assumption that it is possible to differentiate accurately between superior and below-average administrators (Kienapfel, 1984).
Reasons for Evaluating Superintendents

Evaluating a superintendent's performance is "one of the most important and difficult challenges facing school boards today" (Redfern, 1984). Redfern summarizes the important reasons:

Evaluation plays many roles. It is motivational. It is an aid in planning. It is developmental. It aids in communication. And ultimately, effective evaluation helps to assure a good education for students in our nation's schools (Redfern, 1984).

Improving educational performance is the basic reason for a school board to systematically evaluate the superintendent. Because of the superintendent's unique position as chief executive officer, he or she affects the school district's overall performance (Genck, 1983). How well superintendents perform their duties has a direct impact on teacher performance, which in turn affects student achievement. Systematic evaluations can help superintendents maintain an awareness of the interconnections and prevent them from becoming detached from the education for which they are responsible (Genck, 1983).

When a school board evaluates its superintendent, it also creates opportunities to improve its own effectiveness. Evaluating the superintendent compels the board to understand the superintendent's management role and responsibilities, thus more clearly defining its own policymaking role. The process of setting goals and standards for the superintendent also assists the board in setting district goals and objective views, and in planning to better meet the educational needs of the district's students (Haughland, 1987).

School district goals and priorities often change from year to year. Nemir points out that when district priorities change, a shift of emphasis in the superintendent's professional and management responsibilities occurs. Performance evaluation is an ideal
setting for the board and the superintendents to identify and ratify these changes in the latter's responsibilities (Nemir, 1988).

Another reason for the school board to systematically evaluate the superintendent includes: providing accountability; informing the superintendent of the board's expectations; and demonstration to district staff that administrators are being held accountable for the performance of the staff they supervise (McDaniel, 1986).

Performance-based Compensation and Evaluation/Performance

Moving beyond the discussion of superintendents/job activities, one finds that the question of superintendent's performance, i.e., behaviors evaluated "effective" or "ineffective" in terms of district goals, remains significant even in districts where consensus has been reached regarding expectations and perception of the job.

According to Salley, there is "widespread dissatisfaction with superintendents' evaluation and performance appraisal programs by both superintendents and boards. Neither group employs objective and systematic procedures and processes to evaluate the effectiveness of superintendents' performance. This regrettable condition - given the obligation of both superintendents and board to provide for the best educational experiences and programs for students through effective administration - is due to the combination of the inability and unwillingness of school boards and superintendents to anchor their evaluation and performance appraisal systems in objective knowledge and sound procedures" (Salley, 1980).

Relating Salaries to Learner Outcomes

There is much public support for correlating salaries and salary increases to the performance or outcomes of students. Again the dilemma involved in this is what to use as measureable criteria.
Historically, parents established schools to assume learner outcomes for their children because they either felt they were too busy or they lacked the skill themselves. Thus, the sole legitimate reason for schools is to produce learning outcomes (Benedict & Gerardi, 1985).

However, the public school system in the United States has traditionally been process based. Schools have usually been rated on the inputs which have been placed in school systems rather than organizational outcomes. Schools have been judged good or inadequate depending on such attributes as classroom models being used, fiscal responsibility, student discipline, etc.

The current public and political discontent with the educational system, however, is changing the ground rules. Public attention has become more and more focused on quality of schooling, and demands for instructional improvement can be heard everywhere. The U.S. Commission on Excellence in Education Report is a recent case in point. This accountability trend points toward supervision and evaluation based on learner outcomes, rather than unrelated and conflicting subjective material of the past (Benedict & Gerardi, 1985).

If the premise is accepted that good and not so good schools are judged on the basis of learner outcomes, then the next problem encountered is how to define learner outcomes. Are learner outcomes those measured by teachers over the material which is presented to students (criterion referenced), or are learner outcomes those that measure student achievement in comparison to other students in the state or nation (norm referenced)?

Arguments for criterion referenced testing indicate better validity because of students being tested over the actual material presented to students. Those opposed explain that students cannot be isolated from district to district, nor from state to state,
and that standards in one school system may be much less than other systems (Benedict & Gerardi, 1985).

Arguments for norm-referenced, or standardized testing, say that standardized tests provide a reliable and valid indicator of school outcomes, particularly in the areas of reading comprehension and mathematics computation. Also standardized tests seem to be publicly well accepted and tend to provide a measure of educational effectiveness (Benedict & Gerardi, 1985).

Finally, schools that achieve above expectations on standardized tests also tend to succeed in other important areas such as attendance, student self-concept and participation, lack of student disruption and vandalism, and low incidence of delinquent behavior in the community (Benedict & Gerardi, 1985).

With this in mind, proponents of using standardized testing scores as a valid measure of learned outcomes often feel that this could be a way of awarding performance-based compensation increases for all educators (Benedict & Gerardi, 1985).

Advent of Quality

A growing number of voices now call for reform of K-12 schools. Not surprisingly, a majority of the voices making the call and offering direction are outside of education. Maybe that is to be expected because new paradigms do not come from within but rather from areas external to the field being challenged (Barker, 1991). While recognizing that considerable uncertainty prevails in the field of education, one certainty remains -- the call for school renewal will continue and intensify.

Numerous national reports find fault with the quality of education in the United States, and there is general agreement among observers, analysts, and participants in the system that criticism is warranted (Boyer, 1983; Business - Higher Education Forum,
1983; Gardner, 1971; Goodlad, 1984; Lightfoot, 1983; National Commission in Education, 1983; National Task Force on Education for Economic Growth, 1983; Ravitch, 1984; Sizer, 1984; Twentieth Century Fund Task Force on Federal Elementary and Secondary Education Policy, 1983). The reports tend to concentrate more on identifying problems than on how to solve them (Smith, 1984). In addition, there is little, if any, consensus about how to improve the system in the field that produces the managers of change in education, namely educational administration (Griffith, 1983; Hoy, 1982).

As a major contributor of tax dollars to public education, corporate America is getting a lousy return on its investment. Business states that:

Schools today are not preparing kids for jobs - they aren't even teaching them to read and write. In the United States, thirty percent of all high school students (one million teenagers each year) drop out before graduating. Most are virtually unemployable. And of those who do graduate, many do not have the problem-solving skills necessary to function in an increasingly complex information society (Moen, 1988, p. 24).

Continual Quality Improvement, the Deming Philosophy

W. Edwards Deming is best known for his work in Japan following World War II that gives him credit for designing that nation's postwar economy recovery. His ideas about management grew from his teaching, research, and professional practices in the United States, where he became a pioneer in the development of statistical sampling techniques and quality control in industry. He later developed an overall philosophy of management and a set of processes through which to implement his philosophy (Stampen, 1991).

Deming's approach to quality improvement in industry is described in Out of the Crisis (1986), in an accompanying set of videotapes, "Quality, Productivity, and
Competitive Position" (1985), and in a series of seminars, many of which were held at leading universities.

Brief History of Continual Quality Improvement

Historically, the quality improvement philosophy seems to be evidenced as early as the 1800's when the Zeiss Company, known for its optical products, collaborated with workers about what work needs to be accomplished, while letting the employees themselves determine how the work was to be completed (Drucker, 1974). In later years, around the 1940's, the basic notion of worker participation seemed to be growing here in the United States. A prominent example of this was Walt Disney, who would solicit information and suggestions from employees and their wives and children to determine how the Disney Company could be improved (Ingle, 1982). Also, in the 1940's, IBM become famous for using group problem-solving techniques. Engineers, foremen, and workers cooperatively worked out details, resulting in a superior design which was significantly better, cheaper, and faster (Ingle, 1982). Other examples of the utilization of continuous improvement principles could be seen in Bell Laboratories (Pines, 1990; Port, 1991; Gail, 1991; Gabor, 1990), and finally, the Army in the 1930's, who was teaching statistical methods to those supplying armaments to the military (Pines, 1990; Port, 1991; Psihoyos, 1991; Perine, 1990).

Continual Quality Improvement

Deming described his philosophy mostly through the aid of case examples and short essays which illustrate criteria for effective management. In his view, they collectively constitute an operational theory of management (Stampen, 1991).
The contemporary perception of American business and industry is that the U.S. firms have been playing catch-up in the areas of quality and productivity. Evidence of this can be seen where foreign competition has entered markets once dominated by U.S. companies by producing higher quality products (Aly & Maytubby & Elshennany, 1990; Burstein & Sedlak, 1988; Wilkinson & Allen & Snape, 1991; Horton, 1989). However, the U.S. seems to have been lacking in quality and improvement programs and the lack of quality management.

Continual quality improvement seems to embrace a whole new philosophy of production which seems foreign to current U.S. practices and include:

1. Achievement of higher levels of quality and increasing productivity;
2. A long-term and continuous process with managers promoting continuous improvement, beginning with their own functions;
3. Statistical process control;
4. Incorporation of quality and integrity into every level of an organization;
5. A refocus of its priorities on customers and produce superior quality products and service;

Deming's Fourteen Points and the Relationship to Education

W. Edwards Deming stresses fourteen points which must be included in a system which is to achieve quality. These fourteen points will be enumerated and then shown how the point is applicable to education.
Establish constancy of purpose  

Deming's first point is to create constancy of purpose toward the improvement of products and services by allocating resources for long-term planning, organizational research and education of the workforce (Deming, 1986).

For educators, this means that all resources must be directed toward student development. All factions of the community including students, parents, teachers, support staff, administrators, school board members, and community patrons must all be involved in the functioning of the school, including short- and long-range planning (McLeod, 1991; Tribus, 1991; Melvin, 1991; Glaub, 1990; Leonard, 1991).

Adopt a new philosophy  

Deming's second point is to reject commonly accepted levels of delays, mistakes, defective materials, and defective workmanship. Organizations must constantly perfect processes aimed at finding problems, their causes, and ways of correcting them (Deming, 1986).

All educators must believe that students are able to achieve at high levels under the right conditions of teaching and learning (McLeod, 1991; Tribus, 1991; Melvin, 1991; Glaub, 1990; Leonard, 1991).

Cease dependence on mass inspection  

Deming's third point is to cease mass inspection of purchased materials and services. Instead, improve selection processes and seek statistical evidence of quality (Deming, 1986).

Testing and measurement must be used often to determine outcomes or progress of students (McLeod, 1991; Tribus, 1991; Melvin, 1991; Glaub, 1990; Leonard, 1991).
End the practice of awarding business on the basis of price alone

Deming's fourth point advocates ending the practice of awarding business on the basis of price tag. Strive for the long-term reduction of total cost rather than piecemeal efficiency (Deming, 1986).

End the practice of awarding business on the basis of price alone. Educators must be more concerned with quality rather than in just low cost. All facets of the educational program must be evaluated to determine outcomes (McLeod, 1991; Tribus, 1991; Melvin, 1991; Glaub, 1990; Leonard, 1991).

Constantly improve every system

Deming's fifth point advocates looking for problems in the system. Managers, and no one else, are responsible for finding and correcting systematic problems (Deming, 1986).

Educators need to constantly improve and upgrade school programs and services. Barriers which are identified must be eliminated so that progress can be made (McLeod, 1991; Tribus, 1991; Melvin, 1991; Glaub, 1990; Leonard, 1991).

Institute training on the job

Deming's sixth point supports instituting modern methods of training on the job. Employees cannot perform well unless they know their jobs and feel free to inform managers of problems they encounter. Also, statistical methods must be used to identify when on-the-job training has achieved its purpose (Deming, 1986).

Employees and managers must work together to solve problems. Employees and managers must have constant access to new methods and developments to stay abreast of the changing demands and requirements. Statistical analysis should always be used to

**Institute leadership**

Deming's seventh point advocates instituting modern methods of supervision. Supervision is one of the most important responsibilities of managers. They must learn from employees to help them do a better job (Deming, 1986). Deming (1989) says that managers or supervisors must become leaders and that an effective leader: (1) must understand the meaning of a system and how the work of groups supports the system, (2) sees the group as a function of the system, (3) understands that all people are different and try to optimize the education, skills, and abilities of everyone, and help everyone to improve, (4) is a coach and counselor, not a judge, (5) will study results with the aim to continuous improvement, (6) will know when someone is in need of special help, (7) creates an environment conducive to trust, freedom, and innovation, (8) does not expect perfection; people can learn from mistakes, (9) listens and learns without passing judgements, (10) understands the benefits of cooperation (Deming, 1986).

Supervision is one of the most important responsibilities of managers. However, managers must become effective leaders who understand the system, know how to work with people, create a trusting environment, act as coach, listens, and understands cooperation (McLeod, 1991; Tribus, 1991; Melvin, 1991; Glaub, 1990; Leonard, 1991).

**Drive out fear**

Deming's eighth point is to drive out fear so that everyone can work effectively. Employees must hold secure jobs and feel free to express ideas, ask
questions, and ask for instructions. The elimination of fear is an important responsibility of managers (Deming, 1986).

Employees must feel job security, feel freedom from fear, and feel free to express ideas (McLeod, 1991; Tribus, 1991; Melvin, 1991; Glaub, 1990; Leonard, 1991).

Break down barriers between departments

Deming's ninth point advocates breaking down barriers between departments. Teams composed of people performing different functions can work effectively to improve products and services (Deming, 1986).

People in the various departments need to work cooperatively by solving problems through combining efforts and teamwork (McLeod, 1991; Tribus, 1991; Melvin, 1991; Glaub, 1990; Leonard, 1991).

Abandon slogans

Deming's tenth point recommends the elimination of goals, quotas, posters, and slogans asking for new levels of productivity without providing effective methods. Goals with "road maps are useless" (Deming, 1986).

Managers must eliminate slogans, exhortations, and targets for teachers and students because they only create adversarial relationships (McLeod, 1991; Tribus, 1991; Melvin, 1991; Glaub, 1990; Leonard, 1991).

Eliminate numerical goals and quotas

Deming's eleventh point is to eliminate work standards that describe numerical quotas. Such standards, according to Deming, are "fortresses" against the improvement
of quality and productivity, and they manifest an inability to understand and provide appropriate supervision (Deming, 1986).

Goals should be replaced with charts that measure progress and analyze the situation (McLeod, 1991; Tribus, 1991; Melvin, 1991; Glaub, 1990; Leonard, 1991).

Remove barriers that rob people of pride in workmanship

Deming's twelveth point recommends the removal of barriers to employee's rights to pride of workmanship. Pride of workmanship is impossible without accurate definitions of acceptable workmanship. Definitions are the responsibilities of managers (Deming, 1986).

This point, and the focus of this study, explores whether performance-based ratings and pay are detrimental to quality and to the quality of the organization. "Merit ratings and pay rob the students, teachers, management and support staff of their right to pride and joy of workmanship (McLeod, 1991; Tribus, 1991; Melvin, 1991; Glaub, 1990; Leonard, 1991).

Promote education and self-improvement

Deming's thirteenth point is to institute a vigorous program of education and retraining. Improvement in productivity means reassignment of personnel. Education and retraining will prepare people for new jobs and responsibilities. It is also necessary for everyone to learn the rudiments of statistical theory and application. The latter is a language of communication for organizational improvement (Deming, 1986).

Schools must provide all employees with training in quality leadership, measurement, analysis, problem solving, self evaluation and assertiveness training. This
training must be part of their normal work of the school (McLeod, 1991; Tribus, 1991; Melvin, 1991; Glaub, 1990; Leonard, 1991).

**Structure management to accomplish the transformation**

Deming's fourteenth point is to create a structure in top management that will encourage implementation of the above thirteen points every day (Deming, 1986).

Everyone in the system including superintendents, central office personnel, principals, teachers, support staff, students, parents, and community patrons are responsible for helping to bring about this transformation (McLeod, 1991; Tribus, 1991; Melvin, 1991; Glaub, 1990; Leonard, 1991).

**Applicability to Schools**

The American Association of School Administrators (A.A.S.A.) enlisted the expertise of quality management expert W. Edwards Deming to offer school leaders a new lens through which to view the transformation of schools that the president and governors are calling for by the year 2000 (Marx, 1991).

Among Deming's principles, which he promoted in a conversation with A.A.S.A. staff are:

1. That education can only be transformed one system at a time;
2. That leaders must have a vision and must understand their system in order to put that vision into practice;
3. That schools must expect and design for variation among children; and
4. That the goal of education leaders should not be achieving numerical goals, but transforming school systems (Marx, 1991).
Educators who apply Deming's quality concepts to schools are demonstrating that any form of effective decision-making closer to the "product" requires a different kind of support or leadership.

The Malcolm Baldrige Award

Quality management is different from other programs in that it involves all employees and constitutes a fundamental change in the way an organization is measured and managed (Aly, Maytubby & Elshennawy, 1990; Wilkinson & Allen & Snape, 1991; Day, 1992). In 1987, the institution of the Malcolm Baldrige National Quality Award provided a nationally accepted set of criteria for evaluating the extent to which a company had implemented quality management. The key principles of the award include: (1) leadership, (2) information and analysis, (3) strategic quality planning, (4) human resource use, (5) quality assurance of products and services, (6) quality results, and (7) customer satisfaction. (Finley, 1991; Rohan, 1989; Edowsomwan & Savage-Moore, 1991; McDonnell, 1988; Baatz, 1991; Spiker, 1991; Kiely, 1991; Brown, 1991). These themes were used to develop the questionnaire about quality used in this study.

The Baldrige Award provides the best framework for a quality improvement system. Its criteria can be used to assess an organization's quality program (Brown, 1992; Jaehn, 1990; Knotts Jr., Parrish Jr., and Evans, 1993). Currently, some companies are adopting its criteria to assess their processes and have applied for the award primarily to get an evaluation of their quality systems (Placek, 1992).
Summary

There is no doubt that after reviewing the literature about performance pay and quality improvement that there is disagreement as to the impact or relationship between the two. On the one hand, proponents of performance-based compensation believe that school administrators and even teachers should be paid only upon the evidence that the organization is performing at a higher level. These proponents believe that administrators should be compensated on the performance of the job which has been assigned to them.

Deming's quality improvement philosophy seemed to contradict performance-based compensation. Deming believed that performance-based compensation was harmful to businesses, industries, and yes, our school systems. He believed that performance-based compensation "judges people, puts them in slots, and ruins them."

A review of the literature indicates there is strong support for compensating the superintendent based upon evaluations, district goal achievements, and student outcomes. This comes at a time when education is coming under harsh criticism. On the other hand, W. Edwards Deming is very critical of any kind of merit- or performance-based compensation. His theories state that this is one factor which will destroy an organization. Therefore, there is a definite need to study the perceptions of performance-based compensation as so indicated by those involved in the educational process and the relationship to the perceived quality of the educational organization.

This study will continue by determining whether superintendents and board presidents believe in performance-based compensation, and then will compare these beliefs with the perceived quality rating of their particular school system.
CHAPTER III: METHODOLOGY

This study was designed to investigate and analyze perceptions of the manner in which superintendents are awarded salary increases. More specifically, the purpose of this study was:

1. To determine the manner in which superintendents and board presidents perceive that the superintendents of selected Iowa school districts are currently awarded salary increases.
2. To determine the manner in which superintendents and board presidents perceive that the superintendent of schools ideally should be awarded salary increases.
3. To determine the perceived quality index of school districts in the state of Iowa, using the School System Perceived Quality Assessment Instrument, developed by William K. Poston and Rashid Bax, Iowa State University.
4. To determine the relationship between the perceived quality index of Iowa school districts and the compensation perceptions of Iowa superintendents.

Development of Instrument

"Current and Preferred Methods of Awarding Superintendent Salary Increases"

The survey instrument utilized in this survey was developed to provide insights into perceptions at the local school district level concerning how superintendents are reimbursed. The instrument was developed following a review of related literature. Literature and information available concerning this particular topic was limited.

Ten practicing superintendents and twelve board members were interviewed to determine what criteria were being used in determining the compensation of the superintendent. From the literature and the interviews, a proposed survey instrument was
developed. The items used in the survey were developed from a list of twelve criteria, either currently utilized to compensate superintendents, or criteria identified by practitioners that ideally should be used to compensate superintendents. The list of criteria was then categorized as either performance-based or non-performance-based in nature. For the purposes of this study, performance-based compensation was defined as compensation for the superintendent of schools that is related to indicators in the school system that can be measureably and specifically attributed to efforts by the superintendent. Non-performance-based compensation is compensation based upon those indicators measured in a school system over which a superintendent has little or no control. Seven of the twelve criteria developed were non-performance-based in nature, while five were indicators considered to be performance-based in nature. The twelve criteria were then developed into an instrument that could be utilized to measure the perceived relative importance of each criterion in determining the compensation of the school superintendent.

The twelve criteria were then developed into twelve statements containing the phrase "... should be related to..." and designed to elicit preferences for ideal criteria to utilize in determining the compensation of the superintendent.

A five-point Likert scale was then attached to each of the twelve criteria that measured perception of how superintendents were being compensated and to the twelve criteria measuring ideal practices for superintendent compensation. On the Likert scale, a rating of one was given to a belief statement with which the respondent strongly disagreed and a rating of five for an indication of strong agreement.

The survey instrument was evaluated by a validation panel of nine practicing administrators and researchers. (A list of the panel members can be found in Appendix A.) Five were practicing Iowa superintendents and others reviewing the questionnaire...
included an assistant superintendent, a retired superintendent, a superintendent in Illinois, and a professor of Research and Evaluation at Iowa State University. All panel members indicated that the survey instrument was clear and would serve the purpose for which it was developed.

The survey instrument was field tested with twelve board members who were serving on boards of education or had recently served on school boards. All twelve subjects indicated that the survey instrument was clear and would adequately serve the purpose for which it was developed.

Based upon the response of the validation panel and others the instrument was deemed valid for the purposes for which it was developed (Fowler, p. 97).

School System Perceived Quality Assessment Instrument

The School System Perceived Quality Assessment Instrument was developed by William Poston and Rashid Bax, Iowa State University, to assess levels of quality in schools based on Baldrige-type criteria. There are questions, organized in seven groups which ask the respondent to rate the current conditions of the school and the desired condition. A panel of experts in quality improvement was selected to validate the instrument (See Appendix). Both questionnaires used the Likert type scale since Likert type scales are probably the most common types of attitude scales. (Borg & Gall, 1989). It is also recommended that any survey instrument be pretested in order to collect reliability and validity evidence. Both questionnaires were approved by the human subjects committee at Iowa State University (See Appendix).
Selection of Subjects

The superintendents and board presidents of forty-four selected K-12 Iowa school districts were asked to respond to the questionnaire concerning salary increases for superintendents. Eleven currently practicing superintendents or curriculum directors elected four school districts in the state of Iowa to participate in this study. These districts ranged in size from 250 to 3,000+ students. All but ten superintendents and fourteen board presidents responded within the first ten days. Follow-up letters and questionnaires were sent to those who had not responded. Within two weeks, all but two board presidents had responded. A follow-up telephone call was made to each board president. Finally all 44 superintendents and 44 board presidents responded to the questionnaire.

Five randomly selected teachers, all school board members, two administrators, three randomly selected support personnel, two randomly selected student body officers, and the superintendent from each of the 44 school districts were asked to complete the Perceived Quality Assessment Instrument. Follow-up to those districts not responding was done by the research group.

Responses to the Perceived Quality Assessment Instrument were compiled. Of the 18-20 respondents (some districts have seven board members) from the forty-four K-12 school districts, all but four schools had enough returns to do a valid study.

Variables Elicited

The purpose of this study was to investigate and analyze perceptions of superintendents and school board presidents to determine the manner in which the district superintendent is currently and should be compensated. The variables utilized in this study included perceptions of superintendents and board presidents concerning
current practices relative to non-performance based pay and performance based pay for the superintendent; and to measure the perceived preferences of both groups concerning how superintendents ideally should be compensated. Descriptive statistics are presented for responses on the survey instrument.

The dependent variable in this study is the cumulative result of the responses in terms of the perceived quality index of the selected school districts, using the School System Perceived Quality Assessment Instrument. This variable was used to test hypotheses four and five.

Analysis of the Data

Data from the surveys were tabulated and analyzed. Independent variables measured in this study were:

1. Board presidents' perceptions of how superintendent compensation is currently determined.

2. Board presidents' perceptions of how superintendent compensation ideally should be determined.

3. Superintendents' perceptions of how superintendent compensation is currently determined.

4. Superintendents' perceptions of how superintendent compensation ideally should be determined.

Dependent variables measured in this study were:

1. The positions of the individual taking part in the study, i.e. board president and superintendent.

2. The quality index measure of the various school districts represented by the board presidents and superintendents in this study.
Several research questions were formulated to guide the study.

1. Does the perception concerning how superintendents are compensated reflect the position that an individual holds, i.e., board president or superintendent?

2. Does the perception concerning how superintendents should ideally be compensated reflect the position that an individual holds, i.e., board president or superintendent?

3. Are there any significant relationships between the measured perceived quality of the school systems in this study and the beliefs of superintendents concerning how superintendents ideally should be compensated?

4. Do differences exist between board presidents' perceptions of how superintendents are currently compensated and beliefs concerning how superintendents ideally should be compensated?

5. Do differences exist between superintendents' perceptions of how superintendents are currently compensated and beliefs concerning how superintendents ideally should be compensated?

Hypothesis one through three, testing for significant differences, were tested utilizing two-directional t-tests. Hypothesis four was tested utilizing one way analysis of various techniques. Hypothesis five was tested utilizing correlation.
CHAPTER IV. FINDINGS

The purpose of this study was to ascertain superintendents' and board of education presidents' perceptions concerning conditions and criteria used in compensating district superintendents. The methodology utilized in this study involved assessing two aspects of compensation - perceptions and preferences. The first portion was a measurement of superintendent and board president perceptions on current practices of how compensation was determined. The second area measured preferences of both groups concerning how superintendents should be compensated. Results of these assessments are presented in this chapter. Descriptive statistics are presented for responses on the survey instrument. Three hypotheses concerning various groupings of superintendents and board presidents were tested with unpaired, two-tailed t-tests. A fourth hypothesis concerning group means was tested using one-factor analysis of variance. A fifth hypothesis concerning relationships of group perceptions was tested using the Pearson product-moment correlation coefficient test.

Topics covered in this chapter are Internal Consistency Reliability, Descriptive Statistical Results, and Inferential Statistical Results.

Internal Consistency Reliability

The Cronbach Alpha reliability coefficient was calculated to determine an estimate of the internal consistency of the survey instrument. Reliability coefficients were calculated for the two sets of questions measuring current practices for compensating superintendents and also the two sets of questions measuring ideal criteria for compensating superintendents.
Estimates of internal consistency reliability are based on correlations among items and groups of items within the instrument. Table 1 contains the reliability coefficients for the four subtests of survey statements as well as the reliability coefficient for the total survey instrument.

Table 1. Cronbach Alpha reliability coefficients for subscales of four subjective variables

<table>
<thead>
<tr>
<th>Variables</th>
<th>Alpha</th>
<th>No. of items</th>
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<tbody>
<tr>
<td><strong>Current Practice</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Non-performance-based</td>
<td>.75</td>
<td>7</td>
</tr>
<tr>
<td>2. Performance-based compensation</td>
<td>.83</td>
<td>5</td>
</tr>
<tr>
<td><strong>Preferred Practice</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Non-performance-based</td>
<td>.87</td>
<td>7</td>
</tr>
<tr>
<td>4. Performance-based compensation</td>
<td>.67</td>
<td>5</td>
</tr>
<tr>
<td>Total survey of four subtests</td>
<td>.67</td>
<td>24</td>
</tr>
</tbody>
</table>

Guidelines utilized for acceptance of Alpha limits were suggested by Nunnally and Durham (1975).

In the early stages of research on predictor tests or hypothesized measures of a construct, one saves time and energy by working with instruments that have only modest reliability, for which purpose reliabilities of .60 or .50 will suffice . . . for basic research, it can be argued that increasing reliabilities beyond .80 is often wasteful. (p. 345)
Although the reliability estimates were considered modest by most research standards, the fact that there are no similar surveys available for comparison purposes, led to an acceptance of this level of reliability for the first study of this nature.

Descriptive Statistical Results

In the first procedure, individual item and total subtest means and standard deviations were calculated for the aggregate of responses for all statements measuring superintendent and board president perceptions. Respondents were asked to assess the degree to which they agreed or disagreed using a five-point, Likert type scale. A rating of one was given to a belief statement with which the respondent strongly disagreed. A rating of two was given to a belief statement with which the respondent disagreed. A rating of three indicated that the respondent had no opinion on the survey item. A rating of four was given to a belief statement with which the respondent agreed. A rating of five was given to a belief statement with which the respondent strongly agreed.

When summarizing the findings for each survey item and responses by the various groups, it is important to discuss the degree of agreement indicated by each mean response. For the purposes of this discussion, mean scores less than 2.25 are defined as a "low" level of support for the variable measured. Mean scores ranging from 2.25 to 3.75 are defined as indicating a "moderate" level of support for the variable measured and scores from 3.76 to 5 are defined as a "high" level of support for the variable measured. These designations were arbitrarily selected for purposes of comparison.

Results presented in Table 2 represent superintendent and board president perceptions of how increases in compensation for the superintendent are awarded in current practice and how they should be awarded in ideal practice.
Table 2. Total means and standard deviations of aggregate responses of superintendents and board presidents concerning practices and preferences for salary increases for the superintendent.

<table>
<thead>
<tr>
<th>Item</th>
<th>Belief Statement</th>
<th>Presidents</th>
<th>Superintendents</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>N</td>
<td>X (SD)</td>
</tr>
<tr>
<td>1.</td>
<td>Length of service to district</td>
<td>44</td>
<td>2.67 (.94)</td>
</tr>
<tr>
<td>2.</td>
<td>Increased formal education</td>
<td>44</td>
<td>2.75 (.97)</td>
</tr>
<tr>
<td>3.</td>
<td>Cost of living</td>
<td>44</td>
<td>2.86 (1.00)</td>
</tr>
<tr>
<td>4.</td>
<td>Growth in district revenues</td>
<td>44</td>
<td>3.46 (1.15)</td>
</tr>
<tr>
<td>5.</td>
<td>Teacher contract settlement</td>
<td>43</td>
<td>3.56 (1.22)</td>
</tr>
<tr>
<td>6.</td>
<td>Salaries of colleagues in region</td>
<td>44</td>
<td>3.39 (.99)</td>
</tr>
<tr>
<td>7.</td>
<td>Change in student population numbers</td>
<td>44</td>
<td>1.86 (1.02)</td>
</tr>
<tr>
<td>Totals</td>
<td></td>
<td>44</td>
<td>2.94 (1.17)</td>
</tr>
</tbody>
</table>

Part "A" Perceptions of "How salaries are currently awarded."

Statements 1-7. Statements not related to performance in pay determinations.

<table>
<thead>
<tr>
<th>Item</th>
<th>Belief Statement</th>
<th>Presidents</th>
<th>Superintendents</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>N</td>
<td>X (SD)</td>
</tr>
<tr>
<td>8.</td>
<td>Superintendents performance on job performance</td>
<td>44</td>
<td>3.96 (1.16)</td>
</tr>
<tr>
<td>9.</td>
<td>Achievement of district goals</td>
<td>44</td>
<td>3.61 (1.13)</td>
</tr>
<tr>
<td>10.</td>
<td>School board evaluation</td>
<td>44</td>
<td>3.77 (1.05)</td>
</tr>
<tr>
<td>11.</td>
<td>Student achievement (outcomes)</td>
<td>44</td>
<td>2.77 (1.14)</td>
</tr>
<tr>
<td>12.</td>
<td>Standardized test score results</td>
<td>44</td>
<td>2.05 (1.12)</td>
</tr>
<tr>
<td>Totals</td>
<td></td>
<td>44</td>
<td>3.23 (1.32)</td>
</tr>
</tbody>
</table>

Statements 8-12. Statements related to performance in pay determinations.

Part "B" Preferences concerning "How salaries should be awarded."


<table>
<thead>
<tr>
<th>Item</th>
<th>Belief Statement</th>
<th>Presidents</th>
<th>Superintendents</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>N</td>
<td>X (SD)</td>
</tr>
<tr>
<td>1.</td>
<td>Length of service to district</td>
<td>44</td>
<td>2.55 (1.02)</td>
</tr>
<tr>
<td>2.</td>
<td>Increased formal education</td>
<td>44</td>
<td>3.41 (.79)</td>
</tr>
<tr>
<td>3.</td>
<td>Cost of living</td>
<td>44</td>
<td>3.41 (.79)</td>
</tr>
<tr>
<td>4.</td>
<td>Growth in district revenues</td>
<td>44</td>
<td>3.02 (1.00)</td>
</tr>
<tr>
<td>5.</td>
<td>Teacher contract settlement</td>
<td>44</td>
<td>3.46 (1.07)</td>
</tr>
<tr>
<td>6.</td>
<td>Salaries of colleagues in region</td>
<td>44</td>
<td>3.07 (1.13)</td>
</tr>
<tr>
<td>7.</td>
<td>Change in student population numbers</td>
<td>44</td>
<td>2.46 (.79)</td>
</tr>
<tr>
<td>Totals</td>
<td></td>
<td>44</td>
<td>3.07 (1.04)</td>
</tr>
</tbody>
</table>
Table 2 (continued)

<table>
<thead>
<tr>
<th>Item</th>
<th>Belief Statement</th>
<th>Presidents</th>
<th>Superintendents</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>N  X (SD)</td>
<td>N   X (SD)</td>
</tr>
<tr>
<td>8.</td>
<td>Superintendents performance on job description</td>
<td>44 4.36 (.72)</td>
<td>44 4.59 (.50)</td>
</tr>
<tr>
<td>9.</td>
<td>Achievement of district goals</td>
<td>44 4.18 (.79)</td>
<td>44 4.32 (.86)</td>
</tr>
<tr>
<td>10.</td>
<td>School board evaluation</td>
<td>44 4.11 (.75)</td>
<td>44 4.43 (.50)</td>
</tr>
<tr>
<td>11.</td>
<td>Student achievement (outcomes)</td>
<td>44 3.21 (.85)</td>
<td>44 2.84 (1.08)</td>
</tr>
<tr>
<td>12.</td>
<td>Standardized test score results</td>
<td>44 2.55 (.82)</td>
<td>44 2.02 (.88)</td>
</tr>
<tr>
<td></td>
<td>Totals</td>
<td>44 3.68 (1.05)</td>
<td>44 3.64 (1.29)</td>
</tr>
</tbody>
</table>


8. Superintendents performance on job description
9. Achievement of district goals
10. School board evaluation
11. Student achievement (outcomes)
12. Standardized test score results

Part "A" of the survey instrument measured the participants' perceptions concerning how increases in compensation are currently awarded in the district. Belief statements one through seven in part "A" measured the participants' level of agreement or disagreement with the notion of increases in compensation based upon criteria considered to be out of the control of the superintendent or non-performance-based criteria. In this section board presidents and superintendents agreed that increases or decreases in student population numbers have low support for determining compensation increases for the superintendent. Both groups agreed that the contract settlement with the teachers' union has the highest degree of impact on the compensation increase awarded to the superintendent. Board presidents as a group gave moderate support to the relative importance of this variable in determining compensation increases. Superintendents gave a high level of support for the criterion of contract settlement with the teachers' union in having an impact upon the way that compensation increases are determined for the superintendent.
Belief statements eight through twelve in part "A" measured the participants' level of agreement or disagreement with the perception of increases in compensation based upon criteria considered to be dependent upon the performance levels of the superintendent. Results on standardized tests administered to students was viewed by both superintendents and board presidents as the one criterion with the least impact on the compensation levels of the superintendent. Both groups registered low support for the relative importance of this criterion as a basis for determining compensation increases for the superintendent. Both superintendents and board presidents rated performance in relation to the job description as the single most important factor in determining the compensation for the superintendent. Board presidents gave job description performance a high rating of 3.96 and superintendents ascribed moderate importance with a mean rating of 3.73 to this variable in determining compensation increases. There was consensus between the two groups that performance in relation to the job description was the single most important factor in determining the compensation for the superintendent. Board presidents gave this a high rating and superintendents ascribed moderate importance to this variable in determining compensation increases.

Part "B" of the survey instrument measured the participants' beliefs concerning how increases in compensation should be awarded to the superintendent in the district. These ratings may be referred to in Table 2. Statements one through seven in part "B" measured the preferences for salary increases based upon criteria not controlled by the superintendent or, those criteria opposed to performance-based compensation. In this section, once again, both board presidents and superintendents gave the lowest mean score to "changes in student population numbers" as a consideration in determining the superintendent's compensation. Board presidents gave this a mean score of 2.46 and
superintendents rated this variable at 2.59. Both groups attributed moderate importance to this variable in determining compensation increases.

Among board presidents, contract settlement with the teachers' union, with an average rating of 3.46, was viewed as the greatest single determinant of the superintendent's compensation among the variety of factors measured in this section. This criterion received a moderate rating in how compensation increases should be given to their superintendents.

Among the superintendent group surveyed, relative compensations of other superintendents in conference schools was viewed as the single greatest determinant that the board of education should consider when setting the superintendent's compensation levels. This criterion was given a high rating with a mean of 4.18.

Statements eight through twelve measured preferences for performance-based measures as criteria for compensation increases for the superintendent. The results of these ratings are referred to in Table 2. Board presidents and superintendents gave the highest rating to the superintendent's performance in relation to the job description as the greatest single factor in determining how compensation increases should be awarded to the superintendent. Both groups gave this variable a high rating. Standardized test scores were rated by both groups to be the least desirable factor of all possible criteria measured in this section for determining the superintendent's increase in compensation levels. Board presidents gave standardized test scores a moderate rating of 2.55 concerning the impact on the superintendent's compensation increase whereas superintendents gave this a low rating of 2.02.
Inferential Statistical Results

The next procedure was to test the five hypotheses proposed in Chapter I.

Comparison of board presidents and superintendents on compensation factors

The first hypothesis to be tested was: There is no significant difference between board presidents and superintendents concerning their perceptions of how superintendents should be compensated as contrasted with how superintendents are currently being compensated.

Belief statements utilized in the survey instrument to test this hypothesis are presented in the Appendix A and with mean results of the respondents presented in Table 2. The survey instrument utilized a Likert type scale to measure the perceptions of respondents. A rating of one was given by a respondent to a belief statement with which the respondent strongly disagreed and a rating of five was given by a respondent to a belief statement with which the respondent strongly agreed. The hypothesis tested was:

\[ H_0: \mu_s = \mu_p \]

Unpaired, two-tailed t-tests were used to determine if significant differences existed between board presidents and superintendents in their beliefs concerning compensation increases for superintendents on the four portions of the survey. A significance level of .05 was established for the purpose of testing this hypothesis.

In the first portion of the survey the participants were asked to rate the relative importance of non-performance related criteria in establishing how salaries are currently awarded in districts.
Table 3. Results of unpaired, two-tailed t-test of group means for non-performance based criteria for current practices of determining superintendent compensation

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>S.D.</th>
<th>Mean</th>
<th>t value</th>
<th>2-tail prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Board Presidents</td>
<td>44</td>
<td>.50</td>
<td>2.93</td>
<td>.18</td>
<td>.857</td>
</tr>
<tr>
<td>Superintendent</td>
<td>44</td>
<td>.71</td>
<td>2.91</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

There is an .857 level of probability that the differences measured by the survey instrument were arrived at by chance. Results in Table 3 lead to a failure to reject the null hypothesis at the .05 level of significance. There were no significant differences between superintendents and board presidents in the strength of their beliefs concerning the relative importance of non-performance criteria in determining compensation increases for the superintendent.

A second test was conducted to determine if a significant difference existed between board presidents and superintendents in their beliefs concerning the importance of performance-based criteria in determining how salaries are currently determined for superintendents. An unpaired, two-tailed t-test was utilized to test for significant differences in aggregate means obtained from the two groups on the survey instrument. A significance level of .05 was established for the purpose of testing this hypothesis.

Results reported in Table 4 lead to a rejection of the null hypothesis. Significant differences existed between superintendents and board presidents in their beliefs concerning the relative importance of performance-based criteria in current practice for determining compensation increases for the superintendent.
Table 4. Results of unpaired, two-tailed t-test of group means for performance-based criteria for current practices of determining superintendent compensation

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>S.D.</th>
<th>Mean</th>
<th>t Value</th>
<th>2-tail Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Board President</td>
<td>44</td>
<td>.90</td>
<td>3.23</td>
<td>2.2</td>
<td>.030</td>
</tr>
<tr>
<td>Superintendent</td>
<td>44</td>
<td>.76</td>
<td>2.84</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

There is a .03 level of probability that results were obtained by chance.

Superintendents place a lower level of importance for compensation increases based on job performance than do board presidents in this study.

A third test was performed to determine if significant differences existed between superintendents and board presidents concerning their rating of the relative importance of non-performance related criteria in determining how superintendents ideally should be awarded compensation increases. A significance level of .05 was established for the purpose of testing this hypothesis.

Results in Table 5 lead to a rejection of the null hypothesis. Results indicated a significant level of difference between the two groups measured concerning their view of the relative importance of these criteria in how superintendents ideally should be compensated. Board presidents mean results of 3.07 were significantly less than the superintendents' mean results of 3.36.
Table 5. Results of unpaired, two-tailed t-test of group means for non-performance-based criteria for ideally determining superintendent compensation

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>S.D.</th>
<th>Mean</th>
<th>t Value</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Board Presidents</td>
<td>44</td>
<td>.49</td>
<td>3.07</td>
<td>-2.70</td>
<td>.008</td>
</tr>
<tr>
<td>Superintendents</td>
<td>44</td>
<td>.51</td>
<td>3.36</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

There exists a .008 level of probability that differences in beliefs, as measured on the survey instrument, were arrived at by chance.

A fourth test was performed to determine if significant differences existed between superintendents and board presidents concerning their rating of the relative importance of performance related criteria in determining how superintendents ideally should be awarded compensation increases. A significance level of .05 was established for the purpose of testing this hypothesis.

Results in Table 6 lead to a failure to reject the null hypothesis. Results indicated no significant difference between the board presidents and superintendents in their beliefs of the relative importance of performance related criteria in establishing how the superintendent's compensation should ideally be established.

Table 6. Results of unpaired, two-tailed t-test of group means for performance-based criteria for ideally determining superintendent compensation

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>S.D.</th>
<th>Mean</th>
<th>t-Value</th>
<th>2-tail Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Board President</td>
<td>44</td>
<td>.46</td>
<td>3.68</td>
<td>.40</td>
<td>.690</td>
</tr>
<tr>
<td>Superintendent</td>
<td>44</td>
<td>.50</td>
<td>3.64</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Board president and superintendent perceptions of factors relating to compensation

A second issue investigated in this research was the relative strength of beliefs of board presidents and superintendents toward performance and non-performance-based compensation. A second hypothesis tested is that there is no significant difference between mean scores of superintendents when comparing their responses to non-performance-based compensation criteria to performance-based compensation criteria on the two portions of the survey instrument.

A corollary hypothesis is that there is no significant difference between mean results of board presidents when compared on the responses on the there to be no differences between performance-based pay and non-performance-two portions of the survey instrument. In other words, do board presidents and superintendents perceive based compensation for superintendents both in current practice and in the ideal practice? That is, do board presidents and superintendents perceive one to be more important than the other?

The hypothesis tested for superintendents was:

\[ H_0: \mu_{s1/c} = \mu_{s2/c} \]
\[ H_A: \mu_{s1/i} \neq \mu_{s2/i} \]

The formula for board presidents was:

\[ H_0: \mu_{b1/c} = \mu_{b2/c} \]
\[ H_A: \mu_{b1/i} \neq \mu_{b2/i} \]

Paired t-tests were used to test for significant differences in opinion concerning whether superintendents should be compensated based on their performance or according to non-performance criteria. A significance level of .05 was established for the purpose of testing this hypothesis.
The first test of superintendents compared aggregate responses concerning current practices on questions one through seven, dealing with non-performance-based compensation with questions eight through twelve of the survey instrument dealing with performance-based compensation. The survey instrument may be referenced in Appendix A.

Table 7. Results of paired, two-tailed t-test of group means comparing performance and non-performance criteria for determining superintendent compensation in current practices

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>S.D.</th>
<th>Mean</th>
<th>t-Value</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current, Ques. 1-7</td>
<td>44</td>
<td>.71</td>
<td>2.91</td>
<td>.58</td>
<td>.5636</td>
</tr>
<tr>
<td>Current, Ques. 8-12</td>
<td>44</td>
<td>.76</td>
<td>2.84</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

In current practice perceptions, there was no significant difference in the aggregate response of superintendents to statements rating the relative importance of performance-based compensation when compared to non-performance-based compensation for superintendents. The null hypothesis that there is no significant difference between mean scores of superintendents when comparing their responses to non-performance based compensation criteria to performance-based compensation criteria on the two portions of the survey instrument led to a failure to reject the null hypothesis. A two-tailed probability level of .5636 indicates that there exists too high a probability level that differences obtained on the two different portions of the survey are a result of chance.

In the ideal practices for compensation, superintendents gave a higher ranking to performance-based criteria for compensation over non-performance criteria. A
paired, two-tailed t-test produced significant differences between superintendent
responses on the two sets of the criteria. A significance level of .05 was established for
the purpose of testing this hypothesis. Performance-based compensation criteria received
a significantly higher aggregate response than did non-performance-based compensation
criteria in the survey questions asked to determine perceptions of how the superintendent
should be compensated. Table 8 below portrays t-test results.

Table 8. Results of paired, two-tailed t-test comparing group means for performance
and non-performance criteria for determining superintendent compensation in
ideal settings

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>S.D.</th>
<th>Mean</th>
<th>t Value</th>
<th>2-tail Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ideal, Ques. 1-7</td>
<td>44</td>
<td>.50</td>
<td>3.36</td>
<td>-2.46</td>
<td>.018</td>
</tr>
<tr>
<td>Ideal, Ques. 8-12</td>
<td>44</td>
<td>.51</td>
<td>3.64</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Results lead to a rejection of the null hypothesis. The probability level is .018
that the different results obtained on the two portions of the survey instrument are the
result of chance.

Tests of significance were also performed on aggregate responses of board
presidents. A test of current practices of compensation for superintendents revealed a
significant difference in board presidents' perceptions of whether performance-based
criteria is more important than non-performance-based criteria in current practices of
superintendent compensation. Table 9 below represents the results of the measured
perceptions of board presidents. A significance level of .05 was established for testing this hypothesis. Results in Table 9 lead to a rejection of the null hypothesis. A significant difference exists between ratings of performance and non-performance-based criteria for current practices of superintendent compensation.

Table 9. Results of paired, two-tailed t-test comparing group means for performance and non-performance criteria for determining superintendent compensation in current practice

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>S.D.</th>
<th>Mean</th>
<th>t Value</th>
<th>2-tail Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current, Ques. 1-7</td>
<td>44</td>
<td>.58</td>
<td>2.93</td>
<td>-2.22</td>
<td>.0317</td>
</tr>
<tr>
<td>Current, Ques. 8-12</td>
<td>44</td>
<td>.90</td>
<td>3.23</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The null hypothesis that there are no significant differences in responses to the two sets of criteria for compensation of superintendents is not rejected. A probability level of .0317 exists that different results obtained on the two portions of the survey instrument are a result of chance.

When questioned on their perception of how superintendents ideally should be compensated, board presidents clearly gave higher ratings, when measured by aggregate responses, to performance-based criteria. A significance level of .05 was established for the purpose of testing this hypothesis. Results in Table 10 following lead to a rejection of the null hypothesis. A significant difference exists between ratings of performance and non-performance-based criteria for superintendent compensation in the ideal setting. A probability level of .0001 exists that survey differences resulted from chance.
Table 10. Results of paired, two-tailed t-test of group means for performance and non-performance criteria for determining superintendent compensation in ideal settings

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>S.D.</th>
<th>Mean</th>
<th>t Value</th>
<th>2-tail Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ideal, Ques. 1-7</td>
<td>44</td>
<td>.49</td>
<td>3.07</td>
<td>-6.05</td>
<td>.0001</td>
</tr>
<tr>
<td>Ideal, Ques. 8-12</td>
<td>44</td>
<td>.46</td>
<td>3.68</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The hypothesis that there are no significant differences between comparative ratings of criteria in current practice as opposed to ratings of criteria ideal in practices for superintendents' compensation is rejected.

**Board president and superintendent comparisons of current practices and ideal practices**

How do board presidents and superintendents responses to current practices compare with their responses to "how things should be" in an ideal setting? The null hypothesis is that there is no significant difference between the perceptions of either group concerning current compensation practices and how things should be concerning compensation for superintendents. The hypothesis tested was:

\[
H_0: \mu_{b/c} = \mu_{b/i} \\
H_A: \mu_{b/c} \neq \mu_{b/i}
\]

For board presidents the formula was:

\[
H_0: \mu_{b1/c} = \mu_{b1/i} \\
H_A: \mu_{b1/c} \neq \mu_{b1/i}
\]
The first test compared superintendent responses on questions one through seven - current practices - of the survey instrument to questions one through seven - ideal practices. Questions one through seven measured non-performance aspects of superintendent compensation.

Paired, two-tailed t-tests were used to test for significant differences in opinion of both groups to responses of the survey instrument. A significance level of .05 was established for the purpose of testing this hypothesis.

Results in Table 11 lead to a rejection of the null hypothesis that there is no significant difference between the perceptions of either group concerning current compensation practices and how things should be concerning compensation for superintendents. Superintendent perceptions concerning current practice related to how things are non-performance compensation differ significantly from their perceptions of ideal practice. A probability level of .0002 indicates that the probability is .0002 that differences obtained in survey results are a result of chance.

Table 11. Results of paired, two-tailed t-test of group means comparing current practices and ideal criteria opposed to performance-based superintendent compensation

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>S.D.</th>
<th>Mean</th>
<th>t Value</th>
<th>2-tail Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current, Ques. 1-7</td>
<td>44</td>
<td>.71</td>
<td>2.91</td>
<td>-4.14</td>
<td>.0002</td>
</tr>
<tr>
<td>Ideal, Ques. 1-7</td>
<td>44</td>
<td>.51</td>
<td>3.36</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The next test was to compare superintendent responses on questions eight through twelve. Questions 8-12 measured performance-based compensation as it is currently practiced and questions 8-12 measured beliefs concerning the relative importance of performance measures when considering how the superintendent should be compensated in the ideal situation. A significance level of .05 was established for this test.

When analyzing the results of this test, another significant difference in aggregate means is evident. Superintendents perceived that in an ideal setting, performance-based compensation should play a more important role than it does currently. Results presented in Table 12 lead to a rejection of the null hypothesis that there is no significant difference between the perceptions of either group concerning current compensation practices and how things should be concerning compensation for superintendents. Results were significant at a .0001 level of probability that resulting differences were obtained by chance.

Table 12. Results of paired, two-tailed t-test of group means comparing current practices and ideal practices of performance-based superintendent compensation

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>S.D.</th>
<th>Mean</th>
<th>t Value</th>
<th>2-tail Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current, Ques. 8-12</td>
<td>44</td>
<td>.76</td>
<td>2.84</td>
<td>-6.89</td>
<td>.0001</td>
</tr>
<tr>
<td>Ideal, Ques. 8-12</td>
<td>44</td>
<td>.50</td>
<td>3.64</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Board presidents on the other hand rated non-performance-based compensation less important for determining superintendent salaries in ideal circumstances. In a paired, two-tailed t-test of significant differences with a rejection level established at .05, results comparing aggregate means for current practices with "how things should be"
showed no significant difference between responses of board presidents on the two portions of the survey instrument. The measured differences indicated a probability of .0693 that the differences resulted from chance. This probability level, found to be greater than the established significance level of .05, lead to a confirmation of the null hypothesis.

Clearly, board presidents felt that in an ideal setting, non-performance based pay should not play an important role. This is evident when comparing mean results in Table 13 to results in Table 14.

Table 13. Results of paired, two-tailed t-test of group means comparing current practices and ideal criteria for determining superintendent compensation by board presidents.

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>S.D.</th>
<th>Mean</th>
<th>t-Value</th>
<th>2-tail Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current, Ques. 1-7</td>
<td>44</td>
<td>.58</td>
<td>2.93</td>
<td>-1.86</td>
<td>.0693</td>
</tr>
<tr>
<td>Ideal, Ques. 1-7</td>
<td>44</td>
<td>.49</td>
<td>3.07</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 14. Results of paired, two-tailed t-test of group means comparing current practices and ideal criteria for determining superintendent compensation by board presidents.

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>S.D.</th>
<th>Mean</th>
<th>t Value</th>
<th>2-tail Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current, Ques. 8-12</td>
<td>44</td>
<td>.90</td>
<td>3.23</td>
<td>-4.38</td>
<td>.0001</td>
</tr>
<tr>
<td>Ideal, Ques. 8-12</td>
<td>44</td>
<td>.46</td>
<td>3.68</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Performance-based compensation for superintendents had a significantly greater mean aggregate score when considered in an ideal setting. Results in Table 14 lead to a rejection of the null hypothesis that there is no significant difference between the perceptions of either group concerning current practices and how things should be concerning compensation for superintendents when the significance level is established at .05. The test reported in Table 14 yields a probability level of .0001 that differences in the aggregate mean results were a result of chance.

**Testing for mean differences**

The results of this research were combined with results of other research conducted by Behounek et al. in which 44 school systems were surveyed using the "School System Perceived Quality Assessment Instrument" developed at the Department of Professional Studies at Iowa State University. This quality review study was an attempt to survey the participating districts to determine the level of quality in the district as measured by criteria developed according to the standards of quality improvement drawn from the work of W. Edwards Deming. The surveys were administered to various employee groups and the employees within each group were randomly selected. Results of the survey were aggregated to produce one quality index rating per school district. The participating 44 school districts in the quality assessment study were the same as the 44 districts participating in this study.

A fourth hypothesis tested is that there is no significant difference in the school districts' perceived quality as measured by the quality review study when compared by three categories of relative strength of superintendent beliefs in non-performance-based
compensation and performance-based compensation. The hypothesis tested was:

\[ H_0: \mu_1 = \mu_2 = \mu_3 = \mu_4 \]

\[ H_A: \mu_1 \neq \mu_2 \neq \mu_3 \neq \mu_4 \]

Mean scores of the 44 school districts based upon the quality review study were compared based upon superintendent beliefs on the relative merits of performance-based compensation for superintendents in this study to determine if any significant differences existed among superintendent perceptions concerning the ideal practices for superintendent compensation. Superintendent strength of belief in non-performance-based compensation were categorized as low, moderate, or high based upon mean responses to the appropriate section of the survey instrument. A significance level of .05 was established for the purpose of testing this hypothesis.

The independent variable was the measured perception of the superintendents on the merit of performance compensation and the dependent variable was the current quality assessment of the various school systems.

The first test compared the school districts' quality ratings received in the quality review study by the categorical ratings of the superintendents of each school district rated as low, moderate, and high in their strength of belief in performance-based compensation in ideal practices of compensation. The results should be viewed with caution since the group sizes were quite small, as shown in Table 15 and 16. The category of low included mean scores from one to 2.59. The category of moderate included mean scores from 2.6 to four and the category of high included scores from 4.1 to five. These categories were arbitrarily selected for this research for purposes of comparison. A significance level of .05 was established for the purpose of testing this hypothesis.
Table 15. ANOVA summary table comparing quality rating of school systems by strength of belief of superintendent in non-performance based pay

<table>
<thead>
<tr>
<th>Source</th>
<th>d.f.</th>
<th>Sum of Squares</th>
<th>Mean Squares</th>
<th>F Ratio</th>
<th>F</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between groups</td>
<td>2</td>
<td>.11</td>
<td>.05</td>
<td>.61</td>
<td>.548</td>
<td></td>
</tr>
<tr>
<td>Within groups</td>
<td>41</td>
<td>3.53</td>
<td>.09</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>43</td>
<td>3.64</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Mean</th>
<th>S.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low belief in non-performance compensation</td>
<td>4</td>
<td>3.27</td>
<td>.35</td>
</tr>
<tr>
<td>Moderate belief in non-performance compensation</td>
<td>37</td>
<td>3.36</td>
<td>.28</td>
</tr>
<tr>
<td>High belief in non-performance compensation</td>
<td>3</td>
<td>3.18</td>
<td>.31</td>
</tr>
<tr>
<td>Total</td>
<td>44</td>
<td>3.34</td>
<td>.29</td>
</tr>
</tbody>
</table>

Inspection of Table 15 reveals no significant difference among superintendents. There is a probability level of .548 that differences in quality indexes when grouped by strength of belief in non-performance-based criteria were caused by chance.

When the ratings of the school districts in the quality review study are compared by the three categories of superintendent beliefs considered to be opposed to performance-based compensation, the results show no significant difference in mean scores of quality ratings of the various school systems involved.

There exists a probability level of .974 that differences reported from the surveys were a result of chance. The results of test one lead to a failure to reject the null hypothesis.

The second test compared school districts' quality rating received in the quality review study by the categorical ratings of the superintendents of each school district rated
as low, moderate, and high in their strength of belief in performance-based compensation in ideal practices for compensating the superintendent. The category of low included mean scores from one to three. The category of moderate included mean scores from 3.1 to 4.25 and the category of high included scores from 4.26 to five. These categories were arbitrarily established in this research for comparison purposes. Inspection of Table 16 reveals no significant difference among superintendents at the .05 level of significance.

When the ratings of the school districts in the quality review study are compared by the three categories of superintendent beliefs in performance-based compensation, the results show no significant difference in mean scores of quality ratings of the various school systems involved. The probability level that differences in results are the product of chance are .303. The results of test two lead to a failure to reject the null hypothesis.

Table 16. ANOVA summary table comparing quality rating of school systems by strength of belief of superintendent in performance-based compensation

<table>
<thead>
<tr>
<th>Source</th>
<th>d.f.</th>
<th>Sum of Squares</th>
<th>Mean Squares</th>
<th>F</th>
<th>F Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between groups</td>
<td>2</td>
<td>.21</td>
<td>.1</td>
<td>1.23</td>
<td>.303</td>
</tr>
<tr>
<td>Within groups</td>
<td>41</td>
<td>3.43</td>
<td>.08</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>43</td>
<td>3.64</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Mean</th>
<th>S.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low belief in performance</td>
<td>6</td>
<td>3.42</td>
<td>.22</td>
</tr>
<tr>
<td>compensation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Moderate belief in performance</td>
<td>35</td>
<td>3.35</td>
<td>.30</td>
</tr>
<tr>
<td>compensation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High belief in performance</td>
<td>3</td>
<td>3.10</td>
<td>.34</td>
</tr>
<tr>
<td>compensation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>44</td>
<td>3.34</td>
<td>.29</td>
</tr>
</tbody>
</table>
Although insignificant by the standards established for this study, the results do reveal interesting patterns. A trend is evident in the data. The group of superintendents with the highest mean response indicating a belief in performance-based compensation served in districts with the lowest mean quality index (3.10). The group of superintendents with the lowest mean response indicating a low belief in performance-based compensation served in districts with the highest mean quality index (3.42). As school systems are grouped by the categorized beliefs of the superintendent in performance-based compensation, the aggregate mean scores of the quality of the districts increase while the categorical beliefs of the superintendents in support of performance-based compensation decline. The results of test two lead to an examination of the data to determine if any significant relationship exists between the perceived quality of a school districts and the level of beliefs of the districts' superintendents in performance-based compensation.

**Test of relationship between beliefs and quality**

Does a relationship exist between the strength of beliefs of the superintendent in performance compensation and the level of perceived quality of the school system served? A fifth hypothesis tested is that there is no relationship between the level of perception of the superintendent in performance compensation and the perceived level of quality of the district. The hypothesis tested was:

- $H_0$: $p > .50$
- $H_A$: $p \geq .50$

In a test to determine if a relationship exists between the perceived quality of a school district and the strength of support of the superintendent for performance-based
compensation, a correlational test was performed to determine the level of the associational relationship. The Pearson product-moment correlation coefficient test was performed to determine the level of associational relationship. It is defined as:

\[ r = \frac{\sum_{i=1}^{N} (x_i - \bar{x})(y_i - \bar{y})}{(N-1)s_x s_y} \]

Results in Table 17 show a slight negative correlation between these two variables.

Table 17. Correlation table comparing quality rating of school systems by strength of belief of superintendent in performance-based compensation

<table>
<thead>
<tr>
<th>Count</th>
<th>Covariance</th>
<th>Correlation</th>
<th>R-Squared</th>
</tr>
</thead>
<tbody>
<tr>
<td>44</td>
<td>-.03</td>
<td>-.18</td>
<td>.03</td>
</tr>
</tbody>
</table>

A negative correlation of -.18 is determined to be "little if any". (Hinkle, et al. p. 118). In other words there is little, if any, relationship between districts' quality assessment ratings and the superintendents perceived support for performance-based compensation. Results lead to an acceptance of the null hypothesis.

One of the concerns of this study was to determine whether there was a relationship between the beliefs of the superintendent in performance compensation and the level of perceived quality of the school system served. The findings showed very little relationship between these two variables, in fact, a slight negative correlation of -.18 did exist. This may place credibility in W. Edwards Deming's theory that performance or merit pay has a detrimental effect on an organization.
CHAPTER V: SUMMARY

The primary purposes of this study were to determine the manner in which superintendents and school board presidents perceive that superintendents of selected Iowa school districts are currently awarded salary increases and to determine how superintendents should ideally be awarded salary increases. A third purpose of this study was to determine the perceived quality index of selected school districts in the state of Iowa. After determining the perceived quality index of these schools, still another purpose was to determine if there was a relationship between the perceived quality index of these selected Iowa school districts and the method of compensation for superintendents of the selected schools in Iowa.

A questionnaire was developed to assess the status and perceptions of performance-based compensation of school superintendents. The instrument listed twelve methods of compensating superintendents, and elicited perceptions about each. It was validated by a panel of nine practicing school administrators and researchers and twelve board members who are currently serving on boards of education or have recently served on school boards. Both the panel of practicing school administrators and researchers and the twelve board members indicated that the survey instrument was clear and would adequately serve the purpose for which it was developed. Reliability tests of instruments for performance based compensation indicate acceptance of the instrument utilizing guidance of Alpha limits as suggested by Nunnally and Durham. Results from the responses of the questionnaire concerning superintendent's compensation are presented below.
Descriptive Results

The current status of methods affecting superintendent compensation was elicited and few differences were found. Board presidents and superintendents agreed that increases or decreases in student population numbers have low support for determining salary increases for superintendents.

Board presidents and superintendents agreed that the teacher's union settlements have the most significant impact on salary increases. Contract settlement has the highest degree of impact on the compensation increase awarded to the superintendent.

Standardized or norm referenced tests were ranked as having the least impact on the salary of the superintendents by both superintendents and board presidents.

Job description performance was viewed as being an important factor for determining salary increases by board presidents but was viewed of only moderate importance by superintendents.

The ideal methods of compensation were sought by the instrument, and indicated both board presidents and superintendents agreed that changes in student population should have the least impact on superintendent pay increases. Slight or moderate increases in student population seem to have little effect on the superintendent's duties.

Even though board presidents felt that the amount of the contract settlements with teachers' union had the greatest impact on increased compensation for the superintendent, superintendents gave this only a moderate rating on how compensation increases should be given.

While superintendents felt increased compensation should be awarded in accordance with superintendents' salaries of school districts who are members of the same athletic conference, school board presidents gave this only a moderate rating.
Board presidents and superintendents rated the superintendent's performance in relation to the job description as the greatest single factor in determining how compensation increases should be awarded to the superintendent. Standardized tests were rated the least desirable by both groups.

**Inferential Statistical Results**

The first hypothesis stated that there was no significant difference between board presidents and superintendents concerning their perceptions of how superintendents are currently being compensated and the ideal basis of awarding increased compensation. A rating of one was given by a respondent to a belief statement with which the respondent strongly disagreed and a rating of five was given by a respondent to a belief statement with which the respondent strongly agreed. A rating of three was considered a moderate response. Unpaired, two tailed t-tests were used to test for significant differences at the .05 level of significance.

In the first portion of the survey (seven questions), respondents were asked to rate the importance of non-performance related criteria in establishing how salaries are currently awarded in districts. Results led to a failure to reject the null hypothesis. There were no significant differences between superintendents and board presidents in the strength of their beliefs concerning the relative importance of non-performance criteria in determining compensation increases for the superintendent.

In testing the responses dealing with Current Status (questions 8-12), an unpaired, two tailed t-test was again utilized to determine if a significant difference existed between the mean ratings of board presidents and superintendents in their beliefs concerning the importance of performance-based criteria in determining the manner in which salaries are currently determined for superintendents. The results reported lead to
a rejection of the null hypothesis. Significant differences were found between mean responses of superintendents and board presidents in their beliefs concerning the relative importance of performance-based criteria in current practice for determining compensation increases for the superintendent. In this study, superintendents placed a lower level of importance than did board presidents for compensation increases based upon job performance, which indicates that board presidents placed a greater emphasis on performance based criteria for determining salary increases than superintendents.

A third test was performed to determine if significant differences existed between superintendents and board presidents concerning their ratings of the relative importance of non-performance related criteria in determining how superintendents in ideal practice should be awarded salary increases. Again, results led to a rejection of the null hypothesis. A significant level of difference was determined between the two groups measured concerning their view of the relative importance of these non-performance related criteria in determining how superintendents ideally should be compensated.

A fourth test was performed to determine whether significant differences existed between superintendents and board presidents concerning their rating of the relative importance of specific performance related criteria in determining how superintendents ideally should be awarded compensation increases. These criteria included superintendent's performance on job description, achievement of district goals, school board evaluation, student achievement (outcomes), and standardized test scores. Results led to a failure to reject the null hypothesis at the .05 level. There was no significant difference between board presidents and superintendents in their beliefs of the relative importance of specific performance-related criteria in establishing how the superintendent's compensation should ideally be established.
A second hypothesis was tested to see if there was a significant difference between mean scores of superintendents when comparing their responses to non-performance based compensations criteria on the two portions of the survey instrument. In other words, do board presidents and superintendents perceive there to be no differences between performance-based pay and non-performance-based compensation for superintendents both in current practice and in the ideal practice? Using paired t-tests with a significance level of .05, the result was to accept the null hypothesis. There was no significant difference in the aggregate response of superintendents to statements rating the relative importance of performance based compensation when compared to non-performance based compensation for superintendents. However, a test of current practices of compensation for superintendents revealed a significant difference in board presidents' perceptions of whether performance-based criteria is more important than non-performance-based criteria. Clearly, board presidents preferred performance-based pay more than did superintendents.

In the ideal practices of compensation, however, superintendents gave a significantly higher ranking to performance based criteria for compensation over non-performance based criteria. Therefore, these results led to a rejection of the null hypothesis. When tests of significance were performed on responses of board presidents, there revealed significant differences in board presidents' perceptions in the ideal situation of whether performance-based criteria was more important than non-performance-based criteria. Thus, the null hypothesis that there are no significant differences in responses to the two sets of criteria for compensation of superintendents was rejected.
When questioned on their perceptions of how superintendents ideally should be compensated, board presidents clearly gave higher ratings to performance based criteria. This then led to the rejection of the null hypothesis, but there were no significant differences between comparative ratings of criteria in current practice as opposed to ratings of criteria in the ideal setting for superintendents' compensation.

Comparisons of Current Practices and Ideal Practices

The next portion of the study elicited responses from board presidents and superintendents comparing current practices of awarding compensation for superintendents with their responses to how things should be in an ideal setting. The null hypothesis stated that there was no significant difference between the perceptions of either group concerning current compensation practices and how things should be concerning compensation for superintendents. The first test compared superintendent responses on questions one through seven (current practices) of the survey instrument to questions one through seven (ideal practices). Again, paired two-tailed t-tests were used to test for significance at the .05 level. The results of this led to a rejection of the null hypothesis. Superintendents' perceptions concerning current practice related to non-performance based compensation differed significantly (.0002) from their perceptions of ideal practice. This meant that superintendents preferred to be compensated more on their performance than on non-performance criteria.

When comparing superintendents' responses on questions eight through twelve (current practice) with questions eight through twelve (ideal practice), a significant difference was evident. Superintendents perceived that in an ideal setting, performance based compensation should play a more important role than it does currently. Thus, this led to a rejection of the null hypothesis.
Again utilizing the paired, two-tailed t-test, board presidents rated non-performance based compensation less important than performance-based compensation for determining superintendents' salaries in ideal circumstances. Clearly, board presidents felt that in an ideal setting, non-performance-based compensation should not play an important role. Performance-based compensation for superintendents had a significantly greater mean aggregate score when considered in an ideal setting. This led to a rejection of the null hypothesis, indicating that board presidents would prefer to use performance ratings for determining superintendents' pay levels.

Quality Improvement Analysis

A fourth hypothesis tested was that there was no significant difference in the school districts' perceived quality as measured by the perceived quality instrument when compared among three levels of relative strength of superintendent perceptions in non-performance-based compensation and performance-based compensation.

By using the results of the "perceived quality index rating" of the 44 school districts and comparing these results to the superintendents' beliefs on the relative merits of the performance based compensation for superintendents, this study attempted to determine if any significant differences existed among groups of superintendents in perceptions concerning superintendent compensation.

The independent variable measured was the perception of the superintendents on the efficacy of performance-based compensation and the dependent variable was the current quality assessment of the various school systems.

The first test compared the quality ratings of the districts with the strength of beliefs of superintendents in non-performance-based compensation. In other words, is there a difference between the beliefs of superintendents in non-performance-based
compensation and the perceived quality rating of the school district? The study indicates no significant difference among superintendents at the .05 level of acceptance. The results lead to a failure to reject the null hypothesis.

The second test compared the school districts' quality rating received in the quality review portion of the study with the superintendents' beliefs in performance based compensation in ideal practices for compensating the superintendent. Again using the analysis of variance summary with a .05 level of acceptance, when the ratings of the school districts in the quality review study are compared by the superintendents' beliefs in performance based compensation, the results showed no significant difference in mean scores of quality ratings of the various school systems involved.

Finally, the fifth hypothesis tested was that there is no relationship between the level of agreement of superintendents for performance-based compensation and the perceived level of quality of the district. A correlational test was performed to determine the level of the associational relationship. A slight negative correlation of -.18 was found which shows little, if any, relationship between the two variables. This negative correlation means a slight inverse relationship showing that the higher the quality index of the school, the lower the superintendents supported performance based compensation. This then would be consistent with Deming's philosophy that performance-based compensation may have a negative effect on the quality of the organization.

Conclusions

There were a number of major purposes for this research. Among these were to determine the manner in which the superintendents and board presidents of selected school districts perceived that salary increases are granted, and to determine the methods
of reward for superintendents that are preferred by selected Iowa school superintendents and board presidents. Finally this study determined the perceived quality index of selected school districts in the state of Iowa and whether there was a relationship between the perceived quality index of Iowa school districts and the level and methods of compensation of Iowa superintendents.

The findings indicated a number of conclusions from the research. Among these were board presidents and superintendents agreed that increases or decreases in student population numbers should have little effect in determining compensation increases for the superintendent. Board presidents and superintendents also agreed that standardized testing to measure student academic achievement should not be used in awarding salary increases. There seemed to be little credibility by both groups in the use of these tests and therefore, such testing would not be criteria for awarding salary increases. Another area of agreement was that there seemed to be a feeling of equity or fairness in that board presidents and superintendents felt that what was awarded in the teachers' settlement should be awarded to the superintendent. Finally, board presidents perceived that duties listed under a job description are criteria which can be used for awarding salary increases. This would indicate that board presidents and, to a lesser degree, superintendents felt that if the superintendent performed according to the job description the salary should be increased accordingly.

Next, the study sought to determine if the perceived practices of board presidents and superintendents about how salary increases are awarded differ from current practices. Also the study sought to determine how board presidents and superintendents felt salary increases should be awarded in ideal circumstances. Conclusions drawn from this indicated that there seemed to be a feeling from both board presidents and superintendents that even though the student population may increase or decrease, the
duties and responsibilities of the superintendent remained fairly consistent. There was
definite agreement between board presidents and superintendents that the job description
should be considered most heavily when salary increases were awarded and standardized
testing should be least considered. It seemed that both groups agreed that performance in
relation to the job was an important and measureable factor to be considered for
compensation. There seemed to be little confidence on the part of board presidents and
superintendents for using standardized test scores as a measure of either student gains or
a means of awarding superintendent pay increases.

Another conclusion was that board presidents felt that the superintendent's pay
increases should be related to the settlement with the teachers to promote some sort of
equity or fairness. Superintendents tended to somewhat agree with this method of
awarding salary increases. However, there was a feeling among some superintendents
that because of the nature and responsibilities of the superintendency, salary increases
should be considered separately from the teachers' settlement.

Another finding was that there was a significant difference in beliefs between
superintendents and board presidents concerning non-performance and performance-
Based criteria for determining salary increases. Board presidents supported performance-
Based criteria more heavily than did superintendents for awarding increased salary
compensation. Clearly, board presidents were interested in how well superintendents
were doing the job they were hired to do as so indicated by the rating given to the
superintendent's job description as criteria for awarding superintendent salary increases.
Superintendents placed a significantly lower level of importance than did board
presidents for compensation increases based upon job performance even though they felt
that in an ideal setting, performance-based compensation should play a more important
role than it currently plays.
Political movements favoring performance-based or merit pay would find little or no support for such practice from this study. Research findings should be vigorously pursued for practical significance and implications for the field of education.

Finally this study concludes that there would be some credibility in W. Edwards Deming's belief that the quality of the organization may be negatively affected by performance based pay. Although not a strong finding, there is a slight negative correlation between the awarding of salary increases based upon performance criteria and the perceived quality rating of the school district. This may indicate that Deming may be correct in stating that salary increases based upon performance could negatively affect an organization. If the conclusion can be drawn that performance or merit pay may negatively affect the quality of an organization, then use of performance or merit pay as a reward system must be carefully scrutinized.

Recommendations for Further Study

Following this study, it would seem necessary to test the questionnaires in other studies to check for validity and reliability of the instruments used by Bax, Poston, and this study. Since the superintendent's salary survey was used on a small sample of the population, more extensive testing of this instrument for research purposes may be beneficial.

The School System Perceived Quality Assessment Instrument was used on a much larger sample of the population; therefore, reliability and validity may be significantly greater. A study which would certainly be of value would be to see if there is a correlation between the quality rating of the school and the academic achievement of students.
Finally, the results of the research seem to confirm, at least moderately, W. Edwards Deming's statement that performance and/or merit ratings or pay may negatively affect the quality of an organization. Although this research did not find a strong correlation, a weak inverse correlation did exist, which may affirm Deming's theory. Further research in this area would seem to be valuable.

Other topics or questions related to this study which would seem to be of interest would be:

1. What are the effects on superintendent's motivation for compensation, or of what importance is pay to the superintendent?
2. How should comparable or neighboring districts be used in salary determination, i.e., is compensation more of an area or regional factor?
3. Is district size important for compensation, i.e., is the superintendent's job fairly consistent regardless of the size of school?
4. How does the negotiated settlement for teachers affect superintendent salary increases?
5. What are actual feelings about standardized testing? Is there a universal feeling that standardized testing is not valid or that student performance is not important?
6. What are superintendent's feelings about performing the job description? Do some superintendents feel so confident in their job performance that they should be paid accordingly?
7. Determining the quality rating of a school could be an important study in itself in determining the feelings of the clientele in how well the school is serving the needs of the public.
8. How are performance ratings of superintendents and methods used in superintendents' evaluations related? Are superintendents evaluated more on subjective or objective criteria?

These are only some of the related areas which merit further research on the topic of awarding salary increases for superintendents. In itself, the awarding of salary increases still seems to be a vague process and fairly inconsistent in the manner in which it is done.

Performance-based pay for superintendents may have a negative effect on the quality of the organization as found in this study. This could be researched to a greater degree. However, the study seems to indicate, even though it is not a substantially strong finding, that W. Edwards Deming's beliefs about performance or merit pay may be accurate and performance-based compensation does indeed negatively affect the system.
BIBLIOGRAPHY


Iowa Legislative Council (1984). Papers from Iowa Legislative Session of 1984, p. 35.


APPENDIX

CURRENT AND PREFERRED METHODS
OF AWARDSING SUPERINTENDENT SALARY INCREASES

Superintendents

Demographic Information

Board Presidents

Male
Female

Highest Degree Achieved

B.S. (B.A.) (fill in blank)
M.S. (M.A.)
M.S. (M.A.) (fill in blank)
Specialist or 6th Year Certificate
Specialist or 6th Year Certificate+
Ph.D. (A.B.D.)
Ph.D.

Male
Female

Number of years of
School Board Service
to this district
(count this year as one)

Number of years as
School Board President
(count this year as one)

Number of years as Superintendent
(Count this year as one)

Size of District (K-12)

Under 250
250-499
500-749
750-999
1000-1499
1500-1999
2000-3499
3500 +

Size of District (K-12)

Under 250
250-499
500-749
750-999
1000-1499
1500-1999
2000-3499
3500 +

Each year, most Superintendents enter into some sort of salary negotiations with the School Board to determine a salary increase for the next school year. In your best judgement, how would you weigh these factors in determining the superintendent's salary increase in your district:

<table>
<thead>
<tr>
<th>Factor</th>
<th>Not at all</th>
<th>Somewhat</th>
<th>Strongly</th>
<th>Heavily</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Length of Service to District</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>2. Increased Formal Education (In-Service Training)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>3. &quot;Cost of Living&quot;</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>4. New money award to district/allowable growth</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>5. Teachers' negotiated settlement</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>6. Salaries of other superintendents in conference</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>7. Increase/decrease in student population</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>8. Performance on superintendent's job description</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>9. Achievement of district goals/long range goals</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>10. School Board Evaluation</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>11. Student achievement (outcomes)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>12. Standardized Test Scores Results</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>13. Other</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>
In rank order, with #1 being the first choice, please list the three major factors currently being used to determine the superintendent's salary increase.

1. 
2. 
3. 

In your best judgment, what would you prefer Superintendents' annual salary increase be based upon.

<table>
<thead>
<tr>
<th>Number</th>
<th>Description</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>No Opinion</th>
<th>Agree</th>
<th>Strongly Agree</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Annual salary increases for the Superintendent should be related to the length of service to the district.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>2</td>
<td>Annual salary increases for the Superintendent should be related to increased formal education or in-service training.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>3</td>
<td>Annual salary increases for the Superintendent should be closely related to “the cost of living” increase.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>4</td>
<td>Annual salary increases for the Superintendent should be related to district “new money”? allowable growth received.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>5</td>
<td>Annual salary increases for the Superintendent should be related to the teacher settlement.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>6</td>
<td>Annual salary increases for the Superintendent should be related to salaries of other Superintendents in schools of similar size.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>7</td>
<td>Annual salary increases for the Superintendent should be related to the increase in student population.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>8</td>
<td>Annual salary increases for the Superintendent should be related to performance on the Superintendent's job description.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>9</td>
<td>Annual salary increases for the Superintendent should be related to the achievement of District Goals/Organizational Goals.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>10</td>
<td>Annual salary increases for the Superintendent should be related to evaluations from the School Board.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
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</tbody>
</table>
11. Annual salary increases for the Superintendent should be related to student achievement (outcomes).

12. Annual salary increases for the Superintendent should be related to standardized test scores.

13. Other _____________________________

In rank order, with #1 being the first choice, please list the three factors which you would prefer to have considered for the Superintendent's annual salary increase.

1. _____________________________
2. _____________________________
3. _____________________________
VALIDATION PANEL OF QUESTIONNAIRE
CONCERNING PERFORMANCE-BASED COMPENSATION

Current Practicing Superintendents

Mr. Richard D. Turner, Superintendent
East Union Community Schools

Mr. Don Brichacek, Superintendent
Interstate-35 Community Schools

Mr. Phil Burmeister, Superintendent
Mount Ayr Community Schools

Mr. Jerry Hoffman, Superintendent
Wayne Community Schools

Dr. Cal Owens, Superintendent
Poplar Grove Public Schools

Mr. Tom Spear, Superintendent
Central Decatur Community Schools

Others:

Dr. Gene Fokken
Retired Superintendent

Dr. Anton Netusil
Iowa State University Professor
Research and Evaluation

Dr. James Stone
Retired Assistant Superintendent
School System Perceived Quality Assessment Instrument
Department of Professional Studies - Iowa State University

To the Participant: This instrument request information from you and your colleagues about perceptions of the level of quality found in your school system's operations and activities. Please provide the information requested below, and complete the rating section on the next two pages as instructed below. All you need to do when you have completed this instrument is to fold it, tape it closed, and drop it in the U.S. Mail. Thanks for your help and cooperation. Your responses will help in future efforts to improve education.

Part I: Demographic Information

Please provide the following information:

1. Position:  ___ Teacher  ___ Support Staff  ___ Administrator  ___ Superintendent  ___ Board  ___ Other
2. Home Annual Income:  ___ Under $10,000  ___ $10,000-29,999  ___ $30,000-49,999  ___ Over $50,000
3. Gender:  ___ Male  ___ Female
4. Age:  ___ Under 18  ___ 18-30  ___ 31-55  ___ 56-70  ___ Over 70
5. Level of Education:  ___ Less than B.A. degree  ___ Master's degree  ___ Doctorate degree
6. Years Experience in Current/Similar Job:  ___ Under 5 yrs  ___ 5-10 yrs  ___ 11-25 yrs  ___ 25 yrs. or more

Part II: Rating of School System Quality Components

Directions: Please state your judgment of the current situation and the desired or ideal situation in your school system. Consider the statements on the following two pages carefully, and indicate the degree to which you feel each statement describes your school system. Note that you are asked to respond to each statement twice: once in the current situation column, and once again in the desired situation column.

Definitions:
1. Current Situation: What is the status of your school system now in terms of the statement -- what do you see is the present state of affairs on this item?
2. Desired Situation: What should the status of your school system be in terms of the statement -- what would you like to see or find in your system on this item?

Please respond in both columns (current and desired) on each statement, and mark only one response for each statement in each column.

RESPONSES ARE STRICTLY CONFIDENTIAL
AND WILL BE REPORTED ONLY IN SUMMARY FORM BY DISTRICT

After completing the instrument, please fold and tape it closed, and drop it in the U.S. Mail. Thank you for your assistance and cooperation!

Please open the instrument, and proceed with the next section.
School System Perceived Quality Assessment Instrument

Directions: Please rate each of the following statements. The rating is:

A = I agree strongly.
B = I agree.
C = I am not sure.
D = I disagree.
E = I disagree strongly.

Please indicate to what extent you agree or disagree with each item. Respond to both columns on each item, and mark only one response in each column.

<table>
<thead>
<tr>
<th>CURRENT</th>
<th>DESIRED</th>
</tr>
</thead>
</table>

**A. Leadership**

1. District-level management is committed to improving quality.  
2. The school system's policy or statements on quality are clearly communicated to all employees.  
3. District-level management is visibly involved in and actively promotes quality within the school system.  
4. District-level management is recognized outside the school district for promoting quality.  
5. The school system supports employees and students to promote quality awareness with community, state, national, educational, business and other organizations.  
6. School system client focus and quality values are integrated into day-to-day leadership of all operations.

**B. Information and Analysis**

7. Assessment data are used to improve curriculum, instruction, and operations of the system as a whole.  
8. Information is communicated in a systematic manner.  
9. Adequate procedures are in place to collect data about organizational performance from a variety of sources.  
10. Decisions are made based upon collected data and analysis of results.  
11. Improved quality has been the result of data collection and analysis.  
12. The quality of programs and services is compared with those in other school systems.
C. Strategic Quality Planning

13. The system planning process is integrated into daily operations and involves all administrative, instructional, and support areas.

14. Quality tools and techniques are used in the normal planning process.

15. Each department or unit has a mission, and has identified key processes and client needs.

16. Continuous improvement is emphasized in district strategic planning efforts.

17. Information from staff and community is used for strategic planning.

18. Cooperative teams are formed and used in strategic planning involving all levels of employees.

D. Human Resource Development and Management

19. Quality awareness training is made available to all employees on a regular basis.

20. Employee teams are regularly used to solve district problems.

21. Empowerment, risk taking and innovation are encouraged and supported.

22. There are opportunities for individuals and groups to contribute to quality goals and plans.

23. Individualized professional development plans are used in staff development and training.

24. Employees are involved in developing their own performance and recognition systems.

25. Employee satisfaction surveys are conducted on a regular basis.

E. Management of Process Quality

26. Validation of program performance and actual results is done regularly.

27. Articulation among all grade levels in curriculum planning and delivery is encouraged and implemented.

28. Procedures have been established to reduce student dropout rates.

29. Advisory committees are extensively used to maintain up-to-date program content and processes.

30. Reports and findings about results and performance are shared freely with the board, staff, and the community.

31. Quality or performance audits of programs and courses are conducted regularly.
F. Quality and Operational Results
32. Major trends of key programs and services are identified and monitored over time.
33. The number of purchased services and consultant assistance contracts have increased over time.
34. Graduates are continuously tracked and information about their placement and status is analyzed.
35. Strategies are in place to diagnose continuously the skills and ability levels of students in key learning areas.
36. The quality of support and services (equipment, instructional resources, training, etc.) provided is improving.
37. The quality of the school district is compared regularly with other schools' program results and performance.

G. Client Focus and Satisfaction
38. Procedures for handling inquiries and complaints are well established and operate smoothly.
39. Surveys are regularly used to obtain student and parent feedback.
40. Post-secondary institution and employer satisfaction with graduates are monitored on a regular basis.
41. Clear standards are established and employees are taught skills to effectively interact with parents, students, employers, and citizens.
42. Future student curricular and program needs are identified and tied to curriculum development.
43. Information is gathered frequently to monitor progress and improvement from year to year in all areas.
44. Special training in helping clients is provided to all professional and support staff on a regular basis.
45. Client satisfaction with this school district's performance is improving over time.

Thank you for your help and cooperation!
**Instrument Validation Panel**  
*Perceived Quality Instrument*

<table>
<thead>
<tr>
<th>NAME</th>
<th>POSITION/TITLE</th>
<th>DEPARTMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Dr. J.C. Dugger</td>
<td>Associate Professor &amp; Chair</td>
<td>Industrial Education and Technology</td>
</tr>
<tr>
<td>2. Dr. D.A. Johnson</td>
<td>Assistant Professor</td>
<td>Industrial Education and Technology</td>
</tr>
<tr>
<td>3. Dr. S.K. Drake</td>
<td>Manager of Training/Development</td>
<td>Personnel</td>
</tr>
<tr>
<td>4. Dr. R.P. Manatt</td>
<td>Professor</td>
<td>Professional Studies in Education</td>
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<tr>
<td>5. Dr. L.H. Ebbers</td>
<td>Professor</td>
<td>Professional Studies in Education</td>
</tr>
<tr>
<td>6. Dr. G.W. Chase</td>
<td>Associate Professor</td>
<td>Civil and Construction Engineering</td>
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<tr>
<td>7. Dr. R.W. Stephenson</td>
<td>Associate Professor</td>
<td>Statistics</td>
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<tr>
<td>8. Dr. P.W. Hetland</td>
<td>Manager TQM</td>
<td>Business and Finance Administration</td>
</tr>
<tr>
<td>9. Dr. Carolyn Heising</td>
<td>Professor</td>
<td>Industrial and Manufacturing Systems Engineering</td>
</tr>
<tr>
<td>10. Dr. Elizabeth Hoffman</td>
<td>Dean</td>
<td>Liberal Arts and Sciences Admin.</td>
</tr>
<tr>
<td>11. Mr. Don Bjelland</td>
<td>Training/Safety Specialist</td>
<td>Facilities Planning and Management</td>
</tr>
</tbody>
</table>