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Efficacy characteristics of principals in low- and high-performing Michigan elementary schools

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EFFICACY CHARACTERISTICS OF PRINCIPALS IN LOW- AND HIGH-PERFORMING MICHIGAN ELEMENTARY SCHOOLS

By

William Frank Lipsett

A DISSERTATION

Submitted to
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ABSTRACT

EFFICACY CHARACTERISTICS OF PRINCIPALS IN LOW- AND HIGH-PERFORMING MICHIGAN ELEMENTARY SCHOOLS

By

William Frank Lipsett

The writer hypothesized that principals of high-performing Michigan elementary schools were more efficacious than principals of low-performing schools. Efficacy was defined as the extent to which one believes he/she can produce a desired outcome. State-mandated criterion-referenced tests were used to determine performance levels. Schools where 90% or more of the students achieved minimum mastery over a three-year period were identified as high-performing; schools where the percentage was below 75% were characterized as low-performing.

Two questionnaires were developed to assess Ability, Confidence, and Importance efficacy levels. One questionnaire was based on the effective-schools literature, and the second was based on Gibson's Teacher Efficacy Questionnaire. The final sample included responses from principals in 45 low-performing, 59 in-between, and 55 high-performing schools--a return rate of 60.5%. Four principals in high-performing schools and four in low-performing schools were also interviewed using a critical-incidents format.

Principal-component factor analysis, discriminant function analysis, and one-way ANOVA failed to identify significant differences among the three groups. Mean score differences by item were substantiated by interview data from principals in the high-performing sample but not for principals in low-performing schools. Questionnaire responses from principals in low-performing schools suggested they were both competent and confident conducting school needs assessments, yet none of the four principals interviewed was involved in such activities. Conversely, questionnaire data from principals in the high-performing sample indicated they believed their behavior had an effect on their staff; this was confirmed by the interviews. The findings suggested that principals in high-performing schools, because they engaged in the behaviors listed in the questionnaires, were more knowledgeable and realistic about their performance than were their colleagues in low-performing schools, who overestimated their Ability, Confidence, and Importance efficacy levels. The interview data confirmed that principals in high-performing schools were more knowledgeable and explicit regarding their efficacy characteristics and more active in leadership activities than were their colleagues in low-performing schools.

ACKNOWLEDGMENTS

Individuals, like institutions, can be compared to a collection of circles. Each circle determines its own "ethos"--one of inclusion or one of exclusion. I am indebted to the College of Education at Michigan State University for creating and maintaining an environment of inclusion that has made me a better communicator, a better administrator, a better person, and, above all, a better educator.

A number of individuals created, nurtured, provided assistance, and supported the requisite teaching/learning environment that contributed to this growth. Included in this list are members of my family--my wife, Phyllis, and our two children, Adina and Christian. I am also indebted to my mother and father, who continuously stressed hard work, high expectations, and the need to learn. Also of importance were an aunt and uncle, Dr. and Mrs. Murray Wannamaker, who were instrumental in my attending college following graduation from high school. Also included were a number of graduate students, two of whom I wish to recognize: Dr. Camille Donnelly and Dr. Marianne Higgins.

At the university level, there were many whose circles enriched and sustained my personal pursuit of excellence. There were members of my committee: Dr. Larry Lezotte, who challenged and crystallized

my thoughts about education; Dr. John Suehr, who taught me to recognize my weaknesses; Dr. Janet Alleman, who was always there to encourage; and Dr. Joseph Straabraher, who made me a better communicator. And there were others. Dr. Fred Ignatovich provided stimulation and support, and he assisted me in so many ways. Dr. Phil Cusick made me feel like one of the faculty. Dr. Sam Moore afforded me an opportunity to expand my horizons. Dr. Jim Costar, by his buoyant and encompassing character, was equally helpful. Dr. Brian Rowan, by his interest, also enriched my experience. And there were the secretaries, who were cordial and helpful.

In closing, there were many, many circles. Within each I found someone who extended a hand and welcomed my participation. The highest compliment I can make is to say that all are friends. To each I say, "The Very Best!."

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CHAPTER I

INTRODUCTION TO THE STUDY

Introduction

Most current leadership models characterize principals along a continuum (Leithwood & Montgomery, 1982; Sergiovanni, 1984). At one end of the continuum, principals are described as managers; at the other, they are seen as goal-directed visionaries. The current literature also has indicated that some principals are actively involved in school-improvement agendas, whereas others are not.

Why such differences exist has yet to be explained. One hypothesis is that differences in principal behavior result from the principals' cognitive mediation of past experiences. For example, is it possible that visionary principals have processed information arising from past experiences differently from their more managerial-oriented colleagues? Questions of interest concern effective leadership and cognitively processed efficacy characteristics. Why do some principals and not others communicate their goals for improvement? Why do some and not others review academic progress with school personnel? Why do some and not others initiate school-wide in-service programs? And why do some and not others accept the status quo rather than create self-renewing organizations?

In their synthesis of effective-schools research, Leithwood and Montgomery (1982) suggested that principals attend to different behavioral sets. It might very well be that the less-effective principal behaviors described by Leithwood and Montgomery characterize individuals who, based on past experiences, have come to believe that learning is not the primary goal of the school, who for some cognitively based reason are unable to create a vision for their buildings, and still others who are afraid to become involved with any situation involving a degree of risk. It might also be that the debilitating or empowering images principals possess are based more on how they have processed information than on the information itself. With this possibility in mind, the present investigation was undertaken to determine whether principals in low-, in-between, and high-performing Michigan elementary schools differed in their belief that they could influence defined school outcomes (efficacy characteristics). The researcher hypothesized that principals in high-performing schools would be more efficacious than their colleagues in low-performing schools.

Problem Statement and Rationale for the Study

Perusal of the administrative leadership literature indicated that much of the research in this area has "epitomized the Baskin-Robbins character" and has been based on "raw empiricism of meager interest to scholars and practitioners alike" (Bridges, 1982, pp. 17-18). Researchers also have noted that the results of one study frequently are at odds with those of another (Behling & Champion,

1984), which has led many practitioners to "underestimate the importance of the principal as an agent affecting school outcomes" (Greenfield, cited in the AASA Critical Issues Report, 1983, p. 8). Partly because of the dominance of survey questionnaires and an environmental focus, researchers seeking to understand the principalship often have limited their focus to the subjects' external environment while "dismissing as irrelevant any unique characteristics of the person that could not be explained by physical characteristics or by physical events in the person's history" (de Charms, 1976, p. 3). This perspective, based as it is on the premise that individuals have little, if any, control over their behavior, has resulted in the reduction of all behavior to stimulus-response sequences.

Countering the traditional behaviorist point of view has been a layman's orientation that has steadily gained acceptance in the professional community. According to this orientation, individuals are unique entities who indeed think about, and consciously control, their overt behavior. This "new" perspective, which has been promulgated by social psychologists, suggests that behavior is internally directed, intentionally caused, and best explained by investigating internal cognitive processes.

Need for the Study

The need for a cognitive-oriented investigation of principal behavior arises from two sources. First, although a growing body of literature has confirmed that principals do differ in terms of their

behavior, no investigation has been undertaken to discover what mediating thought processes accompany such behavioral differences. Using the efficacy construct provides an opportunity to explore leadership from a fresh perspective. Indeed, exploring cognitive efficacy processes to determine how principals think about issues and their ability to perform given behavior(s) might prove valuable in expanding an understanding of the principalship. To elaborate, exploring cognitive efficacy processes (ability, expectancy, and importance dimensions) affords researchers an opportunity to discover unique mental processes that account for behavioral differences. In some instances, differences can be explained by the self-perceived presence or absence of specific skills, by varying perceptions of one's chance of success when performing a specific behavior, and/or by the importance principals assign to a specific set of behaviors.

Second, there is a pressing need to strengthen leadership investigations to meet internal and external school-reform agendas. As of January 1983, 2,378 schools in 875 districts in 35 states were involved in school-improvement projects, indicating that the general population is expecting more in the way of reform from school personnel (Miles, Farrar, & Neufeld, 1983). Associated with the press for change is the knowledge that previous efforts to change schools have been considered failures (Goodlad, 1983; Krajewiski, 1982), which in turn has created an expectation to do better. A central figure in the change effort is the principal. Hall, Hord, and Griffin's (1984) conclusion that "it appears that the most

important factor to explain the quantity and quality of change in schools is the concern of the principal and what the principal did or did not do" (p. 95) emphasizes the need to determine the extent to which principals' cognitive processes influence their behavior.

In summary, if one acknowledges that principals are important, that research descriptions of effective principal behaviors have become more consistent (e.g., Blumberg & Greenfield, 1980; Croghan, Lake, & Schroder, 1983: Goldhammer et al., 1971; Gregory, 1980; Hallinger & Murphy, 1985; Leithwood & Montgomery, 1982; Lipsitz, 1984; Russell, Mazzarella, & Maurer, 1985; Wilson, 1982), and that behavior is cognitively mediated and controlled, it follows that an exploration of principals' attitudes and behaviors using the efficacy construct is a worthy undertaking.

Purposes of the Study

The major purposes of the current investigation were (a) to determine whether principals in high-performing Michigan elementary schools are more efficacious than principals in low-performing schools, (b) to address measurement issues associated with the determination of efficacy levels, and (c) to use interview data to generate rich descriptions of differences in efficacy between principals in low- and high-performing schools. With regard to the measurement issue, researchers on efficacy in an educational setting have been moderately successful in assessing efficacy levels by means of questionnaires. Yet doubt continues to exist about whether questionnaires can adequately measure efficacy levels. It has been

claimed that generalized questionnaire items as opposed to situation-specific items can identify real differences between individuals in terms of their competence and confidence levels. However, all researchers on efficacy in an educational setting have used interview data to support questionnaire results. Interview data have provided the most convincing evidence that behavior is grounded in cognitive orientations that result in the endorsement or avoidance of specific behaviors.

In this study, three efficacy dimensions were assessed using both situation-specific and generalized items. The three efficacy dimensions included (a) the individual's assessment of his/her ability to perform a given behavior (ABILITY LEVEL), (b) the degree of probable success the principal expected in performing a given behavior (CONFIDENCE LEVEL), and (c) the value the principal placed on the behavior itself (IMPORTANCE VALUE). In addition, a structured interview guide was employed to discover principals' cognitive perceptions in the goal, strategy, factor, and decision-making domains.

The Efficacy Construct

The feasibility of an efficacy-focused investigation was confirmed by the fact that a number of writers have supported the hypothesis that individual belief and competence systems direct behavior. For instance, Watson (1976) maintained that long-standing belief and value systems interfere with one's objective review of an innovation. Berman and McLaughlin (1977) also confirmed the premise

that behavioral change and the degree of change are both correlated with belief and competence characteristics. Fullan (1982) stated that positive attitudes were consistently related to the success of effective school-improvement projects. In 1983, Heckman, Oakes, and Sirotnik suggested that assumptions and beliefs had latent and manifest effects on behavior. And from a more philosophical perspective, Edmonds (1978) suggested that internal cognitive assessments are important behavioral determinants. He stated,

> We can, whenever and wherever we choose, successfully teach all children whose schooling is of interest to us. We already know more than we need to do that and whether or not we do it must finally depend on how we feel about the fact that we haven't so far. (p. 35)

In 1959, White postulated that individuals are motivated by an internal desire to interact with their environment. He also maintained that this desire is developed through the cumulative acquisition of knowledge and experience. Seven years later, Rotter (1966) suggested that individuals engage in only those behaviors in which they expect to achieve success and that such assessments are made on the basis of past reinforcements. In 1968, de Charms theorized that some individuals are externally motivated by physical or external events, whereas others, namely those who act on the basis of a personal commitment, who are intrinsically motivated, and who see themselves as the cause of their own behavior, are internally or cognitively directed. Finally, Bandura (1977), the father of the "newer" social-psychologist orientation, stated that as a result of enactive, vicarious, exhortive, and emotive

experiences, individuals develop generalized and situation-specific belief systems that define such behavioral variables as effort, engagement, and persistence.

Bandura conceptualized efficacy as a two-dimensional construct based on observational and performance learning. Together, both dimensions establish efficacy levels that direct and determine subsequent behavior, and both are the result of cognitively processed, situation-specific learning experiences. Bandura defined the Efficacy Expectation or competence dimension as "the conviction that one can successfully execute the behavior required to produce the outcome"; he defined the Outcome Expectation or performance dimension as "a person's estimate that a given behavior will lead to certain outcomes" (p. 193). Bandura's self-efficacy model is shown in Figure 1.1.

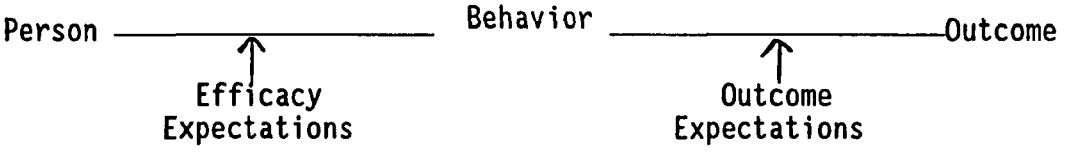

Figure 1.1: Bandura's self-efficacy model.

White (1959), Rotter (1966), de Charms (1968), and Bandura (1977) believed that individuals process and retain information that influences their future behavior. They also agreed that individuals learn from experience, by observing others in successful and unsuccessful situations, and by being persuaded that they can perform a given behavior. Bandura was the first researcher to

categorize data collection and retention under two major headings: (a) self-efficacy or competence information and (b) behavioral efficacy or confidence information. Saltzer (1982) hypothesized that, in addition to cognitively processing self-efficacy and behavioral-efficacy information, individuals also evaluate the subjective value associated with performing a specific behavior. Saltzer labeled this third efficacy-information dimension an outcome-value component.

That cognitive processes affect behavior was confirmed in four teacher-efficacy studies. In the first, a Rand study, Armor et al. (1976) assessed efficacy levels by asking 356 elementary school teachers to answer the following questions:

1. When it comes right down to it, a teacher can't really do much [because] most of a student's motivation and performance depends on his or her environment.

2. If I try really hard, I can get through to even the most difficult or unmotivated students. (p. 23)

Attempting to account for differences in student achievement, Armor et al. concluded, "The more efficacious the teacher felt (the more the teacher believed that he or she had the capacity to produce a desired effect), the more their students advanced in reading achievement" (p. 23). The authors also confirmed the "importance of predispositional factors (efficacy levels) as the basis for effective teaching" (p. 24).

The second efficacy study, completed by Berman and McLaughlin (1977), added credibility to Armor et al.'s hypothesis that cognitive processes affected student achievement and teacher

behavior. Looking at change processes and using the Rand items to measure efficacy levels, Berman and McLaughlin demonstrated that, in addition to influencing student achievement, the degree and persistence of changed teacher behavior were significantly related to teacher efficacy levels. Both questions posed by Armor et al. have been accepted by many researchers as legitimate efficacy measures, the first item assessing self-efficacy (personal competence) and the second measuring expectancy efficacy (performance confidence).

The premise that an individual's current behavior is best understood and explained by assessing self-efficacy related to competence and confidence levels was reinforced in a major National Institute of Education (NIE) investigation, "A Study of Teachers' Sense of Efficacy," undertaken by Ashton, Webb, and Doda (1982, 1983). The researchers concluded that a teacher's sense of efficacy was significantly related to teacher classroom behaviors and student achievement scores, as measured by the Metropolitan Achievement Test. The major purposes of the Ashton et al. study were to "(a) develop a conceptual framework for understanding the nature, antecedents, and consequences of efficacy attitudes in teachers, and (b) to suggest further research necessary to reject, elaborate, and/or extend the conceptual framework." The researchers employed a number of approaches to assess efficacy levels, including the two Rand items, an expanded efficacy questionnaire, a stress question used as a proxy for efficacy, a vignette questionnaire, Rotter's

(1966) Locus of Control instrument, and Rose and Medway's (1981) Teacher Locus of Control instrument. Ethnographic data were also collected, and these data led Ashton et al. to confirm Armor et al.'s (1966) and Berman and McLaughlin's (1977) finding that teachers' personal assessments of their competence and confidence levels influenced their classroom behaviors.

The fourth teacher-efficacy study identified in a 1986 ERIC search was completed by Gibson and Dembo (1984). Using both open- and closed-ended methods of measurement, the researchers developed a 30-item Teacher Efficacy Scale that they claimed verified Bandura's situation-specific self-efficacy theory. Gibson and Dembo confirmed that their two efficacy constructs, Teaching Efficacy and Perceived Personal Efficacy, were distinct dimensions ($r = 0.19$). Further, they concluded that teachers' instructional behaviors were differentiated by their efficacy levels.

One other investigation of note was a doctoral study by Patterson (1984), who attempted to assess efficacy levels of California school principals. The researcher used the length and structure of administrators' communication sequences as a proxy for efficacy. He determined that effective principals used longer sentence structures when communicating with others than did less-effective principals. Neither Bandura's nor any of the teacher-efficacy investigations was cited in Patterson's report, which leads one to question its quality.

Operationalization of the Efficacy Construct

Armor et al. (1976), Berman and McLaughlin (1977), Ashton et al. (1982, 1983), and Gibson and Dembo (1984) all agreed with Bandura's perspective that the efficacy construct is two dimensional, consisting of a competence and a confidence domain. Another theorist, Saltzer (1982), suggested that a third component, outcome value, be included in subsequent efficacy investigations. Semantic differences exist in how the competence and confidence dimensions have been defined, and these are noted in Table 2.1, Chapter II. At the same time, social psychologists have consistently used the terms "competence," "confidence," and "outcome value" to describe the efficacy construct. In the current investigation, the terminology was modified such that the word "competence" was replaced by the word ABILITY, the CONFIDENCE terminology was retained, and the term "outcome value" was replaced by the word IMPORTANCE.

Assumptions

The writer assumed that one's efficacy level is determined by the individual's self-assessments of his/her ability to perform a task (ABILITY), by one's expectations that he/she can perform the behavior successfully (CONFIDENCE), and by the values he/she assigns to specific behaviors (IMPORTANCE). A second assumption was that principals in high-performing schools, in contrast to those in low-performing schools, have had different experiences that have contributed to their current behavior and that they are internally

motivated to value and engage in specific behaviors associated with "effectiveness."

To test these assumptions, two questionnaires were developed and a variety of statistical approaches used to assess efficacy levels. A structured interview guide was also created to explore cognitive efficacy characteristics of principals in low- and high-performing schools. The interview guide was based on the critical-incidents format used by Huff, Lake, and Schaalman (1982), in which principals were asked to recall and describe major events that had occurred during the past year. Principals were also asked to outline how they developed their skills in specific areas and to identify the processes they went through to conclude that some behaviors were more important than others. The writer assumed that the questionnaire data would identify ABILITY, CONFIDENCE, and IMPORTANCE differences and that the interview data would provide additional evidence to support the hypothesis that high-efficacious principals are administrators of high-performing schools and low-efficacious principals are administrators of low-performing schools.

Definitions of Terms

The following terms are defined in the context in which they are used in this dissertation:

Achievement motivation: the ability to identify personal and group goals and the desire to be successful.

Competence: the ability to perform well.

Competency: any skill, knowledge, schemata, or ability that can be used in the expeditious achievement of a task.

Concept formation: construction of concepts and hypotheses, and the reordering of information.

Conceptual flexibility: ability to accept alternative perspectives when discussing a problem or issue.

Concern for image: concern for controlling information about the school.

Confidence: the expectation that one will be successful.

Decisiveness: the ability to express forcefulness and confidence in making decisions.

Delegation: assigning and monitoring others' performance.

Developmental orientation: engaging in behaviors to stimulate growth in others.

Effectiveness: the ability to attain appropriate goals.

Efficacy: the extent to which one believes that he/she can produce a given outcome.

Efficacy construct: a three-dimensional concept encompassing COMPETENCE, CONFIDENCE, and OUTCOME values.

High-performing school: one in which 90% or more of the students achieved minimum mastery on language and mathematics criterion-referenced tests over the past three years.

Informational search: gathering information from relevant others.

Interpersonal search: determining the perceptions of others.

Low-performing school: one in which 75% or less of the students achieved minimum mastery on language and mathematics criterion-referenced tests over the past three years.

Managing interaction: getting others to interact and to resolve conflict.

Management control: ability to monitor performance.

Mission: a value or statement used to direct behavior.

Motivation: an individual's inner state, which causes him/her to direct his/her behavior toward the accomplishment of some goal.

Oral communication: ability to present ideas to other.

Organizational ability: ability to organize time and set goals.

Outcome value: the subjective value associated with the performance of a given behavior.

Persuasiveness: ability to persuade or influence others.

Proactive: one who accepts responsibility, takes initiative, and provides direction.

Tactical ability: ability to use a number of strategies to accomplish the desired result.

Overview

Chapter I contained an introduction to the study, a statement of the problem and rationale for the research, need for and purposes of the study, a discussion of the efficacy construct, assumptions, and definitions of key terms. Chapter II is a review of related literature in the areas of discretionary behavior, theory and

research on efficacy, and effective leadership behaviors. The design and methodology of the study are explained in Chapter III, and the study findings are discussed in Chapter IV. Chapter V contains a summary of the study, conclusions drawn from the major findings, implications, limitations, and recommendations.

CHAPTER II

LITERATURE REVIEW

This chapter contains a review of literature on three topics: (a) discretionary behavior of principals, (b) theory and research on efficacy, and (c) effective leadership behaviors.

Discretionary Behavior of Principals

A review of the stimulus research suggested that school principals are less constrained by their environments than might be expected. For instance, Weick (1976) wrote that the discretionary limits on principal behavior in the "typical" American school represent a "loosely coupled" system in which events, elements, tasks, roles, territories, positions, offices, responsibilities, rewards, and sanctions are weakly connected. Stating that school employees are relatively autonomous, Weick inferred that principals have a choice of whether or not to engage in behaviors that will strengthen couplings between the technical core elements of the school (instructional issues) and the authority of the office itself (leadership).

Relationships between central office personnel and school principals have also been described as loosely coupled. Hannaway and Sproull (1978-1979) used structured observations and interviewed

52 of 77 central office personnel and school administrators and determined that less than 10% of the time spent by either group was interrelated. Less than 6% of their time was spent on instructional issues, the core element Weick (1976) addressed in his article. In this study, central office personnel spent most of their time dealing with logistics, collecting and disseminating nonprogram information, and addressing district-wide policy issues, thereby leaving administrators to do what they wished in their respective buildings.

Some have argued that principals are constrained in the behaviors they endorse or avoid by collective-bargaining agreements. However, following an investigation of six school districts located throughout the United States, Johnson (1983) noted that certain contractual provisions were fully implemented in some schools and modified or renegotiated in others within the same district. She concluded that principals could manage schools even in the most strongly unionized districts, although doing so required considerable time and effort. The factor that distinguished principals who worked in harmony with teacher contracts from others was dependent on teachers' perceptions of the principal's competence and values. When teachers perceived that the principal acted responsibly, was well intentioned, and had students' interest at heart, they were both supportive and forgiving. And although the same teachers expected principals to honor their agreements, there nevertheless existed an informal bond that allowed both parties to accommodate the expectations of the other.

Peabody (1962) reached a similar conclusion regarding the importance of ability in relation to behavior. In his investigation of principal effectiveness, he noted that teachers were equally willing to accept decisions made by the principal because of the individual's knowledge and skill levels. Finally, Kunz and Hoy (1976) noted that principals who possessed the necessary skills to take charge of their schools, those they described as initiators, exercised more leadership in their buildings than did those who were primarily human-relations oriented.

An interesting dichotomy related to principal behavior concerns the endorsement of either formal or informal authority. Hanson (1976-1977) concluded that although teachers expected their principal to exercise formal authority over such matters as the allocation of human/material resources, school safety/security measures, dealing with community/parent pressures, and evaluating staff, they were willing to negotiate principal leadership activity in a number of gray areas that included both instructional and classroom issues. This would again suggest that principals have a choice. They can, if they wish, exercise leadership in the instructional/classroom area or they can limit their behavior to managerial or policy areas in which the school staff accepts formal behavior.

In a related study, Isherwood (1983) investigated the relationship between formal and informal authority behaviors and determined that (a) formal and informal authority characteristics

were distinct and separate entities, and (b) informal authority behaviors comprised four other authority domains: charismatic authority based on unique personality qualities and behavioral stances; expert authority based on the person's knowledge and skill levels; normative authority based on the individual's willingness and effectiveness to help employees with problems external to the organization; and a human-relations authority cluster based on the principal's behaviors when interacting with others. Of particular importance was Isherwood's conclusion that a principal's informal authority behaviors, which encompass the three efficacy dimensions included in the current investigation, defined principal effectiveness.

Collectively, the research suggested that principals do have a choice in the behaviors they endorse and/or avoid and that their decision is related to the influence they have in their respective schools. The studies also implied that informal authority behaviors (competence, confidence, and outcome values) are central factors related to one's ability to influence others. This position was supported by such authors as Burlingame (1985), Stogdill (1974), and Leithwood and Montgomery (1984), who asserted that principals' behavior is dependent on their belief that a desired goal is attainable, that they can successfully execute the behavior required, and that the outcomes of their efforts will be successful--in other words, that principals are motivated by a sense of efficacy.

Theory and Research on Efficacy

The word "efficacy" is defined in Webster's Ninth New Collegiate Dictionary as "the power to produce an effect." Several researchers have used the efficacy construct to explore behavior in an educational environment.

Armor et al. (1976) conducted the first investigation of the efficacy construct in an educational setting. In this study the researchers sought to identify school and classroom factors that were influential in raising pupils' reading scores in 20 Los Angeles elementary schools. Concluding that pupils' background and previous reading scores explained much of the variance in their data, the researchers also noted that school-related factors, namely which school the children attended and the classroom to which they were assigned, also affected students' scores. Seeking more information, Armor et al. decided to assess attitudes by asking teachers to respond to the two Rand items (Chapter I, p. 9). Then, combining both values, they created a single measure they labeled an efficacy score. According to Armor et al., efficacy is a two-dimensional construct containing a competency and an expectancy component. They confirmed that efficacy is correlated with teacher behavior and student achievement. A year later, Berman and McLaughlin (1977) used the same items and also concluded that efficacy is correlated with student achievement and teacher behavior.

Bandura (1977), however, was the first researcher to delineate the full significance of the efficacy term. He took Newell's (1978) position that psychological theorizing and research place undue

emphasis on investigating the relationship between stimulus and response sequences at the expense of looking for possible interactions between the two. Bandura suggested in his seminal paper that individuals' assessments of their ability to perform a specific behavior and their estimation of how successful they would be doing it are interrelated.

Between the stimulus and response sequences is a cognitive process Bandura (1982) labeled "self-referent thought." According to Bandura, self-referent thought is based on information collected from any of four sources: (a) performance feedback where the individual tries to perform the behavior and is successful, (b) observing others perform a behavior and convincing oneself that he/she can perform it as well, (c) being persuaded by relevant others that one can perform the behavior, and (d) from emotive experiences where the individual learns to avoid certain behaviors because he/she experiences stress. Bandura stated, "Recent years have witnessed a growing convergence of theory and research on the influential role of self-referent thought in psychological functioning" (p. 122).

Bandura, like Armor et al. (1976), maintained that efficacy is a two-dimensional concept consisting of a competence and a performance component. To elaborate, Bandura (1977) stated that individuals avoid activities where they believe they lack needed skills or in which they fear failure; conversely, without hesitation, they engage in activities where they perceive themselves

to be competent and confident. Whether the individual engages in the behavior at all depends on mediated thought processes or the individual's self-efficacy judgment of his/her competence and confidence levels.

Three (two of which are related) teacher-based efficacy investigations also supported the two-dimensional self-efficacy model postulated by Bandura. The most important of these are the Ashton et al. (1982, 1983) investigations. Ashton et al.'s efficacy model is shown in Figure 2.1.

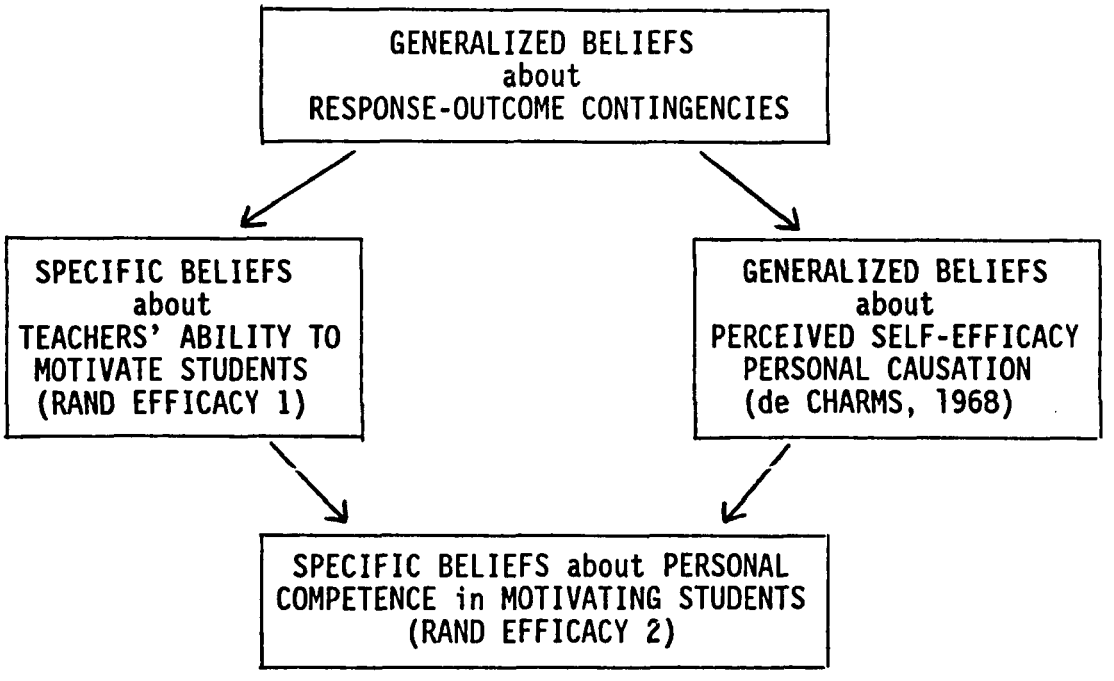

Figure 2.1: Ashton et al.'s efficacy model.

The Ashton et al. study is noteworthy because it represents a rigorous investigation of efficacy that used a multidisciplinary

approach, grounded-theory principles, the collection of ethnographic data, and process-product techniques to assess and define efficacy levels. As the model suggests, Ashton et al., while endorsing Bandura's (1977) two-dimensional situation-specific orientation, added a third efficacy dimension labeled Generalized Beliefs about Perceived Self-Efficacy. The researchers theorized that individuals who lack situation-specific learning experiences will base behavioral decisions on external generalized information sources. Based on de Charms's (1968) Personal Causation Theory, Ashton et al. hypothesized that global or more loosely defined beliefs could also affect behavior. For Ashton et al., Origins (de Charms, 1968) are more characteristic of Bandura's situation-specific orientation than are Pawns, who are directed by externally oriented information systems.

During Phase One of their study, Ashton et al. (1982) assessed efficacy levels of 29 teamed middle school teachers and 20 traditionally organized junior high instructors using the two Rand items and a structured observation technique. Upon interviewing two high- and two low-efficacious teachers, the researchers found limited evidence to support the inclusion of a Generalized Self-Efficacy dimension in their Efficacy Model. Using Seligman's Learned Helplessness Theory to explain their findings, Ashton et al. identified low-efficacious teachers as those who believed it was impossible to motivate students because of their home environments (Universal Helplessness), exerted less effort to teach all students because they believed that it would be futile to do so (Motivational

Deficit), indicated they would resist learning from experience even when they had been successful with low-achieving students (Cognitive Deficit), but nevertheless maintained their self-esteem by taking the position that no other teacher could do better. It was the last statement more than anything else that suggested a global belief can influence behavior.

From an ethnographic perspective, the Ashton et al. (1982, 1983) findings were encouraging because descriptions of high-efficacious teachers and their classrooms paralleled descriptions of effective principals and schools. However, the researchers did experience numerous statistical problems. To elaborate, the two Rand items failed to identify significant trends between the two teacher groups. In an attempt to develop more reliable measures, the researchers developed an expanded efficacy questionnaire, used a stress question as a proxy for efficacy, and created a 50-item vignette questionnaire. They also administered Rotter's (1966) Locus of Control and Medway's (1981) Teacher Locus of Control instruments to a random sample. Again, significant trends were not found, leading the researchers to conclude that "the Rand items remain our best predictors of achievement" (p. 105). They recommended, as Bandura (1977) had before them, that discretely defined situation-specific behaviors should be used to assess efficacy levels.

The next study of interest was conducted by Gibson and Dembo (1984). They sought to develop an expanded efficacy measure by

deleting the Ashton et al. (1982, 1983) Generalized Perceived Self-Efficacy dimension from their model. Endorsing Bandura's (1977) situation-specific two-dimensional self-efficacy schema, the researchers analyzed three factors (teacher efficacy, verbal ability, and flexibility) and developed a 30-item questionnaire, which has yet to be tested in a research setting. During Phase One of their study, Gibson and Dembo measured two efficacy factors, Teaching Efficacy and Perceived Personal Efficacy, and confirmed statistically that the factors were distinct ($r = .19$). Reliability quotients for the Teaching and the Perceived Personal Efficacy items were .75 and -.78. During Phase Two, convergent and discriminant validity were determined. Convergence was indicated using both an open- and closed-ended format, where $r = .42$, $p < .05$. Discriminant validity was also indicated by the fact that the correlation of teacher efficacy, when measured by both methods, exceeded correlations between teacher efficacy scores and both the verbal ability and flexibility scores.

Looking at differences among efficacy researchers, two investigators added dimensions to Bandura's model. Semantic differences existed in terms of how both efficacy dimensions were defined, and major differences also existed in terms of the instruments that were used to measure efficacy levels. In terms of instrumentation, the differences were major. Followers of Bandura's social psychology orientation have traditionally arranged operationally defined, situation-specific behaviors in an ascending hierarchy where respondents were required to assess their efficacy

levels using a Likert scale. In most instances, self-efficacy was measured using a 10-point system (0 for no confidence to perform the behavior and 10 for complete confidence), whereas behavioral efficacy was determined using a 100-point percentage scale. In contrast, Gibson and Dembo (1984) and both Rand research groups employed a six-point scale (1 for strongly disagree and 6 for strongly agree), and all used more generalized rather than situation-specific hierarchical behavioral descriptors to generate an efficacy score. These differences are summarized in Table 2.1.

To summarize, three major conclusions were drawn from the writings on efficacy. One, the efficacy construct is two dimensional and consists of a competence and a confidence component. Two, the efficacy construct is related to behavior and student achievement. Three, assessing efficacy levels is fraught with difficulties. At the time of this writing, no research had been undertaken to determine the value of including an importance dimension in an efficacy model (Saltzer, 1982), the Gibson and Dembo (1984) efficacy instrument has yet to be validated, and efficacy-oriented research focused on the principal remains limited.

Effective Leadership Behaviors

A perusal of the effective-schools data suggested that efficacy is related to behavior and that effective principals are more motivated to engage in particular behaviors than are their less-effective colleagues. In the literature, effective principals were described as those who build consensus and commitment to academic

Table 2.1.--Summary of efficacy theory.[a]

	Factor A: Self-Efficacy	Factor B: Behavioral Efficacy	Factor C: Subjective Values	Factor D: Loosely Defined Values	Efficacy Formula	Measurement Format
Asks question:	"Can I perform the specific behavior?"	"How likely is it that performing the behavior will lead to the outcome I want, or How successful will I be?"	"What do I get out of it--why do it at all?"	"What do I think about all this issue most of the time?"		
Definitions:	Conviction that one can execute the behavior	A person's estimate that a given behavior will lead to a successful end	Subjective personal value of a specific outcome	Generalized belief that one can successfully perform the behavior		
Armor et al. (1976)	I believe that if I try hard I can get through to even the most difficult pupil	I believe that a teacher can't do much given some of the home environments my students come from	Not considered	Not considered	A + B	Two questions using a 6-point Likert scale to measure Factors A and B
Ashton et al. (1982, 1983)	I can motivate these students	These kids can be motivated	Not considered	I can motivate these students	A + C	Concluded that two Rand questions are best efficacy measures
Dembo & Gibson (1985)	I can motivate students	I can motivate these students	Not considered	Not considered	A + B	30-item two-factor questionnaire using Likert format
Bandura (1977)	I am confident that I can perform this behavior	I expect to be successful at least 50, 60, or whatever percent of the time	Not considered	Not considered	A + B	Used Likert scale to assess competence and a percentage scale to assess outcomes
Saltzer (1982)	I am confident that I can do it	I estimate that I would be successful 50, 60 ... percent of the time	I believe that it is an important behavior to engage in	Not considered	A+B+C	Never tested

[a]Efficacy is defined as the extent to which an individual believes he/she can successfully reach a desired goal.

goals; have high expectations for themselves, students, and staff; are instructional leaders; establish orderly school climates; coordinate instructional programs; make effective use of their time; and monitor student achievement. Less-effective administrators tend to avoid such activities (Armor et al., 1976; Brookover, Gigliotti, Henderson, & Schneider, 1973; Brookover, Schweitzer, Beady, Flood, & Wisenbaker, 1977; Brookover & Lezotte, 1979; California State Department of Education, 1977; Felsenthal, 1982; Levine & Stark, 1981; Maryland State Department of Education, 1978; New York City Board of Education, 1979; Phi Delta Kappa, 1980; State of New York, 1974; University of the State of New York, 1976; Vallina, 1978; Venezsky & Winfield, 1979; Weber, 1971; Wynne, 1981).

Three typologies were reviewed to organize the effective-schools/leadership material (Croghan, Lake, & Schroeder, 1983; Leithwood & Montgomery, 1982, 1984; Sergiovanni, 1984). Of the three, the Leithwood and Montgomery (1984) format was selected because it was based on an earlier typology (see Table 2.2) that was accepted by practicing principals.

Leithwood and Montgomery (1982) used a grounded-theory methodology based on personal interviews with 21 practicing principals before developing their typology, which categorized 21 principal behaviors under three major headings: GOALS, FACTORS, and STRATEGIES. The authors defined GOALS as long-term aspirations held by the principal, FACTORS as within-school elements that principals acted on to improve learning outcomes, and STRATEGIES as

Table 2.2.--Dimensions of principal behavior (Leithwood & Montgomery, 1982).

Dimension	Subdimension
GOALS	
FACTORS	1. Factors affecting student classroom experiences 1.1 The teacher 1.2 Program objectives and emphasis 1.3 Instructional behaviors of the teacher 1.4 Materials and resources 1.5 Assessment, recording, and reporting procedures 1.6 Time/classroom management 1.7 Content 1.8 Physical environment 1.9 Interpersonal relationships in the classroom 1.10 Integration 2. Factors affecting student school-wide experiences 2.1 Human resources 2.2 Material and physical resources 2.3 Relationships with community 2.4 Extracurricular and intramural activities 2.5 Relationships among staff 2.6 Relationships with out-of-school staff 2.7 Student behavior while at school
STRATEGIES	Categories of Strategies Used by Principals: 1. Building/maintaining interpersonal relationships and motivating staff 1.1 Involving staff 1.2 Doing things with staff 1.3 Being positive, cheerful, and encouraging 1.4 Being with/available or accessible to staff 1.5 Being honest, direct, and sincere 1.6 Getting staff to express/set own goals 2. Providing staff with knowledge and skill 3. Collecting information 4. Using vested authority 5. Providing direct service to students 6. Assisting with and supporting teachers' regular tasks 7. Facilitating within-school communication 8. Providing information to staff 9. Focusing attention on the special needs of students 10. Facilitating communication between the school and community 11. Using goal and priority setting and planning 12. Finding nonteaching time for staff 13. Establishing procedures to handle routine tasks

interventions principals employed to achieve valued outcomes. Two years later, following a review of the effective-schools and effective-leadership studies, Leithwood and Montgomery expanded their earlier model and developed a four-by-four matrix in which administrator behavior was described in an ascending hierarchy. Added to the GOAL, FACTOR, and STRATEGY dimensions was a DECISION-MAKING category, and along the hierarchical axis were four behavioral levels--principals as MANAGERS, HUMANITARIANS, PROGRAM MANAGERS, and, at the upper end of the continuum, PROBLEM SOLVERS.

The following review of writings on leadership is categorized under the headings Goals, Factors, Strategies, and Decision Making. The effective-schools/leadership research was reviewed, updated, and incorporated into the current material. Included in the updated material is an important investigation of high- and average-performing principals in Florida (Huff et al., 1982). At the end of each section are listed, in ascending order, the principal behaviors found in Leithwood and Montgomery's (1984) hierarchy.

Goals

Of the four major categories used by Leithwood and Montgomery, the goal dimension consistently differentiated more- and less-effective principals. Following a synthesis of the effective-schools research, Leithwood and Montgomery (1984) concluded that administrators' goals differ in terms of their source, nature, and use. With regard to source, less-effective principals were described as those who derived goals from a personal need, whereas

more-effective principals' goals arose from a variety of external sources--community, parents, pupils, staff, and research. Less-effective principals also had fewer goals, their goals were further removed from public expectations, they tolerated the existence of loosely structured associations in their schools, and they were more concerned with their own personal welfare than with the welfare of others. With regard to the nature of the goals, those of less-effective principals were not as ambitious and tended to be directed at selected school audiences; such principals tolerated the existence of second-class groups in their buildings. In contrast, effective principals were characterized as being more capable of explicitly defining their philosophies about what constituted an "educated person"--they had what Leithwood and Montgomery called "a defensible philosophy of education" (p. 29). Concerning how goals were used, effective principals used their espoused goals to direct decision-making processes and to build consensus among students, staff, parents, and relevant others.

A number of researchers concluded that more-effective principals were primarily concerned with instructional issues and reflected this orientation by being instructional leaders in their respective buildings (Austin, 1979; Berman & McLaughlin, 1979; Blumberg & Greenfield, 1980; Brookover et al., 1977; Brookover & Lezotte, 1979; Brundage, 1981; Felsenthal, 1982; Maryland State Department of Education, 1978; Phi Delta Kappa, 1980; Sarason, 1971; Strother, 1983; Venezsky & Winfield, 1979; Wellisch, MacQueen,

Carriere, & Duck, 1978; Wilson, 1982). To elaborate, Austin concluded that effective principals were perceived by their staffs as experts in reading and/or mathematics, whereas Felsenthal found that effective principals functioned as head teachers who could knowledgeably discuss curriculum and teaching methods with teachers. Berman and McLaughlin stated that teachers rated their principals higher in terms of effectiveness when they saw them as a source of new ideas, materials, and methods.

Principals in the Blumberg and Greenfield and the Brundage studies established instructional goals for their staffs. In the Brookover et al. investigation, principals' attention to the basics in the white school sample contributed to the schools' overall achievement. In the Maryland study, principals in the high-residual-effective schools had a cognitive or achievement orientation. All of the principals in the high-achieving schools in the Phi Delta Kappa study stated that instructional issues were important, whereas the effective principal in Venezsky and Winfield's study made it known to all that reading instruction was his top priority. Wilson, observing high-performing principal Ed Corbett, noted that the principal continuously emphasized quality instructional time for students. Finally, Brookover and Lezotte noted that effective principals in their study were more likely to be assertive in their role as instructional leaders. In contrast, less-effective principals exhibited a strong management focus and were further removed from both curriculum and instructional issues. In this regard, Berman and McLaughlin reported that most principals

avoided active involvement in innovative curriculum projects. Further, less-effective principals in both the Brookover and Lezotte and the Maryland studies emphasized collegial relationships at the expense of instructional issues.

One should not conclude that effective principals were inhumane. Effective principals were also characterized in the literature as being concerned about "human relations" and school-climate factors. However, this interest was tempered by the belief that students and achievement came first and teachers' feelings second. To elaborate, effective teachers in the Maryland (1978) study were not applauded for their stance on instructional matters over the personal wishes espoused by their staffs. Brundage (1981) described effective principals as "boat rockers" who dismissed the desire to be loved for the hard task of monitoring student progress. Concomitant with the instructional versus human-relations orientation were high expectations for teachers and students (Brookover et al., 1977; Brundage, 1981; Maryland State Department of Education, 1978; Phi Delta Kappa, 1980; Venezsky & Winfield, 1979; Wilson, 1982) and an emphasis on program improvements (Berman & McLaughlin, 1979; Wellisch et al., 1978).

Effective principals also perceived a need to build strong community-school networks to support their espoused goals. Venezsky and Winfield (1979) noted that the effective principal they studied sought parental support for projects that would take time to implement. In the Blumberg and Greenfield (1980) study, three of

the eight principals reported a need to involve both parents and teachers in the goal-setting process. Further, approximately one-third of the principals investigated in the Phi Delta Kappa (1980) study recognized the need for, and assertively sought, desired external support to achieve valued goals. Berman and McLaughlin (1977) noted similar orientations when effective principals were confronted with opposing political and bureaucratic forces. Effective principals also took advantage of opportunities to speak to parent and community members to gain consensus on school goals (Maryland State Department of Education, 1978).

In terms of efficacy, or the belief that one can achieve a desired outcome, more-effective principals were differentiated from their colleagues in that they knew what they wanted. The literature suggested that effective principals had a desire to run their schools in a predetermined manner. Investigators in the Maryland study (1978) noted that effective principals were organized and knew where needed data were located, were knowledgeable about activities going on in their schools, and were not overwhelmed by administrative duties. Observers in the study also reported that principals in the effective schools had a sense of direction, a point of view, an orientation that was not evident in the less-effective schools they visited.

In the study of eight elementary school principals conducted by Blumberg and Greenfield (1980), principals were "desiring and eager to make their schools over in their image" (p. 201). Following a study of 31 Florida administrators (17 high performers and 14

average performers), Huff et al. (1982) concluded that "highly effective principals had a take-charge attitude and a sense of control over the fate of their schools" and that "outstanding principals appeared to have a greater sense of efficacy in shaping their universe" (p. 9). Stating that high-performing principals were more prone to learn from past experiences, to capitalize on failures, and to accept responsibility for the schools' performance and were more knowledgeable and effective in securing needed resources for their buildings, Huff et al. concluded that average performers were less willing to accept responsibility for their schools' entire operation. Huff et al. also concluded that principals in high-performing schools were proactive; principals in average-performing schools were reactive.

The literature also suggested that knowing where one wants to go is related to ego-development theory. Leithwood and Montgomery (1982) theorized that principals framed their goals along a continuum based on a concern for self, for task, and, at the highest level, for others. This pattern was observed among teachers (Fuller, 1974), as well as among business managers (Hall, 1974). Using self-reports and assessments collected from subordinates, Hall determined that low achievers had stronger creature-comfort/security needs, as defined by Maslow, than belonging or self-actualization needs. In contrast, high achievers were significantly stronger in terms of their need to belong and to be self-actualized. Calling low achievers "maintenance seekers" and high achievers "motivation seekers," Hall concluded that:

> The image of the Achieving Manager which emerges from our study is one characterized by the employment of an integrative style of management in which people are valued just as highly as accomplishment of the goals of production and in terms of interpersonal relationships, candor, openness, sensitivity, and reciprocity as the rule rather than the exception. . . . From a motivational standpoint the Achieving Manager would appear to believe formally in the need to find meaning in one's work and to afford such meaning in others. Higher and more constructive incentives tend to preoccupy the Achieving Manager, while his less achieving comrades remain mired in fantasies of defense and self-preservation. (p. 46)

As mentioned earlier, Leithwood and Montgomery (1984) arranged principals' goal-related behaviors in a four-level hierarchy: the principal as an ADMINISTRATOR, a HUMANITARIAN, a PROGRAM MANAGER, and a PROBLEM SOLVER. At the lowest level of the hierarchy, administrators' goals were derived from personal needs, were focused on administrative tasks, were stated only when demanded, and instructional goals were deemed to be the responsibility of teachers and not the principal. At the second or HUMANITARIAN level, goals were based on interpersonal relationships, could be ambitious but limited in focus, were not used for planning, and, as in the previous level, were stated only on demand. At the PROGRAM-MANAGER level, goals were selected from several sources--mostly from the public domain, there was a focus on exceptional students and student groups, staffs were encouraged to use goals for planning instructional activities, and goals were shared with others when requested and/or whenever the need arose. At the PROBLEM-SOLVER level, goals were derived from multiple sources, were ambitious, included <u>all</u> students and student groups, were used for planning, and were also used to build consensus and to establish consistency

in the school itself. In other words, as Huff et al. (1982) suggested, high-performing administrators were committed to a mission and were in control of their buildings.

Based on the research, the following assumptions were made: Goals form the basis of the environmental variables to which principals are willing to attend, goals define purpose and direction, and goals contain what Leithwood and Montgomery (1984) called a "motivational structure--a stimulus for action" (p. 24). Thus, the writer anticipated that principals would be identified who espoused similar goals but who nevertheless failed to act on them because of perceived self-efficacy assessments. Some might have failed to act on their goals because they believed they did not possess the needed skills to operationalize them, some might have anticipated failure rather than success when performing a given set of behaviors, and still others might have concluded that the outcomes associated with the behaviors were not worth the effort. Support for this position was derived from Croghan et al.'s (1983) investigation, in which all principals were committed to a school mission but high-performing principals differed from their average-performing peers in that they were more proactive and decisive in terms of the goal-related behaviors in which they engaged.

In a related investigation that focused on the importance issue, Barth (1984) discovered that 20 midwestern principals refuted Edmond's effective-schools correlates. Some of their comments were: "You look at who's writing it. . . . I don't look at the research. . . . Challenge the research methodology. . . . Criticize the

process which inflicts the research on you. . . . Acknowledge the value of the research but declare it inappropriate in my setting." This research confirmed that outcome values, if not present, also had an effect on goal-related behavior. If a principal had the desire to change current school practices, if he/she had a vision, then one could hypothesize that these values would supersede whatever criticism the principal might have of research-based data.

Factors

Leithwood and Montgomery (1982) defined factors as school elements that most account for what students learn. Like goals, factors differ in terms of their source, nature, and use. In terms of source, less-effective principals have been found to base their factor expectations on personal experiences and needs; in comparison, effective principals' factor expectations were based on knowledge arising from respected colleagues and research. Second, as effectiveness increased, principals' expectations associated with each factor became more valid in terms of their potential influence. Third, as effectiveness increased, the number of factors the principal tried to influence also increased and changed from a school-appearance/day-to-day focus to a total school orientation that included student achievement.

Leithwood and Montgomery divided factors into two categories: (a) factors that the principal attended to that affected student classroom experiences and (b) factors that affected the student's school-wide experiences. Following their literature review,

Leithwood and Montgomery noted that although both more- and less-effective principals tended to address the same factors, a difference existed in terms of the importance principals placed on each. The researchers also cautioned readers not to place undue emphasis on the factors themselves because the effectiveness research was not definitive in terms of factor identification. Some studies cited just one factor and others as many as seven; also, factors identified in one investigation were not always identified in subsequent studies.

Classroom factors. Factor-related expectations associated with student classroom experiences fell under three headings: teacher selection, instructional practices, and curriculum issues. For instance, a number of effective principals in the Maryland (1978) study observed prospective teachers teaching and interviewed candidates about their teaching philosophies before offering them a contract. Wilson's (1982) ethnographic description of principal Corbett indicated that the principal saw a direct connection between hiring competent staff and maintaining quality instructional programs for students. Corbett also interviewed prospective candidates and required them to respond in writing to three classroom problems. He then analyzed the candidates on the basis of their pedagogical approach, organization and thinking skills, and the legibility of their written responses.

Wynne (1981) determined that effective administrators carefully checked candidates references and frequently sought staff assistance

when selecting new personnel. Effective principals in Vallina's (1978) study were personally involved in selecting staff. In contrast, less-effective principals permitted district-office personnel to select candidates for them (Jarvis, Parker, & Moore, 1970; Pharis & Zakaruya, 1979).

Concerning the instructional strategies used by teachers in the classroom, effective principals believed that certain instructional practices and not others promoted student achievement (Gross & Herriot, 1965). The effective principal in the Venezsky and Winfield (1979) investigation emphasized homogeneous grouping as an outcome of all classroom decisions, attended to relationships between instructional strategies and resource materials, and ensured that instructional behaviors were institutionalized. In the Phi Delta Kappa (1980) study, effective principals used academic goals to direct instructional behaviors. Blumberg and Greenfield (1980) noted that the eight effective principals in their research modeled instructional strategies teachers were to use and were more willing to confront staff members when their teaching strategies were not producing the desired effect.

Marcus, Wellisch, MacQueen, Duck, and Lee (1976) investigated 24 schools operating Emergency School Aid Programs and noted that, in schools where mathematics achievement was high, principals effectively communicated a point of view about teaching practices. In a State of New York (1974) investigation, the research team noted that the effective principal had a well-defined plan to teach reading, which he shared with others. The image of an effective

principal acting as the "head teacher" of the school contrasted with behaviors exhibited by less-effective principals. In the State of New York study, the less-effective principal did not have a plan, whereas typical principals in the Crowson (1980) and Leithwood, Montgomery, and Maynes (cited in Leithwood & Montgomery, 1984) studies allowed teachers to use whatever teaching strategies they wished.

With regard to curriculum objectives, Berman and McLaughlin (1977) stated that "objectives of the teacher's entire program are reported to be of interest to both effective and typical principals" (p. 323). Nevertheless, numerous effective-schools studies have supported the premise that effective principals focused their attention on acquisition of basic skills, especially in reading (Brookover & Lezotte, 1979; Phi Delta Kappa, 1980; State of New York, 1974; University of the State of New York, 1976; Venezsky & Winfield, 1979; Weber, 1971). In the Wellisch et al. (1978) study, effective principals established performance standards for student achievement, as did the principal in the Venezsky and Winfield study; he specified the percentage of students in his school who were to be reading at grade level. Effective principals in a California State Department of Education (1977) investigation communicated reading objectives to parents and used reading goals to solicit parental involvement in their children's education. All eight principals in the Phi Delta Kappa study met with teachers to

establish goals and curriculum objectives (in five of the eight studies, parents were also involved in the process).

In the Blumberg and Greenfield (1980) and the Venezsky and Winfield (1979) investigations, effective principals established clear reading-program priorities and used objectives as a focal point for instructional activities. At the opposite end of the continuum, less-effective principals perceived little if any value in involving themselves with curriculum issues (Wolcott, 1973) and did so only if requested (Leithwood et al., cited in Leithwood & Montgomery, 1984). Indeed, although typical principals tend to report that they would like to be instructional leaders, Rosenburg (1980) suggested that the involvement they visualize is indirect. Principals in this study clearly stated that they wanted to act as facilitators or coordinators rather than assume "direct leadership and curriculum decision-making" responsibilities (p. 166).

Curriculum coordination and integration was also a primary concern of effective principals. In the Phi Delta Kappa (1980) study, effective principals were able to institute a coordinated instructional approach throughout the building. Basal reading series were used in some buildings, while teachers at every level knew the teaching objectives of their colleagues throughout the school. Venezsky and Winfield (1979) investigated schools with effective reading programs and noted that one effective principal had his teachers, aides, and the specialist sequence the entire reading program and communicate their findings to all others in the

school. In their successful-schools study, Wellisch et al. (1978) noted that curriculum content, course objectives, and the use of specific materials were coordinated throughout the school. In contrast, less-effective principals exerted minimal effort on curriculum-coordination/ integration issues and let their teachers make all classroom decisions (Leithwood & Montgomery, 1982).

Differences between more- and less-effective principals were minimal in terms of the attention each paid to types, amounts, and use of curriculum materials and resources. At the same time, there was some support for the premise that effective principals see a positive relationship between being able to teach and having needed resources. In the Maryland (1978) study, principals in the effective schools were rated higher by their teachers with regard to supplying instructional materials than were principals in less-effective schools. Levine and Stark (1981) reported that the effective principal in their study made it a priority to deliver necessary supplies promptly to his staff. Two of the eight principals in the Phi Delta Kappa (1980) study believed they had to meet teachers' requests for materials if those teachers were to be effective in their classrooms. Finally, Marcus et al. (1976) noted that effective principals assumed more responsibility for the selection of instructional materials than did their less-effective peers.

A number of studies also indicated that effective schools developed systems to continuously evaluate student progress

(Felsenthal, 1982; Levine & Stark, 1981; New York City Board of Education, 1979; Phi Delta Kappa, 1980; Vallina, 1978; Venezsky & Winfield, 1979; Weber, 1971). Surprisingly, direct principal involvement in the assessment process was noted only in the Vallina study, in which effective principals interpreted and reviewed achievement results with teachers. According to Leithwood and Montgomery (1982), less-effective principals were more interested in the types of instruments used to assess achievement than they were in the final achievement results.

Principals in effective schools also saw a connection between safe and orderly school climates and learning. In the effective-schools literature, better schools had fewer disciplinary infractions than their less-effective counterparts (Armor et al., 1976; Edmonds & Frederickson, 1979; Fretters, Collins, & Smith, 1968; Maryland State Department of Education, 1978; State of New York, 1974). Central to the schools' disciplinary climate was the principal and what he/she did (Vallina, 1978). In the Violent Schools-Safe Schools study (NIE, 1978), an in-depth analysis of the disciplinary climate in ten schools showed that noticeable declines in infractions of rules were prompted by the arrival of new principals who implemented firm, fair, and consistent disciplinary structures in their respective buildings. These principals were also highly visible and made themselves available to both students and staff.

Vallina (1978) noted that effective Chicago principals, who were also very visible, promoted self-discipline on the part of students. In the Maryland (1978) study, effective principals got involved in classroom disciplinary problems encountered by teachers. The eight principals in the Phi Delta Kappa (1980) investigation stressed visibility, interaction with students, and student self-control; they made a concerted effort to help students understand what was expected of them. Wynne (1981) noted that, in effective schools, principals supported staff decisions related to student misbehavior. Further, in addition to establishing and sustaining a focused disciplinary climate in their schools, effective principals convinced teachers that they were professional extensions of the principal's authority.

School-wide factors. Looking at principals' influence on students' school-wide experiences and, in particular, at principals' behavior related to personnel issues, effective principals in high-achieving schools have been found to devote more time than less-effective principals to observing classes (Armor et al., 1976; Brookover & Lezotte, 1979; Felsenthal, 1982; Maryland State Department of Education, 1978; Vallina, 1978). In the Maryland study, principals in the high-residual-effective schools allocated an average of 29% of their time to observing classes; principals in the less-effective schools spent 20%. Both Howell (1981) and Peterson (1978) suggested that typical principals spent as little as 5% to 10% of their time supervising staff. In the Armor et al. (1976) study, effective principals visited classrooms with a

specific purpose in mind, including showing concern, providing support, and assessing teachers' needs. More-effective principals also made a deliberate attempt to match students with teachers (Venezsky & Winfield, 1979; Wilson, 1982). Venezsky and Winfield noted that the effective principal in their study was very concerned about teacher competence and became actively involved in organizing teacher in-service and professional-development activities. Less-effective principals, rather than taking a proactive stance regarding teacher-evaluation issues, avoided all such activity. This finding was supported by Koff, Laffey, Olsen, and Achon (1979) in their study of more than 1,200 administrators, in which principals identified four teacher-performance issues as the top stress-related areas with which they had to contend.

Effective principals also had different perceptions regarding where to acquire needed funds and resources. Whereas less-effective principals focused their attention on school and district funding, effective principals in at least three studies sought supplementary resources from external agencies, including government and private sources (Clark, Lotto, & McCarthy, 1980; Huff et al., 1982; Venezsky & Winfield, 1979). The literature also suggested that effective principals used resources in such a way that their actions were directed by their goals (Reinhardt, Arends, Burns, Kutz, & Wyart, 1979).

Seven studies indicated that differences existed between effective and less-effective principals in terms of community/school

relationships. Bossart, Dweyer, Rowan, and Lee (1982) reported that principals in effective schools established and maintained appropriate community structures and consistently communicated with parents. In the Maryland (1978) study, principals in the high-residual schools were described as effective communicators who successfully articulated the schools' goals to parents. Five of the eight principals in the Phi Delta Kappa (1980) study had excellent relationships with parents, which were supported by an attitude that parents were equal partners in the educational process. Venezsky and Winfield (1979) reported that the effective principal in their study worked diligently to involve parents in the school and repeatedly sent memos home detailing how parents could help their children progress in reading. Blumberg and Greenfield (1980) reported that all eight principals in their sample used a variety of methods to obtain parental support. Principals in the same study also viewed the community as an excellent source of information. The effective principal in the State of New York (1974) study made a concerted effort to make parents and other adults visiting his school feel comfortable and welcome. Finally, Vallina (1978) noted that successful Chicago principals addressed community issues, took an assertive position to enhance their relationship with the community, and did so using a variety of media channels. In contrast, less-effective principals in the Crowson (1980) study, although wanting to have positive relationships with the community, nevertheless projected the image that such relationships were more a matter of convenience than of purpose. As Vallina (1978) suggested,

principals in less-effective schools gave the impression that "a sleeping community should be left alone" (p. 118).

The literature also supported the premise that effective principals nurtured friendly and cooperative relationships between themselves and their teachers. Teachers in the successful school investigated in the State of New York (1974) study thought the school was a pleasant place to work. The school was relatively free of grievances, and the principal, because of the positive relationships he had established with the staff, was able to administer the teachers' contract with some degree of flexibility. In an ecological study of an effective inner-city elementary school, Felsenthal (1982) noted that the principal was generally well liked and had the confidence and respect of the staff. Effective principals in the New York City Board of Education's (1979) school-improvement project communicated effectively with their staffs. In the Venezsky and Winfield (1979) study, the effective principal was able to influence teachers' decisions regarding the curriculum because the staff respected his abilities. Teachers in the achieving schools studied in the California State Department of Education's (1977) school effectiveness study were more satisfied with their relationships with their principals than were teachers located in the less-effective buildings. The same study also indicated that teacher-principal perceptions regarding the degree of influence possessed by the principal were more closely aligned in the successful schools than in the less-effective schools. Finally,

three of the eight principals in the Blumberg and Greenfield (1980) study described the need to establish positive teacher-principal relationships as a high-priority issue. Few studies have been conducted regarding typical principal-teacher relationships; however, two suggested that teachers were dissatisfied with and negative about their principals (Stoker, 1975; Wittmer & Loesch, 1976).

Principals' relationships with external support staff also have been found to differ. Effective principals were more concerned about gaining external support than were less-effective principals. This was especially true of the effective principals studied by Blumberg and Greenfield (1980). And although both more- and less-effective principals used superintendents as mediators (Blumberg & Greenfield, 1980), effective principals were more willing to challenge district-office personnel if their actions or policies were objectionable. For instance, one principal in the Blumberg and Greenfield study deliberately followed some central-office directives and ignored others. One principal in the Phi Delta Kappa (1980) study refused to allow his teachers to complete a district-office form he viewed with disfavor. And the successful principal in the Venezsky and Winfield (1979) study refused to acquiesce to the district reading supervisor's demand that he change the reading program in his school so that it would be in line with the district program. Concerning the intensity of the relationships between principals and central-office staff/consultants, there were no apparent differences between effective and less-effective

principals; some were very close to their superiors and others quite distant. One noteworthy difference, however, was reported by Chesler, Schmuck, and Lippitt (1975), who maintained that less-effective principals were more likely to respond to central-office requests than were more-effective principals.

Returning to Leithwood and Montgomery's (1984) hierarchy, principals at the ADMINISTRATOR level attended to mostly nonclassroom factors such as the school's appearance, their expectations regarding the connection between a given factor and a desired outcome were vague, and their expectations were frequently derived from personal experience. At the HUMANITARIAN level, principals attended to factors that would influence interpersonal relationships, their expectations were vague although ambitious, and those expectations were derived from both personal experiences and beliefs. At the PROGRAM-MANAGER level, principals attempted to influence factors bearing on the school program, their expectations were more specific, and those expectations were based on both personal experience and research data. At the PROBLEM-SOLVER level, principals attempted to influence all factors bearing on student achievement, their expectations were specific, and the factors they addressed were based on professional judgment and research.

Collectively, the research suggested that goals and factors are interrelated. The assumption was made that, when the principal perceived dissonance between what he wanted to achieve and where the school was, this fact directed the factor behaviors he subsequently

endorsed. For example, if the principal perceived a need to hire competent teachers, it was anticipated that he would be more active in the teacher-selection process; if the principal wanted instructional practices to improve, he would become more involved in teacher in-service issues; if concerned about achievement issues, he would establish performance goals; or if he wanted change, the principal would communicate effectively with whoever would listen.

Strategies

Research descriptions related to principals' strategy behaviors supported a relationship similar to that of factor behaviors. Leithwood and Montgomery (1984) defined strategies as activities administrators engage in to influence factors in directions that will promote goal achievement. Strategies differ from factors in that some strategies affect a number of factors (e.g., promoting staff participation or building and maintaining interpersonal relationships), whereas others, which Leithwood and Montgomery labeled "factor-specific," influence select factors, each of which depends on the school's climate and/or the previous establishment of an appropriate background. They found that as principal effectiveness increased, the number of strategies used, the number of factors attended to, and the skill levels attained also increased. The principals also evidenced increased effectiveness in addressing necessary general-purpose factors before using factor-specific strategies.

A considerable volume of data was found in the effective-schools literature describing strategies used by school principals. The first of the 13 strategies identified by Leithwood and Montgomery (1982) concerned principals' attitudes about involving teachers in the decision-making process. Effective principals, unlike their less-successful peers, were more willing to share their authority with others while still maintaining control over the process itself. They also treated teachers as equals rather than as subordinates (Berman & McLaughlin, 1977; Blumberg & Greenfield, 1980; California State Department of Education, 1977; Fretters et al., 1968; Levine & Stark, 1981; Phi Delta Kappa, 1980).

Effective principals deliberately sought staff advice on important issues that would directly affect their behavior. Blumberg and Greenfield (1980) observed that one principal brought his staff together to "problem solve" the school's learning climate, another sought teacher support for change, still another involved his staff in planning decisions, and another involved teachers in brainstorming sessions concerning student behavior. Effective principals also discussed more work-related problems with their teachers (Gross & Herriot, 1965; Phi Delta Kappa, 1980; Wellisch et al., 1978). Further, the Phi Delta Kappa researchers noted that effective principals approached problems from a solution-oriented/nonpunitive perspective. Also noteworthy in this study was the observation that effective principals frequently referred problems to teacher groups rather than to individual teachers.

Effective principals also established problem-solving/decision-making teams (Smith & Keith, 1971) and typically used staff meetings as a forum to gather teacher input (Blumberg & Greenfield, 1980). In contrast, less-effective principals distrusted teachers and rarely asked them for their input on any issue (Sweeney, 1982; Utz, 1972). Sweeney sampled 203 elementary and high school principals about whether to involve teachers in the decision-making process. He concluded that typical principals had "a general lack of confidence and trust in teachers" (p. 566). Typical principals expressed the belief that teachers who wanted to give input were seeking power, misused freedom, were unwilling to accept responsibility, and required close supervision.

Effective principals were also actively involved in staff curriculum-related activities. Venezsky and Winfield (1979) noted that effective principals initially included themselves in staff in-service activities to acquire hands-on experience about new programs. Berman and McLaughlin (1977) noted that effective principals became involved in in-service activities with teachers to send the signal that they were interested in and committed to the program under review. And Edmonds (1978) reported that principals in schools with effective reading programs were directly involved with teachers in the curriculum goal-setting process. In contrast, Leithwood et al. (cited in Leithwood & Montgomery, 1982) concluded that less-effective principals tended to take a hands-off approach to teacher in-service activities and may even have encouraged teachers not to "rock the boat."

Effective principals also encouraged their teachers to express and set their own goals. Leithwood and Montgomery (1984) suggested that effective principals continuously encouraged their teachers to do better. In the Maryland (1978) and Phi Delta Kappa (1980) studies, effective principals conveyed high expectations for students, staff, and their own performance. Effective principals also encouraged time-on-task instructional behaviors (Brookover, Schweitzer, Schneider, Flood, & Wisenbaker, 1978), met with staff on an individual and group basis to identify and establish goals (Blumberg & Greenfield, 1980), and reviewed achievement data with teachers and used this information to set new goals (Phi Delta Kappa, 1980). Effective principals also promoted risk taking and change (Berman & McLaughlin, 1977) and encouraged individual teachers to initiate innovative activities (Maryland State Department of Education, 1980; Venezsky & Winfield, 1979).

Effective principals used informal strategies to develop trusting relationships with their teachers. They recognized "good work" and made themselves accessible and available to review concerns and issues relevant to the staff. Effective principals convinced teachers that they could teach and that they could do better; in some instances, they regularly forwarded memos to praise teachers for their efforts (Edwards, 1984; Gross & Herriot, 1965; Johnson, 1985; Levine & Stark, 1981; Phi Delta Kappa, 1980). In the Phi Delta Kappa study, effective principals made a deliberate attempt to be around the staff. One principal spent most of her day

visiting classrooms and talking with teachers, another did the same and made a point of emphasizing an "open door attitude," and yet another was in the cafeteria every noon hour so that he would be available and accessible to students, teachers, and his aides. In Wilson's (1982) study, the effective principal avoided his office, preferring to spend his time roaming hallways and talking with teachers in their classrooms. This principal consistently arrived at his school 30 minutes before the teachers and students so he would have time to talk with them when they arrived.

Effective principals were also described as honest, direct, and sincere. Principals in the Phi Delta Kappa study supported teachers publicly and reprimanded them privately for poor performance. Wilson (1982) reported that the effective principal in his study was "up front" with his staff. One principal in the Blumberg and Greenfield (1980) study shared her job frustrations with her staff, and all of the principals in this investigation talked about their desire to be natural, genuine, and comfortable with teachers. Less-effective principals' interactions with teachers were more formal and authoritarian. In some instances, such principals totally ignored teacher problems and concerns, hoping that they would either go away or be forgotten (Berman & McLaughlin, 1977; Crowson, 1980).

Effective principals were also committed to maximizing teachers' competencies by providing them with relevant knowledge and skills. Effective principals used information gathered from classroom visits to help teachers. In the Blumberg and Greenfield

(1980) study, one of the eight principals modeled instructional behaviors she expected to observe during classroom visitations. In the Edwards (1984) study, principals of schools with effective reading programs consistently provided teachers with feedback following every classroom visit. Effective principals also encouraged their staffs to visit other schools (Berman & McLaughlin, 1977).

In-service was important to more-effective principals and was frequently associated with better school performance (California State Department of Education, 1977; New York City Board of Education, 1979; Phi Delta Kappa, 1980; Venezsky & Winfield, 1979). Utz (1972) noted that effective principals used in-service activities to orient new staff members and to familiarize incumbents with new teaching materials and methods. Venezsky and Winfield noted that effective principals frequently took charge of in-service activities. Effective principals were also concerned about the purposes of in-service activities and insisted that such programs be related to relevant instructional issues (California State Department of Education, 1977; Phi Delta Kappa, 1980; Vallina, 1978). In contrast, less-effective principals provided little if any in-service for their schools (Wilson, 1982). Dow and Whitehead (cited in Leithwood & Montgomery, 1982) maintained that less-effective principals were more concerned about physical and mechanical issues than they were with the content of in-service programs.

Leithwood and Montgomery (1982) reported that both effective and typical principals gathered information from their environments but differed in terms of the information they collected. Effective principals collected information relating to student achievement and knew the instructional needs of their students (Maryland State Department of Education, 1978). Levine and Stark (1981) reported that one effective principal in their study regularly met with teachers, the assistant principal, and the resource staff to keep informed of instructional matters. Venezsky and Winfield (1979) concluded from their study that the principal in the school with the best reading-achievement levels monitored students' progress with reading supervisors; when students' progress was below expectations, the principal intervened to determine what was wrong.

Effective principals also collected information about new teachers. Wilson (1982) reported that the effective principal in his study used a professional network to identify promising classroom instructors. Effective principals in the Maryland (1978) investigation sought information about the goals and values held by prospective teachers, collected information on the teachers' on-going instructional behaviors, and monitored teachers' behavior when they were implementing new programs/teaching techniques (Goldhammer et al., 1971). Effective principals also monitored staff relationships (Chesler et al., 1975) and collected information about promising new teaching practices and future work/world demands that could be relevant to students (Blumberg & Greenfield, 1980).

Finally, there was some indication that effective principals were more purposeful regarding the information they were seeking. In the Phi Delta Kappa (1980) study, effective principals used questionnaires and other data-gathering techniques that involved students, teachers, and parents to identify the schools' strengths and weaknesses. Typical principals, on the other hand, tended not to investigate teacher values (Chesler et al., 1975) and were less likely to evaluate teachers in terms of improving instruction or student achievement levels (Berman & McLaughlin, 1977; Utz, 1972). Less-effective principals rarely gave teachers performance feedback following classroom visits (Wellisch et al., 1978), nor did they confront issues in a problem-solving manner (Utz, 1972). In fact, less-effective principals, while spending time out of the office, tended to collect information related to pupil-control situations at the expense of looking at instructional/curriculum issues (Crowson, 1980). Further, they were also unaware of the normal ebb and flow of activities in their buildings (Maryland State Department of Education, 1978).

With regard to the use of vested authority, both more- and less-effective principals used their formal authority to control pupil behavior, although Berman and McLaughlin (1977) also suggested that effective principals used their positional power to address activities they disfavored. In the Phi Delta Kappa (1980) study, one elementary school principal used her vested authority to dismiss a teacher who consistently refused to follow her directives to submit weekly teaching objectives. Blumberg and Greenfield (1980)

noted one effective principal telling a colleague that only the principal had the authority to suspend students. In the same study, another principal told parents that he was the only one who would evaluate teachers, whereas yet another used his vested authority to protect the school from becoming involved in a court case. Effective principals also differed from less-effective principals in that they used their authority to allocate resources and to promote an achievement focus (Levine & Stark, 1981; Maryland State Department of Education, 1978; Reinhardt et al., 1979; Venezsky & Winfield, 1979).

Effective principals also enjoyed working with students. In the Maryland (1978) study, some of the principals taught classes in their area of expertise. The effective principal identified by Wilson (1982) had students read to him, made notes about their reading strengths and weaknesses, and forwarded these notes to parents. He also reviewed and made comments on student writing exercises that were given at the beginning and end of the school year and made a point of having every child visit him in his office on his/her birthday. If the child's birthday fell during a holiday period, he sent the youngster a card. In the Felsenthal (1982), Johnson (1985), and Phi Delta Kappa (1980) studies, effective principals had positive attitudes about students; they enjoyed interacting and being with them. At the other extreme, less-effective principals were far removed from students (Leithwood & Montgomery, 1982).

Effective principals have been found to be more supportive of teachers than are their less-effective counterparts (Armor et al., 1976; California State Department of Education, 1977; Maryland State Department of Education, 1978; Phi Delta Kappa, 1980; Venezsky & Winfield, 1979). In the California study, effective principals encouraged the implementation of new ideas, supported their staffs in times of confrontation, enhanced school-community relationships, enforced discipline policies, and acquired and distributed necessary materials. In the Armor et al. study, effective principals gave teachers the requested instructional assistance while keeping extraneous disruptions to a minimum. In the Maryland study, effective principals taught classes to permit teachers to work on projects requiring their attention. In the Berman and McLaughlin (1977) and Venezsky and Winfield (1979) investigations, effective principals provided teachers with needed curriculum materials and promoted the use of new curriculum texts, ideas, and methods. They were also actively involved in helping teachers implement new programs (Leithwood et al., cited in Leithwood & Montgomery, 1982). On the other hand, less-effective principals were characterized by Leithwood et al. as being less open to innovative thinking.

Effective principals were also described as excellent communicators who facilitated within-school communication by building and maintaining healthy interpersonal relationships with others. In addition to establishing productive one-on-one communication relationships with staff, effective principals were known to encourage and promote interactions between teachers (Berman

& McLaughlin, 1977). Venezsky and Winfield (1979) noted that effective principals paired teachers in order to promote dialogue regarding curriculum issues. In a Leithwood and Montgomery (1978) study, effective principals also promoted healthy school-community communication systems using a variety of approaches: holding meetings and conferences, creating teacher/parent work groups, and becoming involved in a variety of community groups themselves. In the Venezsky and Winfield investigation, effective principals used parent/school exchanges to build community support for the schools' goals and priorities and periodically sent memos home advising parents how they could become more actively involved in their children's education. Finally, in the Phi Delta Kappa (1980) study, parents supervised classes while teachers attended in-service sessions and also participated in a teaching-methods course to help their children improve their reading skills. At the other extreme, less-effective principals consciously kept parents far removed from either the school's goals or its decision-making processes (Crowson, 1980).

Effective principals also differed from less-effective administrators in terms of the kinds of information they shared with others. In the Venezsky and Winfield study (1979), the effective principal informed his staff of the school's goals and priorities and sent memos to parents containing the same information. One principal in the Phi Delta Kappa (1980) study used staff meetings to inform teachers of the school's goals and shared

this information with parents. In addition, the same principal reviewed student achievement results with teachers. The same was true of effective principals identified in the Brookover and Lezotte (1979) and Venezsky and Winfield studies. In contrast, less-effective principals limited the information they shared with their staffs to central-office/management-related issues (Crowson, 1980).

Principals used many strategies associated with goals, substantiating the importance of goals in promoting effective schools. Effective principals used goals and goal planning to promote staff participation in the decision-making process (Phi Delta Kappa, 1980; Utz, 1972). Effective principals also used goals to clarify expectations (Maryland State Department of Education, 1978; Phi Delta Kappa, 1980). Blumberg and Greenfield (1980) reported that effective principals used goals to gain community and central-office support, whereas Goldhammer et al. (1971) suggested that effective principals deliberately created teacher curriculum/planning groups to nurture the development of school-wide goals. In the Phi Delta Kappa and Maryland studies, effective principals established staff-input procedures to involve teachers in the decision-making process.

Effective principals were also characterized as strongly believing in the value of having goals (Blumberg & Greenfield, 1980) and were known to have well-defined, -written, and -communicated goal-based policies (Phi Delta Kappa, 1980; State of New York, 1974; Wynne, 1981). Less-effective principals frequently lacked precise goals, and their planning around goals was less concrete than that

of effective principals (Utz, 1972). They were also described as being less assertive (Brookover & Lezotte, 1979), considered every problem to be equally important (Venezsky & Winfield, 1979), and were seen by others as being more reactive than proactive (Chesler et al., 1975). Possessing limited goals, less-effective principals complained that there was not enough time in the day to do what was expected of them or to accomplish what they felt they should. In contrast, effective principals were able to manage their time efficiently and effectively (Blumberg & Greenfield, 1980; Maryland State Department of Education, 1978).

In terms of Leithwood and Montgomery's (1984) hierarchy, less-effective principals at the ADMINISTRATOR level selected strategies based on personal needs to control others and to maintain a distance from classroom issues. Most strategies they did use were based on vested authority and were designed to assist staff with routine issues, and they attended to factor-specific strategies only superficially. At the HUMANITARIAN level, principals emphasized interpersonal-relationship strategies. They perceived that their main task was to make the teachers' job easier, and they made little use of factor-specific strategies. At the PROGRAM-MANAGER level, principals used a limited number of "proven" strategies that they selected on the basis of student needs and on their desire to be fair and consistent, they used strategies to promote efficient use of time, and they used factor-specific strategies based on personal experience or on central-office directives. At the highest level in

the hierarchy, the PROBLEM-SOLVER level, principals used a number of strategies based on numerous criteria: goals, factors, and environmental variables. They also used appropriate factor-specific strategies to achieve desired goals.

Like the factor-behaviors research, the strategy research also suggested that principals made a cognitive assessment of how they would accomplish a desired outcome. The research also suggested some principals were more comfortable than others endorsing behaviors that would increase the likelihood of their achieving goals. As Bandura (1984) stated, being comfortable with a given behavior was related to self-efficacy evaluations of both competence and confidence. Individuals were willing to perform behaviors when they estimated, correctly or incorrectly, that they would be successful, just as they would avoid and/or withdraw from situations in which they felt uncomfortable or threatened. The strategy research also suggested that what is important is what gets measured. Effective principals were described as those who collected and monitored select data bases that were tied to what they wanted to see happen in their schools. With this in mind, it was assumed that principals in the more effective schools would place a higher value-efficacy assessment on the strategy behaviors they used to implement change.

Decision-Making Processes

The fourth dimension of the Leithwood and Montgomery (1984) hierarchy is principals' decision-making processes. Based on data

collected under the GOAL, FACTOR, and STRATEGIES headings, Leithwood and Montgomery maintained that principals at the ADMINISTRATOR level used autocratic forms of decision making, focused decisions on running a smooth operation, based decisions on limited personal sources, and never monitored their decision processes. At the HUMANITARIAN level, principals used participatory forms of decision making, based on the belief that staff participation would make teachers happy. Principals at this level were proactive only in terms of school-climate issues. At the PROGRAM-MANAGER level, principals were skilled at using a variety of decision-making formats and selected these in terms of urgency and need, valued staff participation in the process itself when it was oriented to the school's program, and based decisions on both personal and professional sources. Further, principals at this level were able to anticipate most decision outcomes and regularly monitored the process itself. At the highest level of the hierarchy, the PROBLEM-SOLVER level, principals were skilled in many forms of decision making, made a connection between the strategy to be used and the setting in which it would be executed, valued participation and focused it on achieving ideal educational goals, based decisions on information from a variety of sources, and anticipated, initiated, and monitored the decision-making processes.

Related Research

Additional support for Leithwood and Montgomery's (1984) hierarchy was found in a related investigation by Huff et al.

(1982). The researchers administered a variety of questionnaires and interviewed both principals and school staffs at 31 schools in Florida. Fourteen average and 17 high-performing principals were involved in the study. Of these, 19 were elementary school principals, 8 were middle/junior high school principals, and 4 were high school principals. This study is noteworthy for two reasons. First, the researchers assessed principal effectiveness using state-mandated achievement data, standardized-test data when available, and an exhaustive nomination/interview process to identify high- and average-performing administrators. Second, in addition to using 41 trained observers to collect data, the researchers employed a new methodological technique known as the "critical incidents" interview process to support their quantitative data. The critical-incidents process involved asking principals to identify their thoughts, feelings, and values as they described, in detail, behaviors and actions that the trained observers had noted during previous school visits. In addition to being useful in substantiating the effective-schools literature, this procedure promised to identify relevant cognitively mediated efficacy processes to explain behavior. The Huff et al. competency model is shown in Table 2.3.

Huff et al. identified six behavioral dimensions organized under six clusters that were common to both average- and high-performing principals and eight additional behavioral dimensions that were unique to high performers. A quick review of the 14 competency headings indicates that Huff et al.'s findings supported and

expanded on Leithwood and Montgomery's (1984) GOAL, FACTOR, STRATEGY, and DECISION-MAKING model.

Table 2.3.--Competencies of average and high-performing principals (Huff et al., 1982).

Cluster	Competencies	
	Basic	High-Performing
Purpose & Direction	Commitment to school mission	Proactive orientation Decisiveness
Cognitive Skills		Interpersonal search Information search Concept formation Conceptual flexibility
Consensus Management	Concern for image Tactical ability	Managing interaction Persuasiveness
Quality Enhancement	Developmental orientation	Achievement orientation Management control
Organization	Delegation	Organizational ability
Communication	Written communication	Self-presentation

Three competency areas were identified in the Purpose and Direction cluster: proactive orientation, decisiveness (sense of control), and commitment to a school mission. With regard to decisiveness competencies, high-performing principals had a take-charge attitude and saw themselves as having control over the fate of their schools. They consciously sought to learn from past experiences, did not dwell on the possibility of failure, and had a broad view of where and how to secure needed resources. On the

other hand, average principals maintained that central-office budgets were their only source of support, they lacked a sense of control, and they tended to avoid taking responsibility for the actions of either students or staff--and, in some instances, even for school property. The second dimension within this cluster, commitment to a school mission, did not differentiate high performers from average performers. The mission espoused by both groups was having a humane concern for teachers and students; everyone was given a chance to succeed/improve, and fairness was a consistent concern of principals in both groups.

The second cluster, Cognitive Skills, encompassed four competency areas: interpersonal search, information search, concept formation, and conceptual flexibility. High-performing principals were vigilant and purposeful in collecting relevant information about their schools. They were also more capable than their less-effective counterparts of collecting information from external sources. In terms of concept-formation competencies, or recognizing patterns, outstanding principals were able to identify trends from individual events while recognizing the interrelatedness of goals, factors, and strategies. They also tended to use analogies to explain such connections to the research team and to their teachers. High-performing principals were also more objective in their assessments of others' motives and points of view. They recognized and considered the perceptions of others and were better analysts. They could expeditiously identify advantages and disadvantages

associated with optional activities and had a clearer perspective of the associated issues surrounding an event.

The third cluster, Consensus Management, also had four competency subdimensions: concern for image, managing interaction, tactical ability, and persuasiveness. All 31 principals in the sample were concerned about the image of their schools as projected to others by students and staff, and all 31 "sold" their schools and defused information that could lead to the development of negative attitudes. All 31 also included both school and community members in planning and problem-solving activities. The principals viewed parents as resources, delegated responsibility to capable individuals and groups, and kept those interested informed. High- and average-performing principals did not differ significantly with regard to tactical ability. Both groups were able to select a specific strategy to produce a desired effect, and both were able to change from one strategy to another if the first was not working. High- and average-performing administrators did differ significantly on the fourth dimension, persuasiveness. High-performing principals were very successful persuaders and used a variety of techniques, including modeling expected behaviors, using concrete information, identifying the other party's "best interests," and, when necessary, becoming directive and telling others what they would do.

The fourth cluster, Quality Enhancement, included three subdimensions: developmental orientation, achievement motivation, and management control. High-performing principals had a desire to

excel and to improve their schools, especially in the area of student scores; they were clear on their objectives and used these as a mind-set to guide their actions and to establish priorities. They also made their objectives and expectations clear to others--they were committed to quality. High-performing principals were involved in changing their schools. They were proactive and took the initiative to get things started, took advantage of every opportunity that would help them achieve valued goals, never gave up when facing obstacles, and focused everyone's attention on what had to be done. Both high- and average-performing administrators made specific suggestions to individual teachers and teacher groups and supported teachers in times of crisis and/or concern. Both groups were also specific when praising performance but were quick to let others know when their performance was substandard; they were equally decisive in removing others when they refused to change.

With regard to the Organization and Communication clusters, Huff et al. noted that high-performing principals were better organized and more capable communicators who frequently used stories and metaphors to explain situations.

Summary

The literature suggested that loose couplings characterize within-school and school-to-district-office relationships and that union contracts, even in the most unionized environments, do not necessarily delimit administrator behavior. This would indicate that administrators have considerable latitude in determining the

behaviors they will endorse or avoid. At the same time, the literature related to efficacy implied that behavior is arrested at some level in an ascending hierarchy because of past experiences and assessments of one's competence and confidence levels. Further, the effective-schools literature described more- and less-effective principals differently, especially in terms of goal-related behaviors. Indeed, the literature suggested that cognitively mediated goal information could be a pivotal factor in ultimately determining all behavior--be it factor, strategy, or decision-making behavior. If one thing was certain in the literature, it was that effective schools were directed, that activities were purposeful, and that the effective principal knew where he wanted to go and was determined to get there. This image of an effective school contrasted with the picture painted of less-effective buildings, where the best one could imagine was that the school was functioning. In the literature these schools were described as organizations in which activities were vaguely related to one another and whose principal was at a loss to explain where he wished to go, let alone detail where he was.

CHAPTER III

DESIGN OF THE STUDY

General Design

This study was a two-phase investigation of the efficacy construct as it related to elementary school principals in low-, in-between, and high-performing Michigan schools. Phase one activities were designed to address questions dealing with measurement issues. As mentioned earlier, the literature suggested that efficacy levels can be assessed using either situation-specific or more generalized items. A related area of interest addressed during this phase was determining the relative worth of including an importance dimension as part of the efficacy construct. At the time of writing, all efficacy studies completed in an educational setting had limited their assessments to two dimensions, namely a competence and a confidence dimension. In phase two, the researcher conducted eight interviews with a random sample of elementary school principals in low- and high-performing schools. The interview data were incorporated into the investigation to generate rich descriptions of principals' efficacy-based belief systems. Interviews were not arranged for principals in the in-between sample so as to expedite the identification of differences in efficacy between principals in low- and high-performing schools.

The Sample

The most recent Michigan Educational Assessment Program (MEAP) data, dated January 5, 1987, were used to identify low-, in-between, and high-performing elementary schools. A low-performing school was defined as one in which 75% or less of the students had mastered minimum competency levels in both mathematics and reading for three consecutive years, 39 or more students in grade four had taken the tests, and whose results the State Department of Education had described as stable or declining. A high-performing school was defined as one in which 90% or more of the students had mastered minimum achievement levels in both mathematics and reading for three consecutive years, more than 39 students had taken grade-four MEAP tests, and whose results in both subject areas for the past three years had been categorized by the State Department of Education as stable or improving. In response to some of the criticisms directed at the effective-schools research (see Rowan, Dweyer, & Bossart, 1985), the investigator decided also to investigate in-between schools or those in which achievement levels fell between 75% and 90%.

Using the above criteria, achievement data for 1,851 schools located in 567 districts were reviewed. Seventy-seven low-performing, 41 in-between, and 78 high-performing schools were identified in the initial review. As the number of schools in any one category was smaller than expected, a decision was made to include schools in which one score in one subject for one year was outside the parameters established for the first review. For

instance, a school could be classified as low performing if 75% or less of the students had achieved mastery in language for three consecutive years and in only two of the three years in mathematics, or vice versa. The criteria that the school's achievement performance remain stable and that class size be 39 or more were retained. Allowing this one exception increased the low-performing-school sample by 26 schools, the in-between sample by 71, and the high-performing-school sample by 32 schools. Using the revised criteria, 97 low-performing, 112 in-between, and 110 high-performing schools were selected. The final target population included 319 schools located in 194 school districts. Mean achievement data over the three-year period for both respondent and nonrespondent schools are found in Tables E1 through E6, Appendix E.

Instrumentation

The researcher designed two questionnaires to assess efficacy levels. The first instrument contained 82 items. Eighty items were based on a review of the effective-schools/leadership literature; Items 81 and 82 were the Rand questions used in the Armor et al. (1976) investigation. Twenty items were generated for each of the four general effectiveness domains identified by Leithwood and Montgomery (1984): 20 GOAL items, 20 FACTOR items, 20 STRATEGY items, and 20 DECISION-MAKING items. To build a hierarchical structure into the questionnaire, approximately five items for each level found in the Leithwood and Montgomery typology were developed: five at the ADMINISTRATOR level, five at the HUMANITARIAN level,

five at the PROGRAM-MANAGER level, and five at the highest or PROBLEM-SOLVING level. In addition, three forms of the questionnaire were created to ascertain whether the ordering of the ability, confidence, and importance variables affected self-assessments of efficacy. (See Appendix A for the final version of this instrument.)

The researcher created the second efficacy questionnaire using Gibson's Teacher Efficacy Scale (in Gibson & Dembo, 1984). (See Appendix B.) This instrument contains 30 items; 15 assess personal efficacy levels and 15 assess teaching efficacy levels. To modify this instrument for the current investigation, the word "principal" was substituted for "teacher," the word "teacher" for "student," and the word "superintendent" for "principal." Where such substitution was impossible, a new item was written that reflected the intention of the original.

Sixteen items were modified by substitution. For example, Item 1 on the Gibson questionnaire read, "When a student does better than usual, many times it is because I exerted a little extra effort." In modified form the question read, "When a teacher does better than usual, many times it is because I exerted a little extra effort." Nine additional items were modified slightly. For example, Item 2 on the Gibson questionnaire, which read, "The hours in my class have little influence on students as compared to the influence of their home environment," was changed to read, "The hours I spend working with teachers have little influence on teachers as compared to the

influence of other teachers." Five items (4, 19, 23, 27, and 29) were rewritten items designed to reflect the intention of the original. For example, Item 4 on the Gibson instrument, "The amount that a student can learn is primarily related to family background," was changed to read, "The degree that a teacher can change his/her behavior is primarily related to factors outside of the schools' control." Further, the order of the items was altered, and an importance component was added. (See Appendix C for the revised version of Gibson's scale.)

Content validity for the effective-schools/leadership questionnaire was determined by having the instrument reviewed by two respected effective-school-improvement practitioners, Dr. L. Lezotte and Dr. B. Rowan. Their suggestions regarding the wording of items were incorporated in the reviewed questionnaire. Dr. B. Lent and Dr. J. Straubhaar reviewed both the effective-schools/leadership questionnaire and the modified Gibson instrument. Dr. Lent had investigated the efficacy construct as it relates to vocational education, whereas Dr. Straubhaar has studied under Bandura. Dr. Lent recommended that a ten-point versus six-point Likert scale be used to measure efficacy levels. At the same time, he concurred with the researcher's position that using a six-point scale similar to the one used by Gibson would be best because statistical comparisons were to be made between both questionnaires.

Dr. Pat Ashton, principal researcher for the NIE Teacher Efficacy Study (Ashton et al., 1982, 1983), provided additional advice regarding the modified Gibson questionnaire. In addition to

making recommendations relating to substitute items, Dr. Ashton suggested that the format of the original efficacy scale should be changed. To elaborate, the original questionnaire combined the efficacy and importance variables using an abbreviated Likert format. For example, on the original document, Item 1 read, "When a teacher does better than usual many times it is because I exerted a little more effort (D MD SD SA MA A). It is very important to me to work extra hard with teachers to ensure that they do their best (I MI SI SU MU U)." Dr. Ashton suggested that the format was cumbersome and confusing, so the writer decided to eliminate the letter designations and to substitute numerical values.

Pilot Study

A pilot study of both questionnaires was initiated in February 1987. Elementary school principals attending evening classes at Michigan State University, as well as those enrolled in two off-campus programs, were asked to complete one of the two questionnaires. Because of the small sample size for each of the two questionnaires, the researcher decided not to run a statistical analysis of the pilot-study data. Twenty-one of 30 questionnaires were returned for analysis. Sixteen of the 21 respondents also completed a questionnaire-evaluation sheet. The average completion time varied from a low of ten minutes to a high of two hours. The average was 20 minutes. Seventy-seven percent of the respondents said they understood the purpose of the research, 90% stated that the directions were clear and concise, all of them said the

questionnaire items were clearly written, 80% found the questionnaire interesting, and finally, 90% were not offended by any items on the questionnaire.

The Target Population

Because the ordering of the ability, confidence, and importance variables was changed for the effective-schools/leadership questionnaire and the order of the efficacy and importance variables was reversed on the modified Gibson questionnaire, five questionnaires were generated. Three of the five questionnaires were based on the effective-schools/leadership literature. On Form A, the variables were ordered as follows: ability, confidence, importance; on Form B the order was confidence, importance, ability; and on Form C the order was importance, ability, confidence. With regard to the modified Gibson questionnaire, Form D listed the efficacy items first, whereas on Form E the importance items preceded the efficacy items. A simple random-selection process was used to identify which questionnaire form would be forwarded to a particular school. Included in each questionnaire packet was an endorsement letter from Dr. Lezotte and a demographic questionnaire. (See Appendix A.) The demographic questionnaire included items on number of students, respondent's educational level, years in administration, years in the school system, age, and gender. Also included in each packet was a stamped, return-addressed envelope.

Three hundred nineteen questionnaires were mailed to the target population during the first week of April 1987. (See Table 3.1.) As a result of the first mailing, 129 questionnaires were returned. Fifty-four were received the first week, 56 the second, 9 the fourth, and 10 the fifth. Of these, 48 were Forms A, B, and C and 71 were Forms D and E. In terms of the performance criteria, 43 questionnaires were returned from low-performing schools, 46 from in-between schools, and 46 from high-performing schools. The return rate for Forms A, B, and C was 30.36%; for Forms D and E it was 55.90%.

Table 3.1.--Distribution of questionnaires to target population.

Performance	Questionnaire Form					Total
	A	B	C	D	E	
Low-performing	19	20	19	20	19	97
In-between	22	22	23	22	23	112
High-performing	22	22	22	22	22	110
Total	63	64	64	64	64	319

Four additional questionnaires were received but were not included in the final analysis. Two of them lacked identification and the other two were incomplete. The incomplete questionnaires came from two large metropolitan areas. Both had attached notes stating that permission had to be granted by their respective Central Office Directors for Research before they could complete the

questionnaire. This situation eliminated one high-performing and 34 low-performing schools from the target population. The researcher called both districts in an attempt to expedite the approval process. He could not reach the Director for Research for one system, and in the second system, the approval process was considered prohibitive. Thus, the researcher decided to eliminate the 37 schools from the sample, while including 14 schools that did respond from one of those systems. This increased the return rate for Forms A, B, and C to 44.84% and for Forms D and E to 66.95%.

To improve the return rate, the researcher telephoned 48 schools and sent letters to another 105. He contacted 40 administrators in the 48 schools he telephoned. All but two assured him that they would complete the questionnaire. As a result of this effort, 32 additional questionnaires were returned, and a final return rate of 60.52% was realized. Table 3.2 shows the number of each of the questionnaire forms returned by principals in the low-performing, in-between, and high-performing schools.

Table 3.2.--Distribution of completed questionnaires: final sample.

Performance	Questionnaire Form					Total
	A	B	C	D	E	
Low-performing	9	9	5	7	15	45
In-between	9	11	9	14	16	59
High-performing	10	9	8	15	13	55
Total	28	29	22	36	44	159

A series of two-tailed analyses of variance (ANOVAs) comparing achievement data between schools whose principals did respond to the questionnaire and those whose principals did not respond failed to identify significant differences between groups at the alpha = .01 level. Principals who returned questionnaires and those who did not return them were also similar in terms of gender. Seventy-five percent of the responding sample were males, compared to 73% of the nonresponding sample.

Phase two activities, which included creating an interview guide and selecting interview sites, resulted in visits to eight schools within a 70-mile radius of Michigan State University. The interview guide was based on a document that was originally used by Huff et al. (1982) in an investigation of high- and average-performing administrators in Florida. As the interview guide had been successfully pilot tested in the Florida study, the researcher decided that no further validation of the instrument was required. However, a small pilot study in which he interviewed two principals, one from an effective school and another from a less-effective school, suggested that the interview guide could be used successfully to identify cognitive processes affecting behavior. The major difference in instrumentation was that in this pilot the researcher asked general questions about the five major effective-schools correlates, whereas in the Florida study a critical-incidents format was followed. Huff et al. suggested that the major events the respondent was asked to recall possessed significant

meanings that in all probability affected the person's behavior. As a comparison, in the Florida study respondents were asked, "What are your perceptions about a school having a mission statement?" In the current investigation the question was reworded to read, "Describe a situation where you talked to your staff about school missions." The latter was used to capture the individual's attitudes and feelings and what he/she had learned from the situation being described. A copy of the interview guide can be found in Appendix D.

Visitation sites were randomly selected by creating four lists. Two lists contained the names of principals in low- and high-performing schools who had completed Form A, B, or C; the remaining lists contained the names of principals in low- and high-performing schools who had completed Form D or E. The researcher contacted the principals by phone and established interview times for the two-week period after school closed in June.

Research Questions

This investigation was designed to test the hypothesis that high-efficacious principals are administrators of high-performing schools and low-efficacious principals are administrators of low-performing schools. The writer assumed that principals in high-performing schools would rate themselves higher in terms of their ability to perform specific behaviors, that they would expect more success in performing these behaviors, and that they would place more importance on performing them than would their counterparts in

low-performing schools. An interview component was incorporated into the investigation to substantiate the quantitative data and to generate descriptions of how principals in low- and high-performing schools had cognitively processed information differently.

The following related efficacy-assessment questions were also addressed in the current investigation:

1. Are there differences among the five questionnaire formats used to assess administrators' efficacy levels?

2. Can a statistically consistent efficacy questionnaire be developed to assess efficacy?

3. Which efficacy questionnaire format is the best predictor of school performance?

4. To what extent will the inclusion of an Outcome Value (Importance) dimension contribute to the identification of efficacy levels?

5. Should the efficacy construct be measured using a situation-specific, operationally defined behavioral format, should it be measured using Gibson's generalized format, or should it be measured using a combination of both formats?

Statistical-Analysis Procedures

A series of one-way ANOVAs was completed to determine whether an ordering effect was present in the data. A Cronbach alpha analysis was used to determine reliability quotients, as well as to compare alpha levels stated by Gibson and Dembo (1984) for the Teacher Efficacy Questionnaire with the Modified Administrator

Efficacy Questionnaire. Means, standard deviations, and F-values were used to identify trends. Factor analysis was used to reduce the number of items to be included in further analysis of the data. A series of multivariate analyses of variance (MANOVAs) was also completed to determine whether statistically significant differences existed in the material.

A canonical discriminant analysis was done as a "last ditch effort" (Rummel, 1970) to find significant relationships in the data. Three regression equations were also completed to determine the relative value of including an importance variable in the efficacy construct.

All questionnaire data were keypunched and verified by personnel at the Michigan State University Computer Laboratory using the Statistical Package for the Social Sciences (SPSS). Finally, the interview data were transcribed and incorporated into the findings.

CHAPTER IV

FINDINGS

Demographics

From this point on, Form A, B, and C questionnaires are identified as the Principal Efficacy Questionnaire and Form D and E questionnaires as the Modified Principal Efficacy Questionnaire. Seventy-nine Principal Efficacy Questionnaires and 80 Modified Principal Efficacy Questionnaires were returned for analysis. Twenty-three Principal Efficacy Questionnaires were forwarded from low-performing schools, 29 from in-between schools, and 27 from high-performing schools. Twenty-two Modified Principal Efficacy Questionnaires were received from low-performing schools, 30 from in-between schools, and 28 from high-performing schools. Characteristics for the entire sample were as follows: Most schools had populations between 100 and 499 students, the majority of the sample (75%) were males, most (42%) were between 40 and 49 years of age, 60% had master's degrees, 40% had been employed in an educational setting between 20 and 29 years, and 39% had been principals for 10 to 19 years. Tables 4.1 through 4.6 detail frequency counts for the demographic data.

Table 4.1.--Distribution of respondents by school population and by Principal Efficacy Questionnaire and Modified Principal Efficacy Questionnaire.

No. of Students	Prin. Eff.	Mod. Prin. Eff.	Total
100-499	55	45	100
500-1,000	21	33	54
Over 1,000	3	1	4
Total	79	79	159

Table 4.2.--Distribution of respondents by gender and by Principal Efficacy Questionnaire and Modified Principal Efficacy Questionnaire.

Gender	Prin. Eff.	Mod. Prin. Eff.	Total
Female	16	23	39
Male	63	57	120
Total	79	80	159

Table 4.3.--Distribution of respondents by age and by Principal Efficacy Questionnaire and Modified Principal Efficacy Questionnaire.

Age	Prin. Eff.	Mod. Prin. Eff.	Total
30-39	20	14	34
40-49	25	41	66
50-59	31	20	51
60 or above	3	5	8
Total	79	80	159

Table 4.4.--Distribution of respondents by education and by Principal Efficacy Questionnaire and Modified Principal Efficacy Questionnaire.

Degree	Prin. Eff.	Mod. Prin. Eff.	Total
Bachelor's	1	--	1
Master's	50	45	95
Specialist	19	25	44
Doctorate	9	9	18
Total	79	79	159

Table 4.5.--Distribution of respondents by employment in an educational setting and by Principal Efficacy Questionnaire and Modified Principal Efficacy Questionnaire.

No. of Years	Prin. Eff.	Mod. Prin. Eff.	Total
Under 2 years	1	1	2
6- 9 years	2	1	3
10-19 years	32	26	58
20-29 years	27	36	63
Over 29 years	17	16	33
Total	79	80	159

Table 4.6.--Distribution of respondents by administrative experience and by Principal Efficacy Questionnaire and Modified Principal Efficacy Questionnaire.

No. of Years	Prin. Eff.	Mod. Prin. Eff.	Total
Under 2 years	5	7	12
2- 5 years	8	6	14
6- 9 years	15	11	26
10-19 years	24	37	61
20-29 years	24	17	41
Over 29 years	1	2	3
Total	77	80	157

Questionnaire Analysis

Order Effect

The first research question concerned the ordering of the efficacy variables. A series of one-way ANOVAs confirmed that no ordering effect was present. For the Principal Efficacy Questionnaire only 7 of a possible 240 items were significant, and for the Modified Principal Efficacy Questionnaire only 5 of a possible 120 items were significant. Further, no pattern was associated with significance. Significant items were identified in each of the four factor areas (Goals, Factors, Strategies, Decision Making) on the Principal Efficacy Questionnaire as they were in the four factor areas on the Modified Principal Efficacy Questionnaire (Personal Efficacy, Administrator Efficacy, Personal Efficacy Importance, Administrator Efficacy Importance). As such, the number of significant items was well below what one would expect by chance alone.

Reliability Analysis

Cronbach's (1951) alpha was used to address Research Question 2: Can a statistically consistent efficacy questionnaire be developed to assess efficacy? Recalling that only one instrument had been statistically validated, namely the Gibson questionnaire (in Gibson & Dembo, 1984) that formed the basis for the Modified Principal Efficacy Questionnaire, it was encouraging to find that in 15 of 16 instances alpha levels for the Principal Efficacy Questionnaire exceeded alpha levels accepted by Gibson and Dembo (Table 4.7).

Table 4.7.--Reliability coefficients for the Principal Efficacy Questionnaire and the Modified Principal Efficacy Questionnaire.

Principal Efficacy Questionnaire	Ability	Expectancy	Importance
Goals	0.82	0.91	0.86
Factors	0.82	0.88	0.72
Strategies	0.78	0.87	0.81
Importance	0.83	0.84	0.85

Modified Principal Efficacy Questionnaire	Modified	Gibson & Dembo
Personal Efficacy	0.78	0.78
Administrator Efficacy	0.60	0.75
Personal Efficacy Importance	0.83	
Administrator Efficacy Importance	0.78	

Note: The Gibson and Dembo reliability coefficients are based on only 16 of 30 items listed in their questionnaire; the researchers used loaded factors exceeding 0.45 versus a factor loading of 0.50 for the current investigation.

To elaborate, the highest alpha level reported by Gibson and Dembo was 0.76, compared to a low of 0.72 and a high of 0.91 for the Principal Efficacy Questionnaire subtests. Comparing alpha coefficients reported by Gibson and Dembo with those for the modified version of the questionnaire (Forms D and E) indicated that items used to evaluate Personal Efficacy levels for either instrument were equally valid--both had alpha coefficients of 0.76. At the same time, the Gibson and Dembo Teacher Efficacy items had an alpha coefficient of 0.75 compared to a low of 0.60 for the Principal Efficacy items in the modified instrument. This suggests that although inferences can be made with some confidence regarding the Principal Efficacy Questionnaire data and the Personal Efficacy data generated from the Modified Principal Efficacy Questionnaire, similar inferences based on the Administrator Efficacy items on the Modified Principal Efficacy Questionnaire must be treated with more caution.

Analysis of Data for the Principal Efficacy Questionnaire

Tables E7 through E9, Appendix E, contain frequency counts by item for the Principal Efficacy Questionnaire; Tables E10 through E12 list means, standard deviations, and F-values. Only four items (Items 9A, 67A, 21I, and 29I) were significant. Comparing mean scores indicated that principals in low-performing schools rated their ability and confidence levels higher than did principals in high-performing schools. In contrast, principals in high-performing

schools placed more importance on more behaviors than did their counterparts in low-performing schools.

To elaborate, principals in low-performing schools had higher perceived efficacy levels on 51 ability and 59 confidence items. Principals in high-performing schools identified 48 of 80 items as important. This finding suggests the possibility that principals in low-performing schools exaggerated their ability and expectancy levels, compared to principals in high-performing schools. Principals in high-performing schools, because they placed more importance on more behaviors related to school effectiveness, could have been motivated to test their abilities in more situations than their colleagues and as a result might have acquired more accurate information regarding their actual performance.

Correlations resulting from a comparison using the Rand items and the four subtests of the Principal Efficacy Questionnaire (Table 4.8) were weak. Correlations were positive in relation to the Rand 1 item and negative for all four Rand 2 relationships. Considering Ashton et al.'s (1982, 1983) conclusion that the Rand items were the best predictors of efficacy, this finding indicated that the Principal Efficacy Questionnaire was a poor substitute. At the same time, the positive and negative correlations confirmed the two-fold interpretation of the efficacy construct--namely, that it contains a performance and an expectancy component.

Table 4.8.--Correlation of Rand items and Goals, Factors, Strategies, and Decision Making: Principal Efficacy Questionnaire.

	Goals	Factors	Strategies	Decision Making
Rand 1	0.0758 79 p=.253	0.1552 79 p=.086	0.1468 79 p=.098	0.1733 79 p=.059
Rand 2	-0.2066 79 p=.034	-0.1405 79 p=.108	-0.2165 79 p=.028	-0.2553 79 p=.012

A principal-component factor analysis including varimax and oblimimax rotations was performed to reduce the number of variables on the Principal Efficacy Questionnaire and to establish comparison statistics between the Modified Principal Efficacy Questionnaire and the Gibson instrument. Table 4.9 lists the percentage of variance explained for each subtest. Explained variances on the first factor ranged from a low of 29.6% to a high of 45.6% on the Principal Efficacy Questionnaire subtests (Goals, Factors, Strategies, Decision Making), compared to a low of 21.5% and a high of 33.3% on the Modified Principal Efficacy Questionnaire subtests (Personal Efficacy, Administrator Efficacy, Personal Efficacy Importance, Administrator Efficacy Importance). Because the strength of the first factor to explain most of the variance was at an acceptable level for the subtests, the researcher decided to retain items with factor loadings exceeding 0.50 for further analysis. The same decision rule was used to identify items to retain from the Modified

Principal Efficacy Questionnaire. Tables E14 through E16, Appendix E, list factor loadings by item for each questionnaire.

Table 4.9.--Percentage of explained variance: Principal Efficacy Questionnaire and Modified Principal Efficacy Questionnaire.

Variable Category	Factor Clusters 1	2	3	4	5	6	Number of Items in First Factor
Principal Efficacy Questionnaire							
Ability-G	36.9%	8.9%	6.9%	5.8%	--	--	5
Ability-F	34.5%	8.6%	7.1%	6.1%	5.8%	--	9
Ability-S	29.6%	9.2%	6.8%	6.2%	6.2%	5.8%	7
Ability-D	33.6%	9.5%	7.9%	6.0%	5.9%	--	6
Expect.-G	45.6%	7.4%	6.3%	5.3%	--	--	1
Expect.-F	42.7%	7.9%	6.4%	6.1%	--	--	8
Expect.-S	40.0%	8.1%	7.3%	6.7%	5.6%	--	6
Expect.-D	39.5%	8.4%	6.9%	6.2%	5.7%	--	8
Import.-G	39.1%	8.9%	7.1%	6.3%	--	--	7
Import.-F	37.9%	8.4%	6.6%	5.9%	5.6%	--	5
Import.-S	34.5%	10.0%	7.7%	7.5%	5.0%	--	6
Import.-D	36.5%	9.1%	7.4%	6.1%	5.4%	5.2%	6
Modified Principal Efficacy Questionnaire							
Per. Eff.	31.7%	12.2%	9.3%	7.9%	--	--	4
Admin. Eff.	21.5%	12.7%	10.4%	9.4%	8.2%	--	4
Per. Impt.	33.3%	12.1%	8.0%	7.1%	--	--	7
Admin. Impt.	28.8%	11.1%	9.3%	7.9%	6.8%	--	4

This process resulted in the identification of 22 Ability items, 32 Expectancy items, and 23 Importance items for the Principal Efficacy Questionnaire. With regard to the Modified Principal Efficacy Questionnaire, four Personal Efficacy, four Administrator Efficacy, seven Personal Efficacy Importance, and four Administrator Efficacy Importance items were identified. Loaded items included for further analysis are identified by asterisks in Tables E13 through E16, Appendix E.

The next procedures included a univariate analysis using all items on the Principal Efficacy Questionnaire (Table 4.10), a MANOVA analysis using loaded items (Table 4.11), and a canonical discriminant-function analysis (Bray & Maxwell, 1982) (Table 4.12). No significant relationships were identified in these analyses. A second Pearson correlation analysis was completed using loaded factor items and each of the subtests (Table 4.13). This analysis reconfirmed the existence of the two efficacy constructs identified in the first Pearson analysis using all items. In 11 of 12 analyses, the subtests correlated positively with the Rand 1 item and negatively with the Rand 2 item.

Table 4.10.--Results of univariate and multivariate analysis of variance measures for goals, factors, strategies, and decision making: Principal Efficacy Questionnaire.

Factor	Low-Performing			In-Between			High-Performing			MANOVA			ANOVA		
	M	SD	N	M	SD	N	M	SD	N	F	df	p	F	df	p
Goals	4.7546	.8142	23	4.6325	.7769	29	4.7527	.5642	27	.26	2,76	.774	.2575	2,76	.7737
Factors	4.5452	.9257	23	4.3153	.6932	29	4.6166	.5586	27	1.30	2,76	.278	1.3029	2,76	.2777
Strategies	4.9275	.7577	23	4.9916	.5476	29	5.0626	.5015	27	.31	2,76	.731	.3142	2,76	.7313
Decision Making	5.0329	.6433	23	4.9126	.5977	29	4.8975	.5400	27	.38	2,76	.684	.3819	2,76	.6839

Table 4.11.--Results of MANOVA for Ability, Expectancy, Importance by Performance: Principal Efficacy Questionnaire.

Category	SS	df	MS	F	Sig. of F
Within Cells	40.44	76	.53		
MWithin Ability-Goals	1896.26	1	1896.26	3546.22	.000
Eff. by MWithin Ability	.71	2	.36	.67	.516
Within Cells	48.98	76	.64		
MWithin Ability-Factors	1595.02	1	1595.02	2474.96	.000
Eff. by MWithin Ability	.16	2	.08	.12	.884
Within Cells	33.41	76	.44		
MWithin Ability-Strategies	1983.74	1	1983.74	4511.93	.000
Eff. by MWithin Ability	.42	2	.21	.48	.619
Within Cells	66.58	76	.88		
MWithin Ability-Dec.Mak.	1450.73	1	1450.73	1656.08	.000
Eff. by MWithin Ability	1.84	2	.92	1.05	.354
Within Cells	60.51	76	.80		
MWithin Expecty-Goals	1609.47	1	1609.47	2021.45	.000
Eff. by MWithin Expecty	.28	2	.14	.18	.837
Within Cells	62.95	76	.83		
MWithin Expecty-Factors	1625.90	1	1625.90	1963.02	.000
Eff. by MWithin Expecty	.40	2	.20	.24	.784
Within Cells	76.42	76	1.01		
MWithin Expecty-Strategies	1641.68	1	1641.68	1632.57	.000
Eff. by MWithin Expecty	.36	2	.18	.18	.836
Within Cells	54.89	76	.72		
MWithin Expecty-Dec.Mak.	1667.37	1	1667.37	2308.42	.000
Eff. by MWithin Expecty	1.34	2	.67	.93	.399
Within Cells	50.75	75	.68		
MWithin Import.-Goals	1866.29	1	1866.29	2758.26	.000
Eff. by MWithin Import.	1.35	2	.67	1.00	.374
Within Cells	28.29	75	.38		
MWithin Import.-Factors	2230.36	1	2230.36	5913.40	.000
Eff. by MWithin Import.	.45	2	.23	.60	.552
Within Cells	43.93	75	.59		
MWithin Import.-Strategies	1942.56	1	1942.56	3316.84	.000
Eff. by MWithin Import.	.46	2	.23	.40	.675
Within Cells	53.93	75	.72		
MWithin Import.-Dec.Mak.	1688.14	1	1688.14	2347.72	.000
Eff. by MWithin Import.	.06	2	.03	.04	.961

Table 4.12.--Results of canonical discriminant-functions analysis: Principal Efficacy Questionnaire.

Function	Eigen-value	% of Var.	Canonical Corr.	Wilks' Lambda	X	df	Signif.
1	0.30127	60.56	0.4811636	0.6424366	28.540	36	0.8074
2	0.19620	39.44	0.4049915	0.8359818	11.555	17	0.8263

Rotated Standardized Discriminant Function Coefficients
(Variables Ordered by Size of Coefficient Within Function)

	Function 1	Function 2
Age	1.38157	-0.13442
Years	-1.27359	-0.02006
Importance-Goals	0.71204	-0.09587
Expectancy-Decision Making	0.60890	0.11267
Ability-Goals	0.56332	0.05407
Expectancy-Goals	-0.52565	0.32518
Students	0.27864	0.06673
Importance-Decision Making	-0.27729	0.21250
Sex	0.24526	0.13484
Ability-Strategies	0.22467	-0.13328
Expectancy-Strategies	-0.21871	-0.21718
Employment	-0.16243	0.98611
Ability-Decision Making	-0.23454	-0.73146
Importance-Strategies	-0.20747	0.57824
Education	0.05305	-0.47988
Expectancy-Factors	-0.07495	-0.47146
Importance-Factors	-0.23477	0.42434
Ability-Factors	-0.13542	0.17146

Table 4.13.--Pearson correlation coefficients: Rand items by Principal Efficacy Questionnaire subtests.

Test	Rand 1			Rand 2		
	Ability	Expect.	Import.	Ability	Expect.	Import.
Goals	0.0442	0.1306	-0.0355	0.1957	-0.1416	-0.2092
	79	79	79	79	79	79
	p=.349	p=.126	p=.378	p=.042	p=.107	p=.032
Factors	0.3095	0.2473	0.0691	-0.1627	-0.1617	-0.3045
	79	79	78	79	79	78
	p=.003	p=.014	p=.274	p=.076	p=.077	p=.003
Strategies	0.3368	0.2512	0.1178	-0.2187	-0.0122	-0.0765
	79	79	78	79	79	78
	p=.001	p=.013	p=.152	p=.026	p=.458	p=.253
Decision Making	0.0127	-.1671	-.0601	-0.1223	-0.1176	-0.1150
	79	79	78	79	79	78
	p=.456	p=.071	p=.301	p=.141	p=.151	p=.158

Analysis of Data for the Modified Principal Efficacy Questionnaire

Means, standard deviations, and F-values by item for the Modified Principal Efficacy Questionnaire are found in Tables E17 through E24, Appendix E. A MANOVA analysis (Table 4.14) and a canonical discriminant-functions analysis (Table 4.15) failed to identify significance. Because ordinal data were used for the Modified Principal Efficacy Questionnaire, three regression equations (Tables E25 through E27, Appendix E) were generated to identify the strength of the Importance factor. Again, significant regression equations were not found in the data. Further, the coefficient of determination was low for all three equations (0.16

for the low-performing-school sample, 0.13 for the in-between-school sample, and 0.20 for the high-performing-school sample). Squaring the partial-correlation data also indicated that the inclusion of the Importance factor did little to explain variance in the data based on effectiveness.

Table 4.14.--Results of MANOVA of items by performance: Modified Principal Efficacy Questionnaire.

Subtest	Item	df	F	Sig. of F
Personal Efficacy	20	74,1	.24	0.788
	24	74,1	.63	0.534
	28	74,1	1.52	0.635
	29	74,1	.46	0.635
Administrator Efficacy	2	73,1	.46	0.192
	16	73,1	.31	0.736
	23	73,1	.31	0.734
	26	73,1	1.13	0.329
Personal Efficacy (Importance)	14	72,1	1.68	0.194
	18	72,1	1.13	0.327
	19	72,1	.37	0.694
	24	72,1	.14	0.867
	25	72,1	.47	0.628
	28	72,1	.07	0.935
	29	72,1	.94	0.395
Administrator Efficacy (Importance)	2	77,1	.00	0.996
	22	77,1	.80	0.454
	23	77,1	.64	0.528
	30	77,1	.87	0.423

Table 4.15.--Results of canonical discriminant-functions analysis: Modified Principal Efficacy Questionnaire.

Function	Eigen-value	% of Var.	Canonical Corr.	Wilks' Lambda	X	df	Signif.
1	0.26746	64.26	0.4593720	0.6868004	26.488	20	0.1503
2	0.14877	35.74	0.3598689	0.8704944	9.778	9	0.3688

Rotated Standardized Discriminant Function Coefficients (Variables Ordered by Size of Coefficient Within Function)

	Function 1	Function 2
Administrator Efficacy (Importance)	0.68222	0.47812
Personal Efficacy (Importance)	-0.66214	-0.09011
Years	0.57170	0.20408
Students	-0.55606	-0.14915
Education	0.54705	-0.15204
Administrator Efficacy	0.37760	-0.19249
Personal Efficacy	-0.15986	-0.13794
Employment	0.08506	-1.32902
Sex	-0.21825	0.75664
Age	-0.62695	0.63875

Mean Differences

Mean scores by item by school performance were arranged in hierarchical order for both questionnaires (Tables E28 through E43, Appendix E). Items with the highest mean scores were interpreted as behaviors principals were comfortable performing; those with low mean scores were interpreted as behaviors principals found difficult. No glaring differences were identified that separated principals in low-, in-between, and high-performing schools. In most cases the same behaviors were identified; where differences did

exist, those discrepancies were negligible. Further, the ADMINISTRATOR, HUMANITARIAN, PROGRAM-MANAGER, and PROBLEM-SOLVER schema hypothesized by Leithwood and Montgomery (1984) was not found in the Principal Efficacy Questionnaire data. To elaborate, although five questions were created for each of the four hierarchical dimensions of the model, the resulting mean scores ranked by item failed to identify clusters that paralleled the Leithwood and Montgomery model.

A final analysis of the questionnaire data involved the identification of questionnaire items on which the mean scores of the respondent groups differed by a half point or more. Results of this analysis suggested that principals in low-performing schools believed they were more competent in performing the following behaviors: selecting and/or creating survey questionnaires to identify school-improvement needs, conducting school/community needs assessments, identifying specific reasons to visit a classroom, constantly enforcing discipline rules, preventing unwanted intrusions into high-priority school activities, using specific techniques to reach consensus, making unpopular decisions, and questioning their own behavior when teachers were upset.

In terms of confidence levels, the same principals were more efficacious in conducting school/community assessments, getting through to difficult teachers, making sure that their directives were followed, and ignoring or circumventing policies that prevented them from achieving desired goals. In two instances principals in

the low-performing sample ranked items higher on importance than did principals in the high-performing sample. This was for Items 8 and 40, concerning the identification of positive and negative factors that had an impact on goal attainment and acquiring external funding and support to achieve goals.

In only one instance did principals in the high-performing schools rate their ability levels higher than did their colleagues in low-performing schools. In this regard, principals in the high-performing sample indicated that their behavior had an effect on staff. They also had higher confidence levels in terms of maintaining high levels of community involvement and delivering in-service programs in an area of expertise. Further, the same principals placed more importance on selecting and/or creating survey questionnaires to identify school-improvement needs, actively participating in teacher in-service activities, and delivering in-service programs in an area of expertise.

Analysis of Interview Responses

Eight principals, three in low-performing schools, four in high-performing schools, and one who had replaced a dismissed principal during the course of the study, were questioned using a 31-item critical-incidents instrument (Appendix E). Interviews lasted an hour and a half to two hours and were scheduled after students had been dismissed for summer vacation. The three low-performing schools were located in large metropolitan areas. One community could be described as impoverished, another as inner-city,

and the third as a mixed-income area. Schools in the high-performing sample were located in more pleasant surroundings. One was situated in a small, single-industry town, another in a rural setting, and two in large, well-to-do, urban areas. The researcher made the decision rule that whenever two of the three principals in the low-performing sample or three of four in the high-performing sample gave similar responses, similarities existed within groups. Further, whenever the responses of the new principal concurred with comments made by principals in the high-performing sample, they were included in the material for that sample.

In terms of demographic characteristics, the low-performing sample included three males and one female; three were over 30 years old and one was between 40 and 49. One had been employed in the public school system more than ten years, another for more than 20 years, and two for more than 29 years. Administrative experience also varied. One interviewee had had fewer than two years of experience, and three had had between 20 and 29 years. Three had master's degrees and one a doctorate. Principals in the high-performing schools were somewhat less experienced and younger. All four were males. Two of these principals were over 30, one over 40, and the fourth over 60. Two principals had been working in the public school system between 10 and 19 years, one for more than 20 years, and a third for more than 29 years. One interviewee had been in an administrative position between 2 and 5 years, another between 10 and 19 years, a third for 20 to 29 years, and the fourth for more

than 29 years. Three had master's degrees and one a specialist degree.

General Patterns

Two interesting patterns emerged from the interview data: (a) principals in the high-performing sample were more explicit and knowledgeable in describing their abilities, and (b) principals in the high-performing sample were goal directed, even before they became principals. It can also be stated that this "sense of mission" directed subsequent behavior.

To elaborate, principals in the high-performing schools were more knowledgeable about their own performance and what others thought of their schools. When asked to describe what others thought of them and their schools, and why, one stated, "Right now . . . pretty great. I hear some pretty positive comments from parents. I feel quite positive. . . . I think that others think I am very progressive." Another stated, "I think that most people like the work I do very much. I would say I've always gotten good feedback from teachers, parents, from administrators, about the work I've done. I've always gotten positive feedback." A third said, "I think they think I am competent. I know my boss does through his evaluations and his comments at meetings. I think that I have the respect of my colleagues and that they think that I have a good building." And a fourth said, "I think that most people think that I am a positive person. . . . I'm pro-teacher. . . . I think that parents have quite a lot of confidence in me to handle a lot of

things to help kids learn. Frankly, I get a lot of positive feedback--from staff, the superintendent, students."

Principals in the low-performing schools responded quite differently. With regard to the same questions, one sat in silence and ignored the query. Another said, "I don't think that others see me as an excellent principal but as a good adequate one"; and the third commented, "The community is pretty well satisfied with us, although central-office personnel see me as a thorn in their side." Unlike principals in the high-performing sample, all three principals in the low-performing group were unable to give supporting evidence for their respective statements. Their information was limited to impressions and was not based on factual feedback from the client system.

Information Search

Two interview questions concerned gathering information from others in a one-to-one situation and collecting information to solve a complex problem. Principals in the high-performing schools were more skillful in eliciting and willing to gather information from external sources. Describing parent conferences, principals in the high-performing sample portrayed themselves as active listeners and good communicators. For instance, one principal stated, "I very definitely try to find out what the other's point of view is. . . . I want to know what they are saying and I want also . . . I would hope that I would get to know the person enough personally so that I would also know where that person was coming from." A second said,

"I try to give parents the information I have, create an environment so they're feeling comfortable about asking questions they have, and show them that I was concerned about their feelings." A third talked about a parent who phoned the school concerning a failing mark her son had received on a final report. The parent thought the school had not done enough to help the child. The principal went on to describe how he listened to the parent and told her that he didn't exactly agree with the statements she was making but that "her perception is her reality and that really counts." And a fourth, who was typical of principals in the high-performing sample, stated, "I try to summarize my conversations with parents to make sure that they understand what we've discussed."

In terms of seeking information from others, principals in the high-performing schools consulted more people when faced with a complex issue. One described how she met with all staff members to review discipline policies and what might be done to address the issue. She stated, "Some I just instituted and others we worked on together. A second principal talked about using his school advisory team (six teachers who headed teacher teams that made recommendations about the school's operation) and meeting with the entire staff to address his goal for the school to have a five-year school-improvement plan. He said, "I think I know about every problem in the building one way or another. . . . We talk about a lot of things. . . . Everything goes to the staff. . . . I think that I set up a climate in this building so that people feel free to express how they feel about things." The same principal also

collected information from peers and periodicals. A third administrator, talking about his teachers' desire to group students homogeneously for reading instruction, described how he collected information from individual teachers, teacher groups, and research periodicals. And if an issue was too complex, principals in high-performing schools sought assistance from external sources. One stated, "Sure, I seek outside help from time to time because sometimes it's a problem with the number of hands you have." Another said, "I do a lot of mental work on it. . . . I also talk to other people to get their ideas and their views. . . . It doesn't bother me." A third responded, "I look around and accept the fact that I need help."

In contrast, principals in the low-performing sample described one-on-one discussions with others as events. One principal said, "I just have to lump them together." A second tersely replied, "I am politically astute and know what to ask and when"; a third, when asked whether he ever sought another's point of view, said, "It depends on whether it's parents or staff." Continuing, the same principal stated that teachers usually told him what was on their minds whether he wanted to hear it or not.

Typical principals also limited their information searches. Describing the most complex issue they had faced in the last year and where and from whom they collected information, one principal in the low-performing sample talked about a timetabling issue and said, "These issues are really decided downtown." A second, describing

how he created a security policy for his school, stated, "I have two union representatives and we talk to one another all the time." A third reviewed any problems with his secretary. When the district wanted to start a breakfast program in his building, he went to his secretary and talked to "a couple of staff members." Seeking external information or assistance was unthinkable for principals in the low-performing schools. One said, "I like to keep problems here and protect the staff." Another stated, "I do everything to keep a problem here" and went on to say that he did not like to see calls going downtown because they made his school look bad.

Principals in the low-performing schools not only wanted to keep problems at the school, they also ignored issues external to the school. For instance, principals were asked to describe situations in which they had been the target of negative criticism and what they had done to address the issue. All three principals in the low-performing sample did nothing to control negative publicity. One described a situation in which a group of parents in his community had tried to dismiss him because he allegedly "put kids in closets and sold dope." His response was to do nothing and to let a counter group of parents go downtown to fight for his retention.

Only three of the five principals in the high-performing sample had stories to tell about being the brunt of negative criticism. In each instance, they sought support and advice from external sources, namely, central-office personnel. One situation involved staff criticism about how discipline was handled in the school. This

incident had occurred in another building, when the interviewee was a vice-principal. The principal described how a secondary consultant from central office had been engaged to mediate the impasse between administration and staff. In the second incident, a principal described a situation in which he consulted with the superintendent when a parent was accusing him of mismanaging Title I funds. In the third case, the principal sought and received advice from colleagues and peers. Unlike principals in the low-performing sample, who simply dismissed criticism from others, principals in the high-performing schools described these experiences as "stressful." They also stated that they had learned how to deal with conflict from their experiences. As one principal said, "I guess that I let a lot of things just roll off. . . . That doesn't mean you don't care. . . . It's really not worth worrying about--you have to draw lines sometimes."

The interview material suggested that principals in high-performing schools believed in their ability to collect information from a variety of sources. They were comfortable establishing open communication networks, and they actively sought input from others. They also considered feedback about their own performance to be important. They were efficacious information collectors.

Sense of Mission

Looking at past experiences that could be revealing in terms of current efficacy perceptions indicated that principals in the high-performing schools came from more active environments than did their

colleagues. Describing public school experiences, principals in the high-performing sample had been involved in their schools and came from supportive home environments. One principal had been involved in a cadet teaching program in which he had supervised classrooms and assumed teaching duties for teachers on sick leave. Two others repeatedly had been elected to leadership positions for a variety of school organizations and events. Two had been Eagle Scouts and three had been members of athletic teams. Three of the five also mentioned the support they had received from parents. One stated, "I was the model student and son, and my parents were always supportive." Another said, "Whenever my father looked at my report card he would say, 'You can't keep your mouth shut and behave. Do you want to end up like me driving a bread truck, because if you do I'll kill yeh!'" Principals in the low-performing sample did not talk about their parents and described their public school experiences in lackluster terms. One said, "The whole purpose of life was to have a good time and playing basketball or baseball or whatever was in season," whereas another responded by simply saying, "Uneventful."

The same pattern was also evident in the descriptions principals provided about their post-high-school experiences. Seven of the eight principals had gone directly from high school to university. The other had attended a seminary for 20 months, was asked to leave, served in Viet Nam, and then entered university. Concerning differences between the groups, principals in the

high-performing schools described their university experiences as unique learning experiences that had had a lasting effect on their development. One stated, "Most of the ideas I have about education were formulated in college." Another described college as a "tremendous opportunity, a responsibility, and a sacred trust between teacher and student." Three said they had "learned how to learn" at college and described themselves as serious students. Two also stated that they had had difficulty readjusting to living on their own away from their families. Principals in the low-performing sample simply went to college. One said, "I wanted to get out and work." A second talked about his social pursuits and how he had "struggled to learn," whereas the third stated that university had had no effect whatsoever--period.

The first indication that principals in the high-performing sample were goal directed came in response to Item 3: "What event or conversation prompted you to become a school administrator?" Principals in the high-performing group had become principals for one of two reasons: others had encouraged them to become principals, or they had had an inner feeling that they could make a contribution to society by working in education. Four of the five principals had been encouraged by teachers and building administrators to become leaders. Principals in the low-performing schools did not talk about making a contribution to society, whereas three principals in the high-performing sample did. To elaborate, one principal in the high-performing sample said, "I did a damn good job in the classroom, and I was a force in my building. Because I

was a good teacher I had some things to share with teachers, and I could influence them to make things better for kids." A second, the principal who had served in Viet Nam, described how this horrifying experience had prompted him to become an educator: "I thought that there had to be a better way to make the world a better place to live, and I thought that working in education I could make a contribution." A third talked about the excitement of living on a large college campus in the 1960s and his decision to become a principal in order to address human-rights issues. He, too, talked about making a contribution to society. Two principals in the high-performing sample also talked about being risk takers, and both said they loved change. As one commented, "I was looking at doing something that was going to challenge me." In contrast, principals in the low-performing schools simply had fallen into the job. Two had become principals because they had been "in the right place at the right time." The third simply had negotiated himself out of a central-office position into a principalship. Two of the three principals had taken the job because they had seen no long-term advancement staying in the classroom, and one of them also admitted being "very money conscious."

Interviewees were asked whether their schools had mission statements. Seven stated that their schools did have such a statement. They had either heard of or attended an effective-schools workshop directed by Dr. L. Lezotte or the late Dr. R. Edmonds. The major difference between the two groups was that

principals in the high-performing schools placed more importance on using mission statements to move their schools in a desired direction. One principal stated, "The district has a mission statement that . . . well we also establish one for each building . . . and we talk about it at the beginning of the year. With the staff and myself we establish what we want to achieve." A second principal said that he and his staff "investigated ten areas of concern and targeted five to a five-year building-improvement plan." He continued, "Instead of building a permanent plan that changes from one year to the next and where you kind of just worked on whatever was the hot topic of the time, I wanted us to have a goal where we wanted to be in five years." A third talked about sending brochures home that advised the community of what his school stood for--high achievement based on a quality educational delivery system. The principal expected his staff to experiment, be with children, know everything possible about their students, and continuously search for better ways to deliver superior learning results. Finally, a fourth expressed dissatisfaction with the current mission statement his school had. He elaborated, "I don't think that it goes far enough. . . . I want to have a real strong statement about accountability." In this administrator's opinion, too many of his teachers were simply paying lip service to the statement that all students could learn, while stressing character development at the expense of achievement gains.

In contrast, principals in the low-performing sample dismissed mission statements. For instance, one stated that his staff was

"working to improve the quality of worklife for students--educationally, socially, and health-wise." When asked where his school was going, the same principal replied, "That's a difficult question to answer. . . . I just don't know." A second also stated that his school had a mission statement and went on to say, "We have advisory committees working on it, but they don't function as well as they might. . . . We're still working on that." The third responded by stating that his school did not have a mission statement and he doubted that one could ever be established.

Principals in the high-performing schools believed they were proactive and decisive. They knew what they wanted to happen in their buildings. One stated, "I really try to analyze situations, not only here in school but in my personal life, to set a goal and make a decision. . . . Before I make a decision I always think of the alternative and what is the worst thing. . . . I think that that has made me proactive because I'm not fearful of trying." Another said, "I'd say that I'm very proactive. . . . In terms of being an administrator I have a real clear idea about what I want the building to be like." A third stated, "I'm a Type A person who has a lot of energy. . . . I think that that's one of my strengths. . . . I'm a doer, and they sense that and they know I'm a risk taker."

In contrast, principals in the low-performing sample maintained that they were reactive and blamed central-office personnel and/or policies for this. One principal stated, "I think of myself as

proactive. . . . The only problem with that is that all too often I end up being reactive--I react to downtown." A second quickly responded, "I'm reactive! I love to react to downtown." Continuing, he described how he returned memos to central office with grammatical errors circled in red. He also described a situation in which he had told central-office personnel to "go to hell" when they informed him they were going to establish a special education class in his school. Finally, a third said, "Up to three years ago I was really proactive and for the past three years. . . . I was really hurt by being taken out of my former school." He continued, "I never really felt that I got a lot of support from people that matter. No one comes here. What I found was that despite the extra effort no one really cared." Incidentally, the same principal went to work at 8:30 a.m. and left at 3:30 p.m.

Principals in the high-performing schools believed in their ability to take charge of a situation and to tell their staffs the way something was to be done. One stated, "There comes a time you know when you have 30 people here with their own ideas. . . . Somewhere along the line you have to say that this is the way it's going to be. . . . It doesn't bother me when I have to do it." A second said, "Oh yes . . . when I came back to this building I told the staff there's some decisions I want you to make and some decisions where I am going to make the decision." A third stated, "Yes . . . it doesn't matter when I tell them that that's the way it will be . . . no point having long debates if there are not options." Principals in the low-performing schools avoided taking

charge of their own destinies. Not one mentioned any situation in which he/she had taken a personal stand on an issue. And when they did have to inform the staff that a particular course of action was to be followed, they described situations in which directives had been received from central office. Typical principals were uncomfortable telling anyone anything. As one said, "I'm not comfortable doing it, and I don't like to do it."

If something needed to be done in their buildings, principals in the high-performing sample were more willing to ask others for their support and time. They simply asked. As one principal said, "I just ask, 'Would you mind doing this for me?'" Another said, "I do it all the time. . . . I think that it is important that they participate. . . . It's good. . . . It makes the school better." In contrast, principals in the low-performing schools avoided any situation in which they would have to ask. One principal in this group said he always apologized when he had to ask staff to do "a little extra." He said, "I apologize because many of those things are not of my making."

Associated with being proactive was being decisive. Principals in the high-performing schools were more confident, forceful, and thoughtful in making major decisions than were their counterparts in the low-performing group. For instance, one principal talked about dismissing a teacher. In this instance the principal collected information from student records, in-class observations, and parents and finally made up her mind to dismiss the teacher. Her dilemma

was knowing that dismissing the teacher in midyear would be harmful to the teacher but also knowing that the longer the teacher remained in the classroom, the less his students would learn. When the principal decided to dismiss the teacher, there was no backing down. The teacher protested. "He broke down in my office, and I hope that I never become that unfeeling that that sort of thing doesn't bother me. . . . I knew objectively that it was the right thing to do." Another principal was equally decisive in focusing his staff on the desirability of establishing a five-year building-improvement plan. He stated, "I wanted the building to have a five-year plan of where we wanted to be. . . . I decided that it was worth taking some of our in-service time this year to get people to look at that . . . to look ahead."

Another talked about an incident in his building in which the parent of an educable mentally impaired (EMI) child overheard two teachers saying that some of their students were infected with lice by being in contact with "those EMI kids." The parent was devastated by the remark and reported the incident to the principal. He was equally upset and, after reflecting on how he would handle the complaint, brought his staff together and "took them to task." His plan also included a series of one-to-one conferences with selected staff members to convince them that their attitudes about EMI students were not healthy for the building. Yet another principal talked about a strike situation in which he struggled with how he was going to react to his staff when they returned to work. He was troubled by the teachers' stand and wanted to go out to them

and tell them to be reasonable. In this instance, the principal took time to articulate his response, which was "not to become a defender of teacher activities but to be a supporter of education, recognizing the teacher as the primary thing."

At the other extreme, principals in the low-performing schools described major decisions as those they made by chance. One principal described walking through his building and happening to enter a summer-school computer class that was to be discontinued and, on the spot, making an appeal to retain the program for his kindergartners. A second described the major decision he had made the previous year by saying that he had read an article on school security and immediately decided his school needed a security policy.

An associated competency related to decisiveness is being prompt in making up one's mind. Principals were asked to respond to a three-part question: (a) "What decision have you pondered the longest in arriving at a conclusion?" (b) "Was this a typical or unique situation?" and (c) "Why did it take so long?" Although principals in both samples stated that they did not belabor an issue, those in the high-performing schools described themselves as being more methodical in reaching the proper decision. For instance, all five principals in the high-performing sample described instances in which they had taken time to reach a decision. One principal said, "I don't usually take a long time to make a decision," whereas a second responded, "I think that I give a

proper amount of thought to my decision-making efforts. . . . I pursue issues sufficiently. . . . I think that when I act on it after that I don't think that I belabor that." On the other hand, principals in the low-performing sample were unable to identify any decision that consumed a lot of time. One said, "I make decisions quick. . . . I have a tremendous secretary. . . . Every time I'm about to make a decision I get her in here and hassle that thing through." A second said, "I make decisions more quickly now than I did when I became a principal. . . . I have been a principal for 25 years. . . . You've pretty well come across those situations before."

Responses from principals in the high-performing schools also indicated that they wanted to control events and outcomes in their buildings. For instance, one principal talked about the need to refrain from announcing his support for a new curriculum program "because of a bandwagon sort of thing. . . . I wanted to control the horse and be absolutely sure of the fact that teachers knew what was expected of them." Another talked about his decision to dismiss a teacher and how, despite pressures from central-office personnel, he avoided taking action because doing so would disrupt the entire school. He thought the timing was wrong because that instructor continued to have considerable community support. Although he thought he needed to take action, he also believed he would be more successful in dismissing the teacher by continuing to build a case against her. A third principal talked about his teachers' desire to introduce homogeneous classroom groupings and his personal distaste

for such a practice. He, too, avoided making a public announcement and chose instead to require his teachers to find research that would support their position. In the interim, he also collected information to support his position.

With regard to delegating tasks to others, principals in the high-performing sample were more willing to do this than were their colleagues in the low-performing group. The latter delegated tasks only to secretaries and/or vice-principals, whereas principals in the high-performing sample delegated to teacher groups. Not surprising was the finding that principals in the high-performing sample were uncomfortable delegating anything. As one said, "I like to be on top of everything." A second stated, "I delegate a lot of authority but not responsibility."

The premise that goals and mission statements direct behavior was supported when principals were asked to describe an unpopular decision they had made the previous year. Principals in the high-performing schools were more willing to make such decisions and in each instance coupled the decision to a value. One talked about closing individual teacher accounts--money collected by teachers for class activities--and placing all money in a central account. The principal was not bothered by making the decision, saying, "I felt that we weren't really honest with the community" and that sending students out to collect more money was unfair to them as well. Another talked about changing a recommendation submitted by one of his school's advisory teams. The group was very upset with his

decision. His response to them was, "I have a very hard time with the decision you have made, and I am making another one." He also supported his decision by saying that the change would "make the school climate better for students." The same principal also indicated that he had thought about the incident afterwards and concluded that the strong feelings were the result of his not establishing parameters for the group to follow. A third talked about his decision to have teachers escort their students to their buses. He stated, "The decision was not well received, but they recognized the need for it--it was a safety issue." A fourth talked about his decision to make all teachers go outside to supervise their students during recess. He said, "My position is that first of all there's the safety and welfare of the kids, and you need to be out there because you know your kids and also to watch them because we can learn a great deal from that." Principals in the low-performing schools were unwilling to make unpopular decisions. One said, "Someone else would have to describe that." Another said, "I probably make a lot of them," followed by silence.

Curriculum Activity

Principals in the high-performing schools also were more committed to curriculum issues than were principals in low-performing schools. Underlying the importance they placed on curriculum was a personal mission to address student needs. Only one principal in the low-performing sample mentioned anything about curriculum. This was the individual who wanted to place a computer

program in his building for disadvantaged students--"Most of our kindergartners are young children who do not have the background that most children have when they come into school because Head Start has gone through cutbacks."

In contrast, all five of the principals in the high-performing sample were competently involved in curriculum work. One talked about establishing a core program supplemented by a "choices" curriculum because he believed that young people needed to be placed in a position in which they could make choices. Another talked about introducing a new mathematics program that "taught kids how to think about math." Another mentioned a district science program: "A process orientation to science just doesn't have kids reading a textbook, and it really gets them involved in experiments and making predictions and conclusions." Yet another, also talking about the science curriculum, stated, "The last two years we've been doing an elementary study in the district. . . . It was my concern as we went through this that science wasn't being taught. . . . I'm chairman of the district committee, and it was important to me that we place a science coordinator in each school if we were in fact going to get science taught."

That principals' goals and missions directed behavior in high-performing schools was also supported by actions principals took in relation to the programs they began, how they dealt with achievement data, how they supervised staff, and their in-service activities. Describing successful plans or programs they had initiated in their buildings, principals in the low-performing sample focused on

personnel issues, whereas those in the high-performing sample talked about programs that could or did affect the entire building. To elaborate, one principal in a low-performing school talked about hiring tutors to work with students who had special needs, a second described using student funds to hire a detention-room supervisor, and the third mentioned hiring nonprofessional staff to work with minority students. In contrast, one principal in a high-performing school talked about involving his school and the entire district in the introduction of a new science curriculum, another about the introduction of a new writing program, and yet another about the introduction of a new mathematics program. Further, all three principals talked about the importance of achievement gains and of meeting future student needs.

Achievement Orientation

Principals were asked to describe any situation in which they had had to review data to form hypotheses, identify patterns, and reorder information. Six of the eight principals in the sample described situations in which they had worked with achievement data. Two principals in low-performing schools said they were comfortable working with data. One said, "I like to find things that show me how well we're doing. . . . I know how to devise questions and do surveys all the time." A second described how he met with two instructional specialists to identify learning needs. At the other extreme, the third principal in the low-performing sample said, "If

I can get other people to look at the data and that sort of thing, I will."

Principals in the high-performing schools were far more enthusiastic about finding patterns in achievement data. One stated, "I do like to look at data on testing. . . . I use it not only to look at our progress but to determine our needs . . . and some of that also comes from parents and teachers. Another said, "I think we organize and present data in a lot of different ways. . . . We try to organize it in some way that it's going to be useful not only to fourth-grade teachers who have the kids but for the primary teachers as well, so that they can look at our weak areas and see what we can do to improve." Incidentally, that principal was the only one in the high-performing sample to say he did not use test results as well as he should. A third described looking at data and finding needs as "fun." A fourth responded, "Yeh, I enjoy finding patterns." He went on to say that he and his staff were constantly looking for weaknesses in their programs.

Teacher-Supervision Practices

With regard to supervisory behaviors, principals in both samples used similar procedures to evaluate staff performance. Principals in the high-performing sample, however, were more concerned about staff performance and having staff meet expectations than were principals in low-performing schools. For instance, principals in the high-performing sample spent more time in classrooms than did their colleagues. One principal said he visited

every teacher in his building twice a week (he had a staff of 22), one talked about spending an entire day with each staff member, and another said he spent at least two-thirds of his time in classrooms and, when necessary, took three to five consecutive days to work with a teacher. Principals in the high-performing sample talked about the importance of a preconference to gather relevant information, and two of the four also made statements to the effect that they were dissatisfied with the current checklists their districts required them to use. As one of the two stated, "I much prefer a narrative-type evaluation. . . . I find that teachers are more concerned with which little square I checked rather than the meat of what I think is really important."

Principals in the low-performing sample dismissed the importance of staff evaluations. One responded, "I do them once every three years" and said no more. A second stated, "My pattern is to make up evaluations. . . . I'm out in the classrooms all the time. . . . When it comes to evaluation they're all going to get an A-1 evaluation. . . . Fact of the matter is that downtown probably doesn't know it, we sit down the last day and fill in back dates and everything else."

Whereas principals in both samples had a developmental orientation and wished to encourage improvement by being positive, principals in the high-performing schools were motivated to take action when performance or achievement goals were not satisfied. All but one described situations in which they had praised teachers for superior work, had spoken directly with teachers whose

performance was below expectations, or had helped some staff member experience success. One principal in a low-performing sample and four in the high-performing group talked about the need to have a purpose for visiting the classroom. As one principal said, "I sit down and talk with them before a visit. . . . I give them a chance to talk about themselves, and I usually find out things that I don't know. . . . I ask them what they would like me to observe, to tell me about their strengths and what they want me to see while I'm in there. . . . I also ask them if there's something they would like me to give them specific feedback on."

Poor performance was not much of an issue with principals in the low-performing sample. Only one principal in this group had anything to say about poor performance or the need to establish specific objectives for the teacher to follow. In contrast, in four of five situations, principals in the high-performing sample talked about the need to be specific with teachers when teacher performance was below expectations. One stated, "Setting goals with these people is the best way to help them improve." At the other extreme, principals in low-performing schools were uncomfortable establishing goals for teachers. For instance, one stated, "I always try to get them to establish goals." Another said, "I'm not very good at it."

In-Service Activities

Principals were also asked a number of questions designed to determine their attitudes toward and competencies in speaking to groups. One item concerned giving in-service presentations to staff

or colleagues. Principals in the high-performing sample believed in their abilities to make presentations on issues they valued. For instance, three principals in the high-performing sample had presented a number of ITIP sessions to their staffs, and another had given presentations relating to effective schools. Principals in high-performing schools were also more aware of requirements associated with successful presentations. One stated, "I use a lot of metaphors and the like. . . . I like to have a theme. . . . Personal experiences are helpful." A second said, "People have knowledge bases so you have to structure your remarks differently." He went on to say, "I'm real aware of different learning styles, and I try to take these into account. . . . "You need to use good examples." A third talked about knowing the material and being able to talk about "benefits and the positive aspects" of the subject. Principals in the low-performing sample avoided opportunities to make presentations to others, including teachers. One claimed he used to do so but now felt "more comfortable about turning over aspects of it to other people." A second said, "I give very little in-service to my staff"; a third commented, "I get others to do that."

Principals in the high-performing sample also enjoyed talking to others and were comfortable in that role. One principal stated, "I feel good. . . . I had information to share with them, and I think I presented it in a good way that people were interested in it." Another said, "I enjoy it because it's something I do all the

time." Yet another remarked, "I'm better than I give myself credit for because when I do it I enjoy it." Two principals in the high-performing sample said they found some presentations more difficult than others. One said he was uncomfortable talking to peers, whereas a second commented, "Public presentations don't bother me. . . . I'm very comfortable. . . . It's usually something I know a lot about."

Persuasion Skills

A necessary competency associated with goal accomplishment is the ability to persuade others. Principals in the high-performing schools saw themselves as being good persuaders. Three principals stated, respectively, "I feel good about them," "That's something I do well," and "I'm a pretty good persuader." Interestingly, principals in the high-performing sample had acquired their skills from a variety of disparate experiences. For instance, one had learned how to be persuasive by arguing with his father, another from convincing his classmates to do things his way, another from teacher-district negotiations, and a fourth from life experiences. Principals in the high-performing schools were also more involved in other leadership roles where persuasion skills were desirable. One was chairman of the district curriculum committee, another chaired the district science curriculum, another was coordinator of the district ITIP program, and yet another was director of summer programs.

In contrast, principals in the low-performing sample were less competent in terms of persuading others. One principal said that his persuasion skills were weak and then described how he consistently listened to others to learn the techniques they used to convince others. A second indicated that he was good only when he was presenting data to others who "really knew him." He went on to say, "I hate details like getting a speech together or persuading somebody or something like that."

Group Skills

Principals in the high-performing schools were also comfortable acting as facilitators and valued the need to focus others' attention on a single agenda or point of view. One principal in the high-performing sample said, "Consensus is important, and when it needs to be done it's a challenge and I enjoy it." Another stated that reaching consensus in his building was not difficult. He said that his role and responsibilities included identifying the issues and making sure that he got as many people as possible talking about their feelings. Another principal talked about the need to let others express themselves and his "shuffling back and forth" with the interested parties to reach closure on a curriculum issue. Principals in the low-performing sample were unable to identify situations in which they acted as facilitators or those in which consensus was required. One stated, "I don't do a lot of group work with the staff where I'm a facilitator. . . . I try to get other

people in to do that." The remaining principals in the low-performing sample talked about staff meetings, where consensus was not an issue.

A satellite question was asked regarding how principals felt when their particular point of view was challenged during a discussion. Principals in neither group were bothered or troubled by criticism. One respondent in the low-performing sample stated, "Quite often they're right. . . . That's fine . . . . Bring it on [and] show me." A second one said, "I don't mind others challenging me if they can support their statements." One principal in the high-performing sample was equally comfortable with criticism from others. She stated, "Oh, I don't mind. . . . I'm not anointed by God or anybody." Two others qualified their responses by stating, "Sometimes I don't like it and sometimes I don't mind. . . . Some of it depends on the amount of ownership I personally have in the problem and its resolution"; and "If it's an associate and I think that it is given with good pedagogy it bothers me. . . . If it isn't, it doesn't bother me."

Conflict-Management Skills

Principals were also asked to describe situations in which they had had to resolve a conflict between themselves and their staffs, or to use Croghan et al.'s (1983) classification, "managing interaction." One principal in the low-performing sample maintained that he loved conflict: "I love conflict with central office. . . . I love conflict with parents too . . . and I don't mind conflict

with my staff either." Another, talking about a teacher who was continually at odds with him, was involved in dismissing the individual and expressed satisfaction about confronting the person in a formal dismissal process. The third stated, "I have difficulty with the word conflict--I don't like the word." At the same time, that principal did not avoid conflict. He went on to describe how in one situation he had gotten two teacher groups together to resolve an issues involving released time for a track meet. Like principals in the high-performing sample, he also had brought the issue out on the table and sought to find a mutual meeting ground that both groups would accept.

Concerning specific responses from principals in the high-performing sample, one stated, "I try to get as much information as I can and make sure that all parties involved have a chance to hear what each other have to say. . . . I think that there is always a solution to a problem that everyone can live with." A second said, "At the building level I don't think that conflict is bad. . . . Conflict is really a sign of growth." This principal also described a situation in which he had been called in to mediate a conflict between a parent and another principal in the district. Like high-performing principals in Croghan et al.'s study, he described how he had created a win-win situation: "The principal left with a sense of self-respect and the mother left feeling that she definitely had an impact on the situation. . . . All I really did was provide a forum for both of them to air their concerns."

The Wallenda Factor

The Wallenda Factor, described by Bennis and Nanus (1985), also was a characteristic noted in the high-performing sample. To elaborate, principals were asked to describe a plan or program they initiated in their buildings that had not worked well. The major difference between groups was that principals in the high-performing schools acknowledged failure, reflected on what had gone wrong, learned from their mistake, and went on with their lives. Describing failures as near misses, one principal stated, "I can't think of any that failed. . . . Some worked better than others, but none of them fell flat on their face. . . . I really, really try to have staff involvement in decision making. . . . I think because of that that programs are less likely to fall on their face." A second stated, "Most of the things that don't work well are usually things I don't follow through with as much as I should." A third talked about establishing grade-level objectives and said, "I'm not sure that it didn't work well or if we didn't work at it long enough." Another talked about a homework policy that was causing a lot of conflict for staff and parents. The policy was causing teachers to fudge marks, and parents were contacting the school complaining of the terse notes they were receiving from teachers. Reflecting for a moment, the principal stated, "Maybe we should have communicated to parents that this was a trial thing. . . . I didn't communicate my mind-set to parents . . . and, well, it fell apart." After describing a failed attempt to introduce a new reading program, another principal stated, "I think that there's nothing wrong that

something is not working as long as you admit it, move back, and do something right."

In contrast, principals in the low-performing sample denied failure. One stated, "God, off hand I can't think of anything that I've failed at." Another, talking about his failed goal to improve student attendance, said, "I don't know if it's really failure because I've given you all sorts of reasons why it isn't." The third, after having a bad year in one school with minorities, refused to look at the situation he had come from and transferred the following year to a larger building facing the same problem.

School Image

Principals in both samples were concerned about the image their school had in the community. One principal in the low-performing sample talked about improving the community's perception of the school, raising parental expectations for minority students, and showing the community that the school was really concerned about their children. When he had first come to the school, less than 60% of the parents had attended parent-teacher nights. Now, since the meetings had been moved to the low-income community center, participation had risen to 97%. Another principal described how he had created a school security policy and had forwarded questionnaires to teachers and parents to assess how they felt about his initiative. In this instance, the principal said he wanted parents to feel that, once their children arrived at school, they were safe and that the staff cared about them. A third principal

talked about getting his staff together to examine the kinds of supplementary materials teachers were using in the school. During the past year the district had been criticized in the press for using videotapes that offended some segments of the community, and he wanted to ensure that none of his own teachers were using similar materials in the classroom. A fourth principal, who had taken over a school with a poor reputation, talked joyfully about an open-house program that brought parents into the building and how she used this event to inform parents of the curriculum and discipline changes made since the school opened in September.

Paper Work

Principals in both samples detested paper work. One stated, "I manipulate well and I am aware of the One Minute Manager"; another said, "I get most things in on time and give most of it to my secretary to do." Principals in the high-performing schools saw paper work as a necessary component of the principalship--something that had to be done. It was definitely not a priority. One said, "It's probably not the number one thing I do first. . . . It's something I get to." Another commented, "Paper work is not a priority of mine," and a third said, "I don't like it because it takes me away from other things I'd rather be doing." Another replied, "I don't like it, and I'm not very good at it."

Job Satisfaction

Principals in the high-performing sample were more satisfied with their work than were principals in the low-performing schools. For instance, two principals in the low-performing sample were not especially enthusiastic about their current positions, and both had thought about doing something else. One was troubled by "people coming down on you and saying 'Do this, do that, and this, and this.'" The other, who felt isolated and rejected, remained in the job because "being a principal is a pretty good job because you have all summer to do what you want." Principals in the high-performing sample were far more satisfied with their current positions. One stated, "I'm really happy"; another said, "I enjoy the freedom. . . . I like the idea that I'm on the line when I make decisions. . . . I like being a principal in order to initiate some of the things that are exciting in education." Yet another replied, "I don't think that I have ever had second thoughts about being an administrator. . . . I've been really, really happy being an administrator and a teacher as well."

Training Recommendations

As a matter of interest, principals were asked to identify in-service and/or college courses they would like to see organized to help them with their work. One principal in the low-performing sample said that the Extern Program he had taken at Michigan State University was the best course he had ever taken. A second simply stated, "If I need a skill and don't have it, I'll hire someone that

has it." A third suggested that programs related to group work and improving communication skills would be beneficial. In four of five cases, principals in the high-performing sample also identified communication skills as an area of interest. Two others talked about courses on learning theory. Other programs that were mentioned included conflict management, writing grants, group-work courses, and time management.

Summary

The interview data supported the hypothesis that principals in the high-performing schools were more efficacious than those in low-performing schools. Principals in the high-performing sample valued personal goals and visions. They believed they had a contribution to make, and subsequent behavior was directed by their desire to achieve their goals. They characterized themselves as being proactive and decisive--they knew what they wanted and where they wanted their schools to go. They believed in their ability to collect information, to act as facilitators, to persuade others, and to move their schools forward to meet perceived student needs. Supporting their desire to have an influence, principals in the high-performing schools were more comfortable in supervising staff, working on curriculum issues, and giving in-service presentations. Being involved in more leadership positions and activities, these principals were more capable than their colleagues in low-performing schools of describing their self-perceptions. Most telling of all,

in terms of efficacy, the same principals continued to experience satisfaction from being leaders. Not one discussed retirement, and all of them believed their work was both challenging and rewarding.

CHAPTER V

SUMMARY, FINDINGS, IMPLICATIONS, AND RECOMMENDATIONS

Summary

In this investigation, efficacy was defined as the extent to which one believes that he/she can bring about a desired outcome. Both quantitative and qualitative data-collection activities were used to test the hypothesis that high-efficacious principals are administrators of high-performing schools and low-efficacious principals are administrators of low-performing schools. As well as exploring related measurement issues, the writer identified different cognitive orientations of principals in both high- and low-performing schools.

The sample included principals from 45 low-performing, 59 in-between, and 55 high-performing schools. Seventy-nine principals returned the Principal Efficacy Questionnaire, and the remaining 80 the Modified Principal Efficacy Questionnaire. The return rate was lower than desired as schools in two large metropolitan areas had to be deleted from the target population due to time constraints involved in gaining approval to participate in the study. Of the 48 schools that were not included in the investigation, one was a high-performing school, and the remaining 47 were low-performing schools. The final return rate was 60.52%.

Seventy-five percent of the respondents were male, 42% were 40 to 49 years of age, 99% had a master's degree or higher, 97% had ten or more years of employment experience in public schools, and 66% had been principals for ten or more years. Eight principals, four each in high- and low-performing schools, were randomly selected for interviews. The percentage of students achieving minimum mastery in the high-performing schools ranged from 92% to 96.3%; in the low-performing sample, the range was from 52.2% to 69.4%.

Methodological procedures included the creation of two efficacy questionnaires. The first, the Principal Efficacy Questionnaire, was based on a review of the effective-schools/leadership literature. An eight-by-eight matrix, with Goals, Factors, Strategies, and Decision-Making categories along one axis and the principal as a Manager, Humanitarian, Program Manager, and Problem Solver along the other, was used to organize questionnaire items. Five items were developed for each category of the matrix. Also included in the Principal Efficacy Questionnaire were the two Rand efficacy items. Principals were asked to rate their ability and confidence levels, as well as the relative value (importance) they placed on 80 situation-specific behavioral items. The second questionnaire, the Modified Principal Efficacy Questionnaire, was based on a teacher efficacy instrument developed by Gibson (in Gibson & Dembo, 1984). Principals were asked to rate their personal and administrative efficacy levels and to indicate the relative value they assigned to 60 performance behaviors and belief

statements. A 32-question interview was also used to identify the cognitive processes of eight principals in low- and high-performing schools.

The Statistical Package for the Social Sciences (SPSS) was used to analyze questionnaire data. A series of one-way ANOVAs confirmed that no order effect was present in the data. A Cronbach alpha analysis was used to determine reliability quotients. Factor analysis was used to reduce the number of items to be included in the final analysis of the questionnaire data, which included a series of MANOVA tests and a canonical discriminant analysis. Correlations were also computed to determine the relative relationship between the Rand efficacy items and the items on the Principal Efficacy Questionnaire and the Modified Principal Efficacy Questionnaire.

The results of this investigation should be of interest to principals in low-performing schools in terms of their identifying differences in ability, confidence, and value between themselves and their colleagues in high-performing schools. Supervisors should be interested in the findings because the study contains descriptors related to principal evaluation. Individuals involved in principal selection should be interested in the findings as principals in the high-performing systems had had different experiences before they became principals that had influenced their current behaviors. Persons organizing principal in-service activities should find the skill differences cited in the findings

interesting in relation to differences in communication, group work, curriculum, and persuasion skills within the sample. Finally, researchers on efficacy should find the quantitative data of interest if for no other reason than that no significant differences were found among principals in low-, in-between, and high-performing schools.

Findings

Measurement Questions

The first research question dealing with measurement was, "Are there differences among the five questionnaire formats used to assess administrators' efficacy levels?" On the Principal Efficacy Questionnaire the order of the ability, confidence, and importance variables was varied. On one form the order was ability, confidence, importance; on the second form the order was changed to confidence, importance, ability; on the third, the order was changed to read importance, ability, confidence. On the Modified Principal Efficacy Questionnaire the importance items preceded the efficacy items on one form and followed in the second. A series of one-way ANOVAs confirmed that no order effect was present.

The second research question pertaining to measurement was, "Can a statistically consistent efficacy questionnaire be developed to assess efficacy?" Cronbach's alpha was used to determine reliability quotients. Alpha quotients for the Principal Efficacy Questionnaire ranged from a low of 0.72 to a high of 0.91; for the Modified Principal Efficacy Questionnaire, the alpha levels ranged

from 0.60 to 0.83. With the exception of the 0.60 value on the Administrative Efficacy items, all other reliability quotients equaled or exceeded those accepted by other efficacy researchers. As such, both instruments were considered reliable.

The third research question concerning measurement was, "Which efficacy questionnaire format is the best predictor of school performance?" A series of MANOVA tests and a canonical discriminant analysis failed to identify any statistically significant differences among principals in low-, in-between, and high-performing schools. This would suggest that the questionnaire used in this study was unable to detect differences in how principals perceived their ability to perform a stated behavior, their chance of success in performing that behavior, and the value they placed on the same behavior. As no significant differences were found with either questionnaire, Research Question 5--"Should the efficacy construct be measured using a situation-specific, operationally defined behavioral format, should it be measured using Gibson's generalized format, or should it be measured using a combination of both formats?"--remains unanswered.

Research Question 4 was, "To what extent will the inclusion of an Outcome Value (Importance) dimension contribute to the identification of efficacy levels?" As ordinal data were collected for the Modified Principal Efficacy Questionnaire, three regression equations were run to address this question. The coefficient of determination was low for all three samples: -0.16 for the

low-performing-schools sample, 0.13 for the in-between sample, and 0.20 for the high-performing-schools sample. This finding suggests that the inclusion of an Importance dimension in an efficacy construct contributes little to explaining differences.

In summary, the questionnaire data failed to identify statistically significant differences among the three samples. This would suggest that using a questionnaire approach to assess efficacy levels is the least promising methodology in terms of identifying cognitively mediated behavioral differences.

Mean Differences

A general trend was noted when principals' mean scores were compared with school performance. Principals in low-performing schools rated their ability and confidence levels higher on more items than did principals in high-performing schools. In contrast, principals in high-performing schools placed more importance on more items than did principals in low-performing schools. Looking at situations in which the mean difference between principals in low- and high-performing schools differed by a half point or more on both questionnaires, it was found that principals in low-performing schools perceived themselves as being better able to select and/or create survey questionnaires to identify school-improvement needs, conduct school/community needs assessments, identify specific reasons for visiting a classroom, preventing unwanted intrusions into high-priority school activities, using specific techniques to reach consensus, making unpopular decisions,

and questioning their own behavior whenever their staffs were upset. Principals in low-performing schools also indicated that they were more confident about conducting school/community needs assessments, getting through to difficult teachers, making sure that their directives were followed, and ignoring or circumventing policies that interfered with their achieving desired goals. Principals in the low-performing sample also considered it more important to identify positive and negative forces operating in their schools and to acquire external funding for special projects than did their colleagues in high-performing schools.

Interestingly, the interview data suggested that principals in low-performing schools avoided any activities in which they had to analyze data. Contrary to what the questionnaire data indicated, principals in low-performing schools did not engage in data-collection activities. Further, they did not treat classroom visitations and supervisory practices seriously, avoided situations in which consensus was required, and refrained from making unpopular decisions. One can infer from such differences that principals in low-performing schools might have overrated their ability and confidence levels. Perhaps when responding to the questionnaire items, principals in the low-performing sample were thinking of lower-level skills and situations rather than higher-order activities. For instance, when responding to the questionnaire item concerning conducting needs assessments, principals in the low-performing schools might have been thinking only of simple survey

questionnaires that would affect few people, as opposed to a school-wide assessment involving the community, the student body, and staff. The interview and questionnaire responses could also have differed because principals in the low-performing sample did not know what their true abilities were. They might have imagined that they could successfully perform a given behavior without actually having done so.

One ability item separated principals in the high-performing sample by a half point or more from their colleagues in low-performing schools. This was Item 2 on the Modified Principal Efficacy Questionnaire, which read, "Work with teachers because I have an influence on their behavior." In addition to believing that they had an effect on others, principals in the high-performing sample were competent and confident that they could be successful in maintaining high levels of community involvement in their schools and delivering in-service programs to others. They also placed more importance on creating survey questionnaires to identify school-improvement needs, actively participating in teacher in-service activities, and presenting in-service programs to others. Unlike principals in the low-performing sample, whose questionnaire responses were not supported by the interview data, the questionnaire responses given by principals in high-performing schools were substantiated by the interview data.

Interview Data

General patterns. The inference that principals in low-performing schools might have overestimated their ability and confidence levels because they had not actually performed a specific behavior was given some credence by the finding that principals in high-performing schools were more involved with others, received more feedback from others, and had performed specific skills that their low-performing colleagues avoided. To elaborate, one of the two general patterns emerging from the interview data was that principals in high-performing schools were more explicit and knowledgeable in describing their abilities and situations in which they had exercised skills principals in low-performing schools avoided. The second general pattern was that principals in high-performing schools were goal directed. They had a sense of what they wanted their schools to be like and were comfortable telling others what was expected of them.

Information search. Principals in low-performing schools received little feedback from others. They also lacked the necessary skills to actively seek information from significant persons in the organization, and even when faced with a "complex" problem they limited their information-gathering activities to one or two individuals. If any problem did exist in their buildings, principals in the low-performing sample wanted to contain it. Their preferred mode of operation was to keep problems within the school. In contrast, principals in high-performing schools were in touch

with their own reality. They believed it was important to determine others' perceptions and were more willing to seek outside support and information when dealing with a major problem. Because of their information-gathering skills, principals in high-performing schools had received more feedback from others in relation to their own performance. Unlike their less-efficacious colleagues, principals in high-performing schools were more competent and confident and believed it more important to collect and receive information from a variety of sources.

Sense of mission. Principals in the low-performing sample had had what could best be described as "lackluster" public school and collegiate experiences. They were not as involved in their school programs or as committed to learning as were principals in high-performing schools. Unlike principals in low-performing schools, who became administrators because they were in the right place at the right time, principals in the high-performing schools became principals because they believed they could make a difference. They believed they could make a contribution to society and, as suggested in the questionnaire data, have a positive influence on others.

Principals in high-performing schools supported their visions by endorsing school mission statements. They knew what they wanted to happen in their schools and were comfortable establishing goals for others to achieve. They perceived themselves to be proactive and decisive. They were more willing to take charge of a situation and to tell their staffs how things were to be done, just as they were more willing to ask their staffs for assistance even when the

request went against contractual agreements. They were also more willing to make unpopular decisions. Interestingly, whenever a principal in a high-performing school made an unpopular decision, it was related to a personal value the principal had about teaching and students. And although some would suggest that environmental or external events could have profoundly affected a principal's behavior, the facts that principals in low-performing schools had no mission statements of their own, did not make unpopular decisions in the interest of promoting learning or protecting students, and avoided asking their staffs to do anything beyond their contracts suggest that these principals allowed the status quo to exist because they lacked the confidence and/or competence to be leaders in their schools. No principals in the low-performing sample stated that they could not have a vision, no one had said that they had to be reactive, and no one had told them they could not make an unpopular decision.

Curriculum. Principals in the high-performing sample were more involved in curriculum activities than were their colleagues in low-performing schools. Only one principal in the low-performing sample mentioned anything about curriculum, compared to all four in the high-performing sample. Common to the principals in high-performing schools was the desire to address student needs, whether it involved making choices and realizing that every decision had a consequence or coordinating and/or improving mathematics, science, and writing skills. Again, no one had advised principals in low-performing

schools to avoid curriculum issues. Thus, one can infer that they were inactive in this area because they lacked a clear vision concerning student achievement and/or were weak in skills associated with identifying student needs.

Achievement orientation. The interview data suggested that principals in both high- and low-performing schools were comfortable working with data. At the same time, principals in high-performing schools maintained that they enjoyed working with data and identifying student needs. Principals in high-performing schools were directly involved in presenting data to others, organizing the information in such a way that others would understand, and ensuring that the data were shared with all other teachers in their buildings. These findings suggest that principals in high-performing schools were more efficacious, competent, and confident than those in low-performing schools, finding patterns in data, communicating that information to large audiences, and using the data to provide direction to others.

Teacher-supervision practices. Principals in high-performing schools placed more importance on supervising teachers and having teachers meet expectations than did their counterparts in low-performing schools. Associated with their information-gathering skills, principals in high-performing schools stressed the importance of having preconferences with teachers to determine their staff's strengths, weaknesses, and in-service needs. Principals in low-performing schools treated teacher supervision as a process. Unlike the principals in high-performing schools, who were troubled

by the "checklist" policies endorsed by their districts, principals in low-performing schools simply played the game by meeting minimum expectations emanating from central office. A conclusion that can be drawn from the interview material is that principals in high-performing schools perceived a need to learn as much as possible about their teachers and what they did and did not do in the classroom. It can also be inferred that the same principals thought it important to provide their teachers with specific information about their performance and wanted their teachers to focus attention on instructional activities instead of check marks on an evaluation sheet.

In-service activities. Principals in the high-performing sample were more efficacious in giving presentations to others. They enjoyed this activity and possessed the necessary skills to tailor their presentations to fit a particular audience. They also stressed the importance of using stories and metaphors to explain their point of view. Interestingly, the topics principals in the high-performing sample cited as examples of talking to large audiences were related to their respective school mission statements and visions. They were competent and confident in talking to others about desired teaching techniques and about how to improve their schools by reviewing effective-schools literature with their staffs. In contrast, principals in low-performing schools were less effectual in speaking to large audiences. They avoided opportunities to do so and preferred to say nothing about the

teaching/learning process in favor of having others come into the school to do it for them.

Persuasion skills. Principals in the high-performing sample were competent and confident persuaders. They also indicated they had acquired their skills from parents, friends, and experiences in which they had convinced others to endorse their particular point of view. This finding reinforces the premise that principals in the high-performing sample believed they had an influence on their teachers and were more knowledgeable about their ability and confidence levels than were principals in the low-performing sample.

Group skills. Principals in the high-performing sample believed in their ability to manage others. They formed task groups and monitored group discussions in a variety of situations. They were comfortable acting as facilitators and believed it was important to focus group attention on a specific area of interest. Principals in low-performing schools lacked such skills and avoided situations in which facilitation skills were necessary. As with giving in-service programs, they relied on others to achieve consensus in their buildings.

Conflict-management skills. Principals in both samples were comfortable with conflict. At the same time, principals in high-performing schools were more competent in collecting information, determining the other person's point of view, and then creating a win-win situation.

The Wallenda factor. Principals in low-performing schools could not give examples of a school program they had initiated that

had failed; they denied failure. In contrast, principals in high-performing schools mentioned a variety of situations in which they had initiated a particular program that was not successful. Unlike their colleagues in low-performing schools, principals in the high-performing sample acknowledged failure, had identified reasons for the failure, and had gone on to other initiatives. This again suggests that principals in high-performing schools were better analysts and information gatherers than their colleagues and that they acknowledged failure and learned from their efforts.

School image. Principals in both samples wanted to protect their schools' image. It was as much of a concern to principals in low-performing schools to sell their schools and school programs to parents as it was to principals in the high-performing group.

Paper work. Again, no differences between samples were found, other than the fact that principals in high-performing schools did not view management activities as a priority. This again reinforces the position that principals in high-performing schools acted on agendas related to larger issues, namely, instructional matters rather than the general routines associated with most school operations.

Job satisfaction. Principals in the low-performing sample talked about retirement; their work was done. The fact that many of them were unable to substantiate their own perceptions regarding how others viewed their performance suggests that these principals worked in a vacuum. Not having a vision for their schools and not

knowing how well they were doing undoubtedly magnified their dissatisfaction with being principals. In contrast, principals in high-performing schools asserted that they liked their work and maintained that they still had a lot to accomplish. Having a vision for their schools, they continued to find their work engrossing and challenging.

Training recommendations. Principals in both groups identified training needs. Principals in the high-performing sample mentioned a need for courses in communication. They also suggested courses in group work, conflict management, writing grants, and learning theory. Interestingly, only one principal in the low-performing sample was able to identify an in-service need, and that was related to group work. Looking at the topics cited by the high performers, it can be seen that these principals perceived a need to become even better facilitators. They also wished to increase their knowledge and skill in relation to helping teachers in the classroom.

In summary, the questionnaire and interview data suggested that principals in low-performing schools were less knowledgeable about their perceived ability and confidence levels, and as a result they overestimated their true performance levels. In contrast, the questionnaire and interview data coincided in terms of responses given by principals in high-performing schools. Also noteworthy is the finding that the interview material matched the competency findings of Croghan et al.'s (1983) study of high- and average-performing principals. This finding, coupled with the congruence of

the questionnaire and interview data for principals in high-performing schools, increases the validity of the current study. One can also conclude that the major hypothesis, namely that high-efficacious principals are administrators of high-performing schools and that low-efficacious principals are administrators of low-performing schools, was verified.

Principals in high-performing schools believed their behavior had an effect on others. They were goal directed and more knowledgeable about their own abilities because of their active involvement in a variety of leadership activities. They were more efficacious in collecting information from others and using mission statements to establish goals for others to achieve. Coupled with their image of what their schools should be like was a willingness to provide in-service programs for their teachers, to be facilitators, to use their persuasion skills to convince others to follow their lead, and to be proactive and decisive. The interview materials also suggested that visions of what schools should be like and being a leader who effectively works with others were rooted in the respondents' experiences before becoming principals.

Implications

With regard to measurement issues, the findings suggested that using a questionnaire methodology to identify efficacy differences is fraught with difficulties. Both situation-specific and more generalized questionnaire items lack the power to differentiate cognitive processes associated with how individuals perceive their

ability, confidence, and values. At the same time, the interview approach, using a critical-incidents format, offers some hope that efficacy characteristics can be successfully isolated and described in some detail.

The interview and supporting questionnaire data from principals in high-performing schools suggested that principals in low-performing schools need to have visions of what their schools should be like. Without such visions, principals in low-performing schools will simply attend to maintaining a "smoothly running ship" and fail to grasp the opportunity to be leaders. Associated with having a vision is possessing the requisite skills to collect and analyze data and presenting these data in such a way that others feel directed. Principals in low-performing schools require in-service and practice in looking at a variety of data bases from which they should be expected to create mission statements that will inform others what their schools stand for. They should also be required to make presentations to their colleagues so that, with feedback, they can gain competence and confidence in their ability to make a public presentation.

The data also suggested that principals in low-performing schools need to acquire skills in acting as facilitators, persuading others to accept a particular point of view, and working with groups to bring about change in their buildings. Again, in-service activities using a hands-on approach could help these principals build competence and confidence in their ability to engage in such

activities and perhaps become more proactive and decisive in taking charge of their own destinies.

Another implication associated with the findings concerns principal evaluation. The findings suggested that evaluators need to expect all principals to have a vision of what their schools stand for. Such visions should be evaluated in terms of the school's needs and be based on data collected about the school itself. Principals also need to be evaluated in terms of their ability to form teacher teams to address issues facing the school. Information should also be collected about principals' ability to act as facilitators and successfully to persuade others to adopt a particular point of view. Equally important in terms of principal evaluation is the ability to provide teachers with specific feedback about their performance and to give in-service programs to teachers. If principals are to be perceived by others as leaders, it is only natural to expect that they make presentations to their teachers and be actively involved in and knowledgeable about instructional practices.

One principal in the low-performing sample stated that the interview guide used in this investigation had made him rethink his current situation. He went on to say that it was the first time in the three years he had been at that school that anyone had visited him to discuss his perceptions about the building. As the interview was drawing to a close, he said, "You know what? I can do a better job here. I have to set my priorities, organize the managerial stuff, and work on curriculum things if I'm to change this school."

Also noteworthy was the finding that all three principals in the low-performing sample described themselves as being reactive, and all of them emphasized the fact that this was the result of central-office personnel and policies. This would indicate that relationships between central office and principals in low-performing schools were, at best, strained. Superintendents might wish to consider using an interview guide to assess where principals are in terms of their performance. Increasing the dialogue between both parties could help build better relationships. Having conferences with principals in low-performing schools could also establish a more positive climate that would support the identification of realistic expectations for improvement and performance.

Limitations

From a quantitative versus qualitative perspective, the investigation failed to identify significant differences in ability, confidence, and importance among principals in low-, in-between, and high-performing elementary schools. Although disappointing, the same outcome confronted Ashton et al. (1982, 1983), who also determined that questionnaire data alone failed to isolate important variables associated with the efficacy construct. Recent effective-schools studies related to principal behavior and student achievement, again using a questionnaire methodology, have also failed to identify significant differences between administrators in more- and less-effective schools. To elaborate, in a synthesis

article exploring leadership variables and effectiveness, Zirkel and Greenwood (1987) noted that in 9 of 15 studies, students' achievement scores were not correlated with principals' behavior. In two of the studies, the methodology was similar to that employed in the present investigation. In the first, principals were designated by their superintendents as "most" or "least" effective. Using questionnaire data, Glassman (in Zirkel & Greenwood, 1987) found that administrators' self-reports regarding their sense of efficacy failed to differentiate principals in more- and less-effective schools. In the second study, using a Likert questionnaire format, Wimpelberg (in Zirkel & Greenwood, 1987) also determined that questionnaire responses failed to identify behavioral differences. At the same time, the researcher did detect differences using follow-up interview data. Whereas principals in both effective- and less-effective schools gave similar responses to the item "I am able to monitor instruction very closely," interview responses indicated that principals in the more-effective sample had different perspectives regarding the monitoring of instructional practices.

Bandura and Schunk (1981) suggested a plausible explanation for why questionnaire data are weak in terms of identifying efficacy levels. These researchers maintained that evaluating one's own competence and expectancy levels is a complex undertaking. Individuals frequently overestimate their capabilities because they do not understand or recognize complex subtasks or competencies

associated with the final behavior. Further, Bandura (1977) suggested that

> performance that draws on only a few skills reduces the likelihood of overestimating personal capabilities. . . . In activities that depend on diverse subskills, knowledge of some of them, the more directly observable ones, raises the level of assurance that one might be able to perform successfully. (p. 215)

In the questionnaire data, especially in relation to items contained in the Principal Efficacy Questionnaire, principals in low-performing schools might have overestimated their abilities for the same reason. They might have based their responses on a limited set of lower-order skills while ignoring higher-order skills. Principals in the low-performing sample had higher self-perceived ability concerning creating and/or selecting survey questionnaires to identify school-improvement needs. The interview data, however, suggested that these principals disliked working with achievement data, whereas principals in high-performing schools used data to identify curriculum needs and enjoyed finding patterns in the information itself. In this instance, it could be that principals in the low-performing sample responded to the item thinking of a lower-order subskill, namely creating and/or selecting surveys, even simple surveys, while ignoring or underestimating the higher-order subskills of finding patterns in the data or developing a more complex instrument.

Another plausible explanation for why the questionnaire data failed to show significant differences among the three groups could be the small sample size. Category size, based on effectiveness,

ranged from 23 to 29. Considering that Gibson and Dembo (1984) had a sample of 234 teachers in their study and that Ashton et al. (1982, 1983) had 48, small sample size could have been a weakness in the present study. With small sample sizes, between-group differences can be hidden, contributing to the possibility of committing a Type I error.

Yet another issue associated with the failure of the questionnaire data to signify differences concerns the categorization of low- and high-performing schools. As suggested by other researchers, notably Rowan et al. (1985), achievement data do not necessarily correlate with any definition of effectiveness. Perhaps a number of principals in the low-performing sample were indeed more capable than their schools' achievement data suggested; this would have been a contaminating factor.

Unlike the questionnaire results, the interview data did differentiate principals in low- and high-performing schools. Interestingly, the various behaviors identified in the interview material matched the competency findings of Croghan et al.'s (1983) study of average- and high-performing principals in Florida schools. This finding suggests that conclusions regarding efficacy levels based on the interview material can be taken seriously. As the interview items pertained to respondents' recall of "critical incidents" or important happenings they remembered, one can look for examples of all three efficacy variables (ability, confidence, importance) in their dialogues. Principals in low-performing schools, by omission, identified behaviors they avoided;

conversely, principals in high-performing schools identified behaviors they were comfortable performing. Associated with responses to each interview item were certain behaviors or competencies that were performed (ability efficacy), statements that expressed an inner confidence that a behavior could be performed successfully (expectancy efficacy), and statements indicating a particular activity and/or behavior was valued (importance efficacy).

Recommendations

The reader is cautioned that differences cited in this investigation might have been the result of socioeconomic conditions and not differences in performance. All three interviewees from low-performing schools worked in situations in which the minority population constituted 50% to 100% of their schools' enrollment, as compared to a high of 10% minority enrollment in high-performing schools. Should another investigation be undertaken, it is recommended that school populations that are similar in terms of minority representation be used in identifying low-, in-between, and high-performing schools.

It is also recommended that time be spent interviewing staff, students, parents, and superintendents to validate the principals' stated self-perceptions.

Another recommendation is to strengthen the questionnaire items by focusing on past experiences, goals, visions, and information-gathering techniques. It is also suggested that the questionnaire

items themselves be further defined in hierarchical order. For instance, rather than simply asking whether the principal can create and/or select survey questionnaires, one would identify a series of steps: e.g., construct a questionnaire to elicit the required information, select a survey instrument that will provide the principal with the needed information, analyze the data, and use the material to make a decision. The same procedure should also be used in the interview; that is, the principal should be required to describe how he/she had performed the specified task.

In terms of identifying prospective principals, search teams should look for examples in the individual's past that would suggest the absence or presence of a number of variables. Questions regarding the person's pre- and post-high-school experiences could reveal that the prospective candidate had no values associated with teaching and learning and that he/she was neither proactive nor decisive in interacting with others. Responses to such questions could also indicate that the individual, from an early age, had avoided situations in which he/she had to interact with groups, persuade others, or commit him/herself to a higher ideal. In this investigation, principals in high-performing schools had been involved in leadership activities before becoming teachers; such involvement, in itself, could be a key characteristic of high-performing principals. This topic deserves more attention.

Concerning principal-evaluation practices, the findings suggested that principals need to be evaluated on their ability to

create "alternate futures" for their schools. They need the skills to originate visions that will allow them to become leaders. Associated with creating a vision is the ability to communicate that vision to a large audience and to acquire the skills needed to be confident facilitators, persuaders, and data analysts. Descriptions of successful leaders abound in the literature; all share the characteristic of having a vision that guides one's behavior and interactions with others. The same seems to be true of principals in high-performing schools. They, too, require a vision in order to become proactive and decisive about issues that confront their schools. Like successful leaders in business, principals need to know where they want their schools to go and what their schools are to stand for.

Also associated with principal-evaluation issues is the need to determine weaknesses related to analyzing and collecting data, acting as a facilitator, and being able to persuade others. In the current investigation, principals in high-performing schools were competent and confident of their abilities in all three areas and successfully used these skills to move their schools forward. This suggests that principals in low-performing schools need to attain efficacy levels similar to those of their colleagues in high-performing schools. They, too, need to believe that their behavior has an effect on others. Thus, it is suggested that in-service activities be organized using a "hands-on" approach in which principals would have to create visions, communicate those visions to their colleagues, analyze data, and use persuasion and

facilitating techniques to convince others that their visions are realistic and achievable.

It is also recommended that central-office personnel use an interview approach to determine principals' performance levels. As mentioned earlier, relationships between principals in low-performing schools and central-office staff can best be described as strained. A structured interview approach could be used to detect weaknesses in ability and confidence or belief systems that have a negative effect on the principal's performance. Another consideration would be to pair principals from high- and low-performing schools and to have them interview each other. This procedure would be less threatening to a low-efficacious principal than if the interview were conducted by someone from the superintendent's office. Further, the exchange between the two principals should highlight differences in thinking about education and what schools and schooling are about. The same procedure could also lead to the establishment of a mutual support team in which one partner would serve as a role model for the other.

APPENDICES

APPENDIX A

PRINCIPAL EFFICACY QUESTIONNAIRE

From: Dr. L. Lezotte
Michigan State University
East Lansing, MI 48824

Dear Colleague:

I have had many conversations with Frank regarding his research project. He is committed to improving the quality of in-service programs for practicing administrators. I have also discussed his project with other researchers, and they are as eager as myself to review Frank's findings. This is a seminal effort and one that deserves your attention and support. I encourage you to complete the enclosed questionnaire and to cooperate with Frank should he call upon you for a follow-up interview.

Respectfully yours,

Larry Lezotte

From: Frank Lipsett--Doctoral Candidate
Michigan State University
East Lansing, MI 48824

February 18, 1987

Dear Colleague:

For 19 years I have worked in education as a teacher, a vice-principal, and a principal. Currently I am completing my doctoral dissertation requirements at Michigan State University. Like others who have preceded me, I seek your cooperation in completing the enclosed questionnaire. It takes less than 20 minutes to complete, and a number of individuals have told me that they found it challenging, interesting, and fun to complete.

To continue, for some time now I have been concerned about the in-service programs afforded practicing school administrators. My personal perception has been that an undue emphasis has been placed on awareness/knowledge issues at the expense of increasing performance and confidence levels. Further, it has been my experience that rarely has anyone ever shown an interest in determining the importance administrators place on the changes being advocated by in-service personnel. The purpose of the current investigation is statistically to show that administrators differ in terms of the skills they can perform and the importance they place on given behaviors. If such differences can be shown to exist, then definitive statements can be generated regarding the content, format, and purposes of future in-service programs.

I assure you that the information you forward me will be kept confidential and that all feedback will be in the form of grouped data--no names. Further, once I receive the attached questionnaire, I will give it to a fellow graduate student, who will assign a number to the questionnaire and remove the upper portion which identifies the school and you. A master list of schools and whether or not questionnaires have been returned will be maintained for the duration of this investigation. This procedure is necessary to maximize return rates and in the event that the researcher feels the need to contact you personally for additional information.

In closing, this research project has generated considerable interest in the educational community. It has also been endorsed by Dr. L. Lezotte as a seminal effort to improve and help practicing administrators meet the challenges of administering schools in an outcome-oriented environment. One final statement: It is very important in any study of this nature to have a high return rate--at least 70 percent. As such, I hope that you will be able to take a few minutes of your valuable time to help me.

Respectfully yours,

Frank Lipsett

BACKGROUND DATA

NAME: _____

SCHOOL NAME: _____

STATE: _____

School number assigned by graduate student: ____

Approximate number of students at your location
___ Less than 100
___ 100 to 499
___ 500 to 1,000
___ More than 1,000

Your age
___ 20 to 29 years old
___ 30 to 39 years old
___ 40 to 49 years old
___ 50 to 59 years old
___ 60 or older

Employment in public/ private school
___ Less than 2 years
___ 2 to 5 years
___ 6 to 9 years
___ 10 to 19 years
___ 20 to 29 years
___ More than 29 years

Level of education
___ Less than bachelor's degree
___ Bachelor's degree
___ Master's degree
___ Specialist degree
___ Doctorate

Years in administration
___ Less than 2 years
___ 2 to 5 years
___ 6 to 9 years
___ 10 to 19 years
___ 20 to 29 years
___ More than 29 years

Sex
___ Female
___ Male

QUESTIONNAIRE DIRECTIONS:

Following each SKILL STATEMENT are three response categories. The first measures the person's ABILITY to perform the skill, the second the person's CONFIDENCE that the skill will be performed successfully, and the third, the IMPORTANCE the person places on the skill behavior itself (some behaviors are seen as being more important than others). Each response sequence is preceded by the word ABILITY, CONFIDENCE, and IMPORTANCE, and each is followed by six numbers. The numbers are arranged in ascending order, with the numbers 1 and 2 indicating low response levels and the numbers 5 and 6 high response levels.

Following are a number of SKILL STATEMENTS. For each SKILL STATEMENT please indicate your ABILITY, CONFIDENCE, and IMPORTANCE levels along the six-point interval scale by marking an "X" through the appropriate response number. Please respond to all of the questions. It is recommended that you go through the questionnaire quickly and record your initial response to each item.

A self-addressed envelope is enclosed for your convenience.

Thank you.

SKILL STATEMENT		Low High
1. Analyze baseline data (e.g., attendance records, vandalism costs, discipline sheets, teacher absence figures, budget records) and establish school improvement goals.	ABILITY CONFIDENCE IMPORTANCE	1 2 3 4 5 6 1 2 3 4 5 6 1 2 3 4 5 6
2. Select and/or create survey questionnaires to identify school improvement needs.	ABILITY CONFIDENCE IMPORTANCE	1 2 3 4 5 6 1 2 3 4 5 6 1 2 3 4 5 6
3. Identify student populations whose performance levels are below expectations (e.g., minority, male/female, or ethnic student groups).	ABILITY CONFIDENCE IMPORTANCE	1 2 3 4 5 6 1 2 3 4 5 6 1 2 3 4 5 6
4. Knowledgeably discuss new teaching methods and materials with your staff.	ABILITY CONFIDENCE IMPORTANCE	1 2 3 4 5 6 1 2 3 4 5 6 1 2 3 4 5 6
5. Create concrete, precise, outcome-based statements that describe your school's mission.	ABILITY CONFIDENCE IMPORTANCE	1 2 3 4 5 6 1 2 3 4 5 6 1 2 3 4 5 6
6. Conduct a school/community needs assessment.	ABILITY CONFIDENCE IMPORTANCE	1 2 3 4 5 6 1 2 3 4 5 6 1 2 3 4 5 6
7. Develop specific long- and short-term academic goals for a select group(s) of students.	ABILITY CONFIDENCE IMPORTANCE	1 2 3 4 5 6 1 2 3 4 5 6 1 2 3 4 5 6
8. Identify positive and negative forces operating within your school and in your community that have an impact on goal attainment.	ABILITY CONFIDENCE IMPORTANCE	1 2 3 4 5 6 1 2 3 4 5 6 1 2 3 4 5 6
9. List specific actions (events) that need to be initiated in order to reach goals you have established for your school.	ABILITY CONFIDENCE IMPORTANCE	1 2 3 4 5 6 1 2 3 4 5 6 1 2 3 4 5 6

	SKILL STATEMENT		Low High
10.	Formally monitor your school's progress on goal-attainment activities.	ABILITY CONFIDENCE IMPORTANCE	1 2 3 4 5 6 1 2 3 4 5 6 1 2 3 4 5 6
11.	Communicate school goals and your expectations to teacher and central office personnel.	ABILITY CONFIDENCE IMPORTANCE	1 2 3 4 5 6 1 2 3 4 5 6 1 2 3 4 5 6
12.	Develop long- and short-term academic goals for ALL students.	ABILITY CONFIDENCE IMPORTANCE	1 2 3 4 5 6 1 2 3 4 5 6 1 2 3 4 5 6
13.	Talk with parents and student groups about school goals and your expectations.	ABILITY CONFIDENCE IMPORTANCE	1 2 3 4 5 6 1 2 3 4 5 6 1 2 3 4 5 6
14.	Establish challenging but realistic instructional goals for teachers to attain.	ABILITY CONFIDENCE IMPORTANCE	1 2 3 4 5 6 1 2 3 4 5 6 1 2 3 4 5 6
15.	Involve parents and teachers in the goal-setting process.	ABILITY CONFIDENCE IMPORTANCE	1 2 3 4 5 6 1 2 3 4 5 6 1 2 3 4 5 6
16.	Initiate research-based instructional-improvement activities.	ABILITY CONFIDENCE IMPORTANCE	1 2 3 4 5 6 1 2 3 4 5 6 1 2 3 4 5 6
17.	Select school-improvement goals from multiple data sources (e.g., respected colleagues, research articles, relevant others).	ABILITY CONFIDENCE IMPORTANCE	1 2 3 4 5 6 1 2 3 4 5 6 1 2 3 4 5 6
18.	Focus student, teacher, and community attention on school goals.	ABILITY CONFIDENCE IMPORTANCE	1 2 3 4 5 6 1 2 3 4 5 6 1 2 3 4 5 6
19.	Base curriculum decisions/pupil classroom activities on the school's goal statement.	ABILITY CONFIDENCE IMPORTANCE	1 2 3 4 5 6 1 2 3 4 5 6 1 2 3 4 5 6
20.	Find the necessary time to be an instructional leader (e.g., attend to instructional improvement and school goals) while adequately dealing with managerial demands (e.g., paper work).	ABILITY CONFIDENCE IMPORTANCE	1 2 3 4 5 6 1 2 3 4 5 6 1 2 3 4 5 6
21.	Employ efficient procedures for use of and accounting for supplies and equipment.	ABILITY CONFIDENCE IMPORTANCE	1 2 3 4 5 6 1 2 3 4 5 6 1 2 3 4 5 6
22.	Nurture two-way communication systems between yourself and the community.	ABILITY CONFIDENCE IMPORTANCE	1 2 3 4 5 6 1 2 3 4 5 6 1 2 3 4 5 6
23.	Identify specific reasons for visiting a classroom prior to making the visit.	ABILITY CONFIDENCE IMPORTANCE	1 2 3 4 5 6 1 2 3 4 5 6 1 2 3 4 5 6

	SKILL STATEMENT		Low High
24.	Assess maintenance status of your building and its equipment.	ABILITY	1 2 3 4 5 6
		CONFIDENCE	1 2 3 4 5 6
		IMPORTANCE	1 2 3 4 5 6
25.	Consistently enforce disciplinary codes.	ABILITY	1 2 3 4 5 6
		CONFIDENCE	1 2 3 4 5 6
		IMPORTANCE	1 2 3 4 5 6
26.	Identify learning and teaching philosophies of prospective teachers.	ABILITY	1 2 3 4 5 6
		CONFIDENCE	1 2 3 4 5 6
		IMPORTANCE	1 2 3 4 5 6
27.	Maintain high levels of community involvement in the school's academic programs.	ABILITY	1 2 3 4 5 6
		CONFIDENCE	1 2 3 4 5 6
		IMPORTANCE	1 2 3 4 5 6
28.	Regularly supervise the instructional activities of the entire staff.	ABILITY	1 2 3 4 5 6
		CONFIDENCE	1 2 3 4 5 6
		IMPORTANCE	1 2 3 4 5 6
29.	Have teachers' instructional objectives stated in concrete, measurable, and observable terms.	ABILITY	1 2 3 4 5 6
		CONFIDENCE	1 2 3 4 5 6
		IMPORTANCE	1 2 3 4 5 6
30.	Coordinate (scope and sequence) basic curriculum objectives between and within grades.	ABILITY	1 2 3 4 5 6
		CONFIDENCE	1 2 3 4 5 6
		IMPORTANCE	1 2 3 4 5 6
31.	Match curriculum materials and student characteristics to maximize student learning.	ABILITY	1 2 3 4 5 6
		CONFIDENCE	1 2 3 4 5 6
		IMPORTANCE	1 2 3 4 5 6
32.	Demonstrate promising new instructional practices to teachers.	ABILITY	1 2 3 4 5 6
		CONFIDENCE	1 2 3 4 5 6
		IMPORTANCE	1 2 3 4 5 6
33.	Identify instructional strengths and weaknesses of your staff.	ABILITY	1 2 3 4 5 6
		CONFIDENCE	1 2 3 4 5 6
		IMPORTANCE	1 2 3 4 5 6
34.	Discuss specific strengths and weaknesses of core curriculum programs.	ABILITY	1 2 3 4 5 6
		CONFIDENCE	1 2 3 4 5 6
		IMPORTANCE	1 2 3 4 5 6
35.	Assign students to teachers to maximize student learning.	ABILITY	1 2 3 4 5 6
		CONFIDENCE	1 2 3 4 5 6
		IMPORTANCE	1 2 3 4 5 6
36.	Keep the staff working on the agreed-upon course of instructional activities and practices.	ABILITY	1 2 3 4 5 6
		CONFIDENCE	1 2 3 4 5 6
		IMPORTANCE	1 2 3 4 5 6
37.	Identify general trends or conditions by noting the behaviors of others and by seeing relationships between events.	ABILITY	1 2 3 4 5 6
		CONFIDENCE	1 2 3 4 5 6
		IMPORTANCE	1 2 3 4 5 6
38.	Nurture friendly and cooperative relationships between yourself and your staff.	ABILITY	1 2 3 4 5 6
		CONFIDENCE	1 2 3 4 5 6
		IMPORTANCE	1 2 3 4 5 6

	SKILL STATEMENT		Low High
39.	Identify classroom and school-wide factors that need to be addressed to increase student achievement levels.	ABILITY CONFIDENCE IMPORTANCE	1 2 3 4 5 6 1 2 3 4 5 6 1 2 3 4 5 6
40.	Acquire external funding and/or support in order to achieve goals.	ABILITY CONFIDENCE IMPORTANCE	1 2 3 4 5 6 1 2 3 4 5 6 1 2 3 4 5 6
41.	Actively participate in teacher in-service activities relating to instructional and curriculum issues.	ABILITY CONFIDENCE IMPORTANCE	1 2 3 4 5 6 1 2 3 4 5 6 1 2 3 4 5 6
42.	Organize cooperative teacher work/planning teams.	ABILITY CONFIDENCE IMPORTANCE	1 2 3 4 5 6 1 2 3 4 5 6 1 2 3 4 5 6
43.	Use metaphors, analogies, historical examples to describe desired teacher behavior and attitudes.	ABILITY CONFIDENCE IMPORTANCE	1 2 3 4 5 6 1 2 3 4 5 6 1 2 3 4 5 6
44.	Promote the use of promising teaching practices by giving teachers encouragement and feedback.	ABILITY CONFIDENCE IMPORTANCE	1 2 3 4 5 6 1 2 3 4 5 6 1 2 3 4 5 6
45.	Establish trusting relationships with staff by listening attentively, paraphrasing for mutual understanding, and by sharing your own feelings with them.	ABILITY CONFIDENCE IMPORTANCE	1 2 3 4 5 6 1 2 3 4 5 6 1 2 3 4 5 6
46.	Informally observe and interact with students and staff in order to identify in-service programs.	ABILITY CONFIDENCE IMPORTANCE	1 2 3 4 5 6 1 2 3 4 5 6 1 2 3 4 5 6
47.	Deliver an in-service program in an area of expertise (e.g., instructional techniques, curriculum, or classroom-management areas).	ABILITY CONFIDENCE IMPORTANCE	1 2 3 4 5 6 1 2 3 4 5 6 1 2 3 4 5 6
48.	Work with an individual teacher to identify and agree on reasons why specific students or student groups are not achieving at expected performance levels.	ABILITY CONFIDENCE IMPORTANCE	1 2 3 4 5 6 1 2 3 4 5 6 1 2 3 4 5 6
49.	Identify teaching and learning values of tenured staff.	ABILITY CONFIDENCE IMPORTANCE	1 2 3 4 5 6 1 2 3 4 5 6 1 2 3 4 5 6
50.	Give teachers detailed situation-specific information following a classroom visit, during feedback sessions.	ABILITY CONFIDENCE IMPORTANCE	1 2 3 4 5 6 1 2 3 4 5 6 1 2 3 4 5 6
51.	Prevent unwanted intrusions into high-priority school activities (e.g., refuse school participation in a community project because it would drastically cut into classroom time).	ABILITY CONFIDENCE IMPORTANCE	1 2 3 4 5 6 1 2 3 4 5 6 1 2 3 4 5 6
52.	Find nonteaching time for teachers to work on designated projects.	ABILITY CONFIDENCE IMPORTANCE	1 2 3 4 5 6 1 2 3 4 5 6 1 2 3 4 5 6

	SKILL STATEMENT		Low High
53.	Have fun with and enjoy students in your school.	ABILITY	1 2 3 4 5 6
		CONFIDENCE	1 2 3 4 5 6
		IMPORTANCE	1 2 3 4 5 6
54.	Facilitate within-school communication relating to professional issues (e.g., regularly having teachers report to the entire staff about special team/work projects).	ABILITY	1 2 3 4 5 6
		CONFIDENCE	1 2 3 4 5 6
		IMPORTANCE	1 2 3 4 5 6
55.	Review and discuss with staff information regarding the school's performance.	ABILITY	1 2 3 4 5 6
		CONFIDENCE	1 2 3 4 5 6
		IMPORTANCE	1 2 3 4 5 6
56.	Be honest, direct, and sincere with your staff.	ABILITY	1 2 3 4 5 6
		CONFIDENCE	1 2 3 4 5 6
		IMPORTANCE	1 2 3 4 5 6
57.	Give specific reasons for using a particular influence strategy with a teacher, teacher group, students, and/or parents.	ABILITY	1 2 3 4 5 6
		CONFIDENCE	1 2 3 4 5 6
		IMPORTANCE	1 2 3 4 5 6
58.	Establish two-way school/community communication systems by organizing parent groups, holding meetings with parents to discuss school goals, or building parent and teacher project teams.	ABILITY	1 2 3 4 5 6
		CONFIDENCE	1 2 3 4 5 6
		IMPORTANCE	1 2 3 4 5 6
59.	When a particular influence strategy is not working quickly, initiate a second strategy to accomplish the results you desire.	ABILITY	1 2 3 4 5 6
		CONFIDENCE	1 2 3 4 5 6
		IMPORTANCE	1 2 3 4 5 6
60.	Maintain high visibility in the school by talking daily with students, teachers, and support staff.	ABILITY	1 2 3 4 5 6
		CONFIDENCE	1 2 3 4 5 6
		IMPORTANCE	1 2 3 4 5 6
61.	Identify influential staff members to participate on school decision-making teams.	ABILITY	1 2 3 4 5 6
		CONFIDENCE	1 2 3 4 5 6
		IMPORTANCE	1 2 3 4 5 6
62.	Impose controls over others when they are involved in delegated decision-making activities.	ABILITY	1 2 3 4 5 6
		CONFIDENCE	1 2 3 4 5 6
		IMPORTANCE	1 2 3 4 5 6
63.	Acquire relevant information from your staff on important issues that would ultimately have an impact on their activities.	ABILITY	1 2 3 4 5 6
		CONFIDENCE	1 2 3 4 5 6
		IMPORTANCE	1 2 3 4 5 6
64.	Establish an informal information network both within your building and with others in the community to help you identify problems.	ABILITY	1 2 3 4 5 6
		CONFIDENCE	1 2 3 4 5 6
		IMPORTANCE	1 2 3 4 5 6
65.	Use a variety of decision-making techniques to define problems (e.g., decision trees, flow charts).	ABILITY	1 2 3 4 5 6
		CONFIDENCE	1 2 3 4 5 6
		IMPORTANCE	1 2 3 4 5 6
66.	Develop both short- and long-term strategies to implement solutions designed to solve a problem.	ABILITY	1 2 3 4 5 6
		CONFIDENCE	1 2 3 4 5 6
		IMPORTANCE	1 2 3 4 5 6

	SKILL STATEMENT		Low High
67.	Use specific techniques to reach consensus with others.	ABILITY	1 2 3 4 5 6
		CONFIDENCE	1 2 3 4 5 6
		IMPORTANCE	1 2 3 4 5 6
68.	Develop problem-solving skills within groups.	ABILITY	1 2 3 4 5 6
		CONFIDENCE	1 2 3 4 5 6
		IMPORTANCE	1 2 3 4 5 6
69.	Make decisions which may be unpopular and involve high risk.	ABILITY	1 2 3 4 5 6
		CONFIDENCE	1 2 3 4 5 6
		IMPORTANCE	1 2 3 4 5 6
70.	Delegate responsibilities to others who are capable of performing desired tasks.	ABILITY	1 2 3 4 5 6
		CONFIDENCE	1 2 3 4 5 6
		IMPORTANCE	1 2 3 4 5 6
71.	Resolve conflicts which arise during the decision-making process.	ABILITY	1 2 3 4 5 6
		CONFIDENCE	1 2 3 4 5 6
		IMPORTANCE	1 2 3 4 5 6
72.	Initiate problem-solving activities quickly (proactive stance).	ABILITY	1 2 3 4 5 6
		CONFIDENCE	1 2 3 4 5 6
		IMPORTANCE	1 2 3 4 5 6
73.	Accept authority and assume responsibility for <u>ALL</u> activities in your school.	ABILITY	1 2 3 4 5 6
		CONFIDENCE	1 2 3 4 5 6
		IMPORTANCE	1 2 3 4 5 6
74.	Identify situations where external help is required in order for personnel to solve a specific problem.	ABILITY	1 2 3 4 5 6
		CONFIDENCE	1 2 3 4 5 6
		IMPORTANCE	1 2 3 4 5 6
75.	Have others freely express their personal opinions and attitudes during problem-solving sessions.	ABILITY	1 2 3 4 5 6
		CONFIDENCE	1 2 3 4 5 6
		IMPORTANCE	1 2 3 4 5 6
76.	Accurately describe the perceptions others are expressing during problem-solving meetings.	ABILITY	1 2 3 4 5 6
		CONFIDENCE	1 2 3 4 5 6
		IMPORTANCE	1 2 3 4 5 6
77.	Identify causal relationships from data collected from a variety of sources.	ABILITY	1 2 3 4 5 6
		CONFIDENCE	1 2 3 4 5 6
		IMPORTANCE	1 2 3 4 5 6
78.	Monitor individual and group problem-solving activities.	ABILITY	1 2 3 4 5 6
		CONFIDENCE	1 2 3 4 5 6
		IMPORTANCE	1 2 3 4 5 6
79.	Make decisions not to decide.	ABILITY	1 2 3 4 5 6
		CONFIDENCE	1 2 3 4 5 6
		IMPORTANCE	1 2 3 4 5 6
80.	Acquire information from a variety of sources before making a decision.	ABILITY	1 2 3 4 5 6
		CONFIDENCE	1 2 3 4 5 6
		IMPORTANCE	1 2 3 4 5 6

JUST TWO MORE . . .

Please indicate the degree to which you agree or disagree with each statement below by circling the appropriate numeral to the right of each statement.

1.	When I really try, I can get through to the most difficult of teachers.	1 2 3 4 5 6
2.	An administrator is very limited in what he/she can achieve because the teacher's peer group has a large influence on his/her performance.	1 2 3 4 5 6

PLEASE PLACE THE COMPLETED QUESTIONNAIRE IN THE SELF-ADDRESSED ENVELOPE AND MAIL AT YOUR EARLIEST CONVENIENCE.

Thank you.

APPENDIX B

GIBSON TEACHER EFFICACY QUESTIONNAIRE

APPENDIX C

MODIFIED PRINCIPAL EFFICACY QUESTIONNAIRE

QUESTIONNAIRE: FORM D

Please respond to all of the questions. It is recommended that you go through the questionnaire quickly and record your initial responses to each item. To indicate the degree to which you agree or disagree with each statement, simply circle the appropriate numeral to the right.

A self-addressed envelope is enclosed for your convenience.

Thank you.

1.	When a teacher does better than usual, many times it is because I exerted a little extra effort.	1 2 3 4 5 6
2.	The hours I spend working with teachers have little influence on teachers as compared to the influence of other teachers.	1 2 3 4 5 6
3.	If my superintendent commented to me that teachers are more professional in my school than in other schools, it probably would be because I have some specific technique of managing their behavior which other principals may lack.	1 2 3 4 5 6
4.	The degree that a teacher can change his/her behavior is primarily related to factors outside of the schools' control.	1 2 3 4 5 6
5.	If a principal has adequate skills and motivation, he/she can get through to the most difficult teacher.	1 2 3 4 5 6
6.	If teachers are not self-disciplined they are not likely to accept any discipline from me.	1 2 3 4 5 6
7.	I have enough training to deal with almost any teacher.	1 2 3 4 5 6
8.	My administrative training program and experience have given me the necessary skills to be an effective administrator.	1 2 3 4 5 6
9.	Many administrators are stymied in their attempt to help teachers by lack of support from the community.	1 2 3 4 5 6
10.	Some teachers need to be placed in lower grades or assigned lower levels or responsibilities so that they are not subjected to unrealistic expectations.	1 2 3 4 5 6
11.	Individual differences among administrators account for the wide variation in student achievement.	1 2 3 4 5 6
12.	When a teacher is having difficulty with a new teaching assignment, I am usually able to adjust my explanation of it to the teacher's level.	1 2 3 4 5 6
13.	If one of my new teachers cannot remain on task for a particular assignment, there is little I could do to increase his/her attention until the teacher is ready.	1 2 3 4 5 6
14.	When a teacher gets a better rating than usual it is because I found better ways of helping that teacher.	1 2 3 4 5 6

15.	When I really try, I can get through to the most difficult of teachers.	1 2 3 4 5 6
16.	An administrator is very limited in what he/she can achieve because the teacher's peer group has a large influence on his/her performance.	1 2 3 4 5 6
17.	Principals are not a very powerful influence on teacher behavior when all factors are considered.	1 2 3 4 5 6
18.	If teachers are especially upset one day, I ask myself what I have been doing differently.	1 2 3 4 5 6
19.	When the achievement levels in the school improve, it is usually because I found more effective principal/staff approaches.	1 2 3 4 5 6
20.	If my superintendent suggested that I change some of my school curriculum, I would feel confident that I have the necessary skills to implement the unfamiliar curriculum.	1 2 3 4 5 6
21.	If a teacher masters a new teaching technique quickly, this might be because I knew the necessary steps in teaching that technique.	1 2 3 4 5 6
22.	Teacher conferences can help a principal judge how much to expect from a teacher by giving the principal an idea of the teacher's values toward education, discipline, etc.	1 2 3 4 5 6
23.	If teachers would attend workshops and take courses, I could do more.	1 2 3 4 5 6
24.	If a teacher did not remember information I gave in a previous meeting, I would know how to increase his/her retention in the next meeting.	1 2 3 4 5 6
25.	If a teacher in my school becomes disruptive, I feel assured that I know some techniques to redirect him/her quickly.	1 2 3 4 5 6
26.	District, school board, and union rules/policies hinder my doing the job I was hired to do.	1 2 3 4 5 6
27.	The influence of peer pressure and external policies can be overcome by good administrator practice.	1 2 3 4 5 6
28.	When a teacher progresses after being reassigned to my building, it is usually because I have had the chance to give him/her extra attention.	1 2 3 4 5 6
29.	If one of my teachers could not perform a teaching assignment, I would be able to accurately assess whether the assignment was an appropriate one for him/her.	1 2 3 4 5 6
30.	Even a principal with good administrative abilities may not reach many teachers.	1 2 3 4 5 6

Just a few more to do . . . . . Please go to the next page.

With the following, please indicate the importance you place on the behavior by circling the appropriate numeral to the right of the statement. The numbers are in ascending order, with the numbers 1 and 2 indicating low importance response levels and the numbers 5 and 6 high importance response levels. A "1" response would indicate that the skill is useless, while a "6" level response would indicate that you consider the skill extremely important.

		Low					High
1.	Work extra hard with teachers to make sure that they do their best.	1	2	3	4	5	6
2.	Work with teachers because I have an influence on their behavior.	1	2	3	4	5	6
3.	Use strategies which promote the development of professional teacher attitudes.	1	2	3	4	5	6
4.	Change teacher behaviors regardless of existing variables that tend to support the "status quo."	1	2	3	4	5	6
5.	To be motivated and skilled at a level which permits me to get through to the most difficult teachers on my staff.	1	2	3	4	5	6
6.	Discipline teachers when their performance is below my expectations.	1	2	3	4	5	6
7.	Actively seek additional training on how to deal effectively with student learning problems.	1	2	3	4	5	6
8.	Enroll in college/university courses to improve my administrative effectiveness.	1	2	3	4	5	6
9.	Acquire community support for my school.	1	2	3	4	5	6
10.	Reassign teachers when they are subjected to unrealistic expectations.	1	2	3	4	5	6
11.	Reduce variations in student achievement between specific student populations (e.g., male/female or minority groups).	1	2	3	4	5	6
12.	Adjust my expectations for a teacher when he/she is having difficulty with an assignment.	1	2	3	4	5	6
13.	Ensure that teachers successfully follow directives issued by myself.	1	2	3	4	5	6
14.	Find ways to help a poor teacher improve his/her performance ratings.	1	2	3	4	5	6
15.	Put forth extra effort in order to communicate with the most difficult staff member(s).	1	2	3	4	5	6
16.	Control the school's learning climate.	1	2	3	4	5	6
17.	Exert a powerful influence over teacher behavior.	1	2	3	4	5	6
18.	Continuously seek relevant feedback regarding my impact on teachers.	1	2	3	4	5	6

		Low					
19.	Find effective administrator-staff approaches to raise student achievement levels.	1	2	3	4	5	6
20.	In a proactive manner assist teachers implement unfamiliar curriculums.	1	2	3	4	5	6
21.	Explain and/or model new teaching concepts with teachers who are having difficulties with a new instructional approach.	1	2	3	4	5	6
22.	Conference with teachers to learn about their attitudes regarding teaching and learning.	1	2	3	4	5	6
23.	Get teachers to help one another with issues and concerns.	1	2	3	4	5	6
24.	Confirm during a conference or staff session that participants understand what I have said.	1	2	3	4	5	6
25.	Redirect disruptive teacher behavior.	1	2	3	4	5	6
26.	Ignore and circumvent policies that hinder my doing the job I was hired to do.	1	2	3	4	5	6
27.	Overcome the influence of negative teaching practices by using effective administrative strategies.	1	2	3	4	5	6
28.	Improve the performance ratings and effectiveness of teachers who have transferred into my building because of poor performance ratings in the previous building.	1	2	3	4	5	6
29.	Assess the appropriateness of a teacher's grade level and subject assignment in order to maximize learning outcomes.	1	2	3	4	5	6
30.	Maximize my administrative skill levels to reach <u>ALL</u> teachers.	1	2	3	4	5	6

PLEASE PLACE THE COMPLETED QUESTIONNAIRE IN THE SELF-ADDRESSED ENVELOPE AND MAIL AT YOUR EARLIEST CONVENIENCE.

Thank you.

APPENDIX D

STRUCTURED INTERVIEW GUIDE

SCHOOL IDENTIFICATION NUMBER: _____

DATE: _____

The purpose of the interview is to capture the essence of how administrators feel about the job. I have prepared a list of generic questions which I hope will help unlock some critical incidents that stand out in your mind as being important. Obviously, what you say will be kept confidential and references in my dissertation will be alphabetical, e.g., Principal A, Principal B, etc.

1. Did you do anything during your public school years that has had an impact on how you do things?

2. Did you do anything in college that has had an impact on how you do things?

3. What event or conversation prompted you to become a school administrator?

4. Can you describe any event or situation(s) that made you think that you'd like to do something else?

5. Describe a plan or program that you initiated that worked well. Were you unsure of yourself? What made you confident that you could do it? What did you learn from this experience?

6. Describe a program or plan you initiated that didn't work well. How did you feel when it was over?

7. How would you describe yourself: proactive or reactive? Describe what forces, persons, or situations support your being one or the other.

8. Describe a major decision you made this year. How did you feel making it?

9. Describe an unpopular decision you have made recently. How did you feel about it?

10. What decision have you pondered the longest in arriving at a conclusion? Is this typical, or was this a unique situation? Why do you think that it took so long?

11. Does your school have a mission statement? How did you inform teachers? Parents? Were you uncomfortable explaining to others what was important to the school?

12. Describe a difficult action you took to protect the welfare of your students. What feelings did you have doing this?

13. Describe the last one-on-one conference you held with a person in your school. How did you determine the point of view of the other person?

14. Describe the most complex problem you have handled at your school. From whom and how did you collect your information? Has there ever been a situation where you didn't get all the information you needed? Why?

15. Describe a situation where you had to organize data into some kind of meaningful pattern. Do you enjoy finding patterns in data/situations?

16. Describe a group situation where you were the facilitator and had to gain consensus where divergent views were present. How do you view others who challenge what you are saying?

17. Describe a conflict you have resolved. How do you feel about conflict between yourself and the staff? Parents?

18. Tell me of a success you have had in influencing others. Would you say that you have good persuasive skills? How did you acquire them?

19. Tell me of a time when you have been the brunt of negative publicity. Did you handle it? Did anyone help you? Did you seek help from others?

20. Describe something that you do better than the majority of your peers. What reasons do you have to support this perspective?

21. Describe a typical evaluation sequence you follow when assessing your staff. How do you react when you observe superior performance? Poor performance?

22. Describe a situation where you set goals for a subordinate. How did you feel about it?

23. Describe a time period when everything had to be done at once, and how you handled it. Would you say that the paperwork ever gets to you?

24. Do you assign work to other people? What? To whom? How do you monitor their progress?

25. Describe a situation where you had to get other people to help you when it was not their regular assignment. How did you feel?

26. Describe the most complex rule or policy you had to explain to other people. How did you prepare? Were you uncomfortable?

27. Are some presentations more demanding than others? Could you give me an example? What makes them this way?

28. What do you do when you cannot solve a problem or situation in your area of responsibility? How do you feel about these situations?

29. Have you ever had to say to your staff, "This is the way it is going to be"? How did you feel after?

30. Have you ever given in-service to your staff? How did you feel the first time you did it? Do you feel the same way now?

31. Are there any skills you feel that colleges, universities, or districts should organize for building administrators?

32. What do you think others think of your work? Your school? Why?

APPENDIX E

TABLES

Table E1.--Achievement data for low-performing school sample: nonrespondent population.

Number	Mathematics	Reading	Student Population
160	70.17	61.97	170.
161	72.10	48.00	448
162	69.23	57.37	305
163	66.77	74.20	165
164	47.53	40.17	389
165	65.73	52.07	225
166	58.60	50.27	222
167	62.60	40.27	483
168	63.17	48.07	246
169	63.17	57.53	284
170	67.70	55.93	251
171	65.83	52.90	412
172	70.30	43.23	388
173	64.57	58.70	212
174	50.17	51.20	178
175	66.47	58.10	206
176	61.33	48.93	470
177	68.73	55.13	352
178	67.87	56.07	347
179	67.03	59.90	150
180	70.40	56.97	400
181	51.40	53.30	241
182	69.10	52.17	242
183	64.53	54.93	510
184	61.67	60.97	379
185	69.50	53.10	180
186	69.77	46.73	204
187	70.10	54.03	179
188	69.70	61.43	442
189	64.40	49.40	469
190	73.23	58.73	245
191	63.73	48.73	179
192	64.57	45.63	288
193	67.13	41.60	432
194	60.40	57.63	296
195	61.20	45.57	408
196	56.10	57.93	205
197	70.30	47.77	190
198	68.80	76.47	142
199	71.03	63.07	252

Table E1.--Continued.

Number	Mathematics	Reading	Student Population
200	71.17	61.27	235
201	65.20	48.63	143
202	72.47	67.03	153
203	67.80	63.77	274
204	66.60	61.60	175
205	70.40	52.93	144
206	60.37	61.17	141
207	70.77	64.83	143
208	55.53	64.87	153
209	62.27	55.53	164
210	67.30	62.70	454
211	66.50	58.97	189

Table E2.--Achievement data for in-between school sample: nonrespondent population.

Number	Mathematics	Reading	Student Population
212	83.03	84.00	189
213	83.90	81.20	205
214	85.10	87.97	153
215	85.70	82.03	183
216	88.50	78.87	190
217	83.23	77.87	163
218	81.17	82.53	215
219	87.33	89.77	202
220	88.13	82.43	317
221	82.27	83.17	327
222	88.70	88.03	261
223	84.00	80.70	366
224	86.83	86.23	173
225	86.57	81.20	349
226	80.73	78.53	271
227	82.13	88.27	215
228	84.50	79.20	283
229	83.07	85.50	213
230	86.90	87.10	170
231	87.93	83.87	191
232	82.97	76.13	260
233	83.17	78.80	179
234	85.17	79.60	354
235	77.13	83.93	216
236	83.00	80.63	186
237	84.60	85.03	147
238	87.13	84.47	141
239	82.13	79.53	176
240	80.83	83.33	282
241	82.43	81.63	273
242	80.67	78.47	235
243	79.10	75.13	475
244	87.77	87.03	148
245	78.20	80.50	131
246	90.03	78.30	148
247	87.80	81.23	197
248	86.50	86.00	294
249	80.83	80.87	202
250	85.00	77.87	347

Table E2.--Continued.

Number	Mathematics	Reading	Student Population
251	88.53	83.47	196
252	83.87	80.47	220
253	82.40	82.77	260
254	87.67	85.10	316
255	82.63	79.33	155
256	74.83	80.20	180
257	86.03	81.33	335
258	83.57	76.23	133
259	82.47	82.70	440
260	88.27	83.33	144
261	78.33	82.60	252
262	87.17	85.83	302
263	88.57	82.67	180
264	83.14	83.07	301

Table E3.--Achievement data for high-performing school sample: nonrespondent population.

Number	Mathematics	Reading	Student Population
265	96.87	97.60	166
266	92.50	93.70	157
267	90.87	89.77	153
268	91.47	89.50	249
269	95.43	92.77	150
270	97.30	94.50	217
271	93.00	89.50	289
272	93.50	93.03	147
273	94.37	90.87	176
274	95.13	92.60	205
275	91.27	95.00	180
276	96.67	92.57	271
277	96.43	93.00	220
278	96.13	90.50	209
279	95.73	94.50	166
280	95.97	93.83	146
281	93.13	92.83	151
282	93.60	90.60	193
283	93.43	92.73	139
284	93.77	93.40	228
285	96.67	96.70	143
286	94.63	90.27	178
287	91.63	90.70	227
288	94.57	93.23	136
289	92.67	94.43	232
290	95.87	97.30	189
291	95.67	92.07	161
292	95.90	90.10	137
293	93.17	90.17	154
294	91.97	93.80	173
295	97.60	95.40	170
296	94.80	94.10	148
297	97.57	95.83	162
298	93.70	95.30	175
299	94.26	93.07	135
300	98.03	95.70	444

Table E3.--Continued.

Number	Mathematics	Reading	Student Population
301	96.47	94.47	254
302	94.03	90.83	159
303	94.53	95.30	182
304	94.17	90.73	161
305	99.40	97.00	168
306	95.83	91.93	149
307	91.63	92.37	144
308	96.00	92.27	131
309	94.33	93.87	168
310	96.90	95.73	215
311	92.53	93.10	189
312	94.43	96.17	180
313	95.97	94.17	152
314	92.37	94.40	148
315	91.53	91.47	164
316	100.00	97.93	130
317	93.17	96.20	131
318	90.40	95.47	176
319	95.40	90.23	190

Table E4.--Achievement data for low-performing school sample: respondent population.

Number	Mathematics	Reading	Student Population
001	65.53	52.07	174
002	71.70	70.80	250
003	67.00	60.50	169
004	72.63	56.40	199
005	72.67	59.13	146
006	57.80	38.23	292
007	62.60	62.73	157
008	69.70	36.77	152
009	65.23	69.17	188
010	72.47	69.30	212
011	63.50	54.43	164
012	58.30	61.23	149
013	72.40	48.73	307
014	72.70	69.10	175
015	65.90	55.87	513
016	65.70	70.27	205
017	62.50	67.43	144
018	69.63	67.60	151
019	61.37	63.73	410
020	69.90	69.07	281
021	67.17	62.53	129
022	69.30	69.40	240[a]
023	74.30	67.63	436[a]
024	66.30	52.20	126[a]
025	66.00	68.97	204
026	72.93	67.03	189
027	55.17	64.80	144
028	67.93	51.17	274
029	71.67	56.67	330
030	65.87	56.33	162
031	72.70	65.63	169
032	66.47	57.13	245
033	66.63	63.77	206
034	61.33	49.40	393
035	65.83	58.27	202
036	70.57	52.00	340
037	71.87	60.73	366
038	69.10	56.97	185[a]
039	63.77	59.73	232

Table E4.--Continued.

Number	Mathematics	Reading	Student Population
040	68.50	65.40	126
041	70.50	64.07	247
042	51.50	38.77	149
043	73.67	64.80	229
044	61.90	46.50	209
045	70.77	44.87	311

[a]Principal interviewed.

Table E5.--Achievement data for in-between school sample: respondent population.

Number	Mathematics	Reading	Student Population
046	86.47	82.93	160
047	88.17	84.47	160
048	89.20	84.73	142
049	88.00	79.83	179
050	85.27	85.33	254
051	89.23	80.47	156
052	79.43	81.20	245
053	83.00	84.07	161
054	86.30	82.30	255
055	83.33	76.67	150
056	87.43	82.33	280
057	84.47	79.70	134
058	83.57	83.50	145
059	84.50	78.20	403
060	83.17	84.67	142
061	85.90	80.10	135
062	85.80	75.77	156
063	88.77	84.03	252
064	87.90	84.57	194
065	84.43	83.13	158
066	86.73	83.77	339
067	78.63	80.47	318
068	85.10	88.33	154
069	78.57	75.97	374
070	87.43	86.70	196
071	87.57	69.07	281
072	81.63	78.43	249
073	82.13	79.07	204
074	77.70	80.73	146
075	77.83	79.93	213
076	82.90	76.10	163
077	78.30	82.03	247
078	86.87	82.10	230
079	87.60	86.10	137
080	82.47	87.87	148
081	81.67	74.73	164
082	80.73	80.27	384
083	83.23	84.80	191
084	86.20	84.90	202
085	81.33	79.00	162
086	81.90	81.40	172

Table E5.--Continued.

Number	Mathematics	Reading	Student Population
087	81.40	86.23	215
088	83.63	78.03	152
089	86.80	84.97	172
090	86.07	85.43	179
091	83.77	82.57	142
092	84.23	87.23	140
093	84.07	86.57	184
094	76.87	83.27	205
095	83.33	82.53	144
096	79.23	79.30	377
097	84.00	78.37	245
098	84.97	87.63	282
099	88.10	84.90	186
100	81.73	78.63	190
101	82.30	86.93	178
102	82.70	79.30	163

Table E6.--Achievement data for high-performing school sample: respondent population.

Number	Mathematics	Reading	Student Population
103	94.30	92.00	270[a]
104	91.93	91.57	164
105	92.93	94.10	265
106	95.37	91.03	145
107	97.50	96.30	142[a]
108	94.50	95.60	146
109	96.40	92.17	166
110	94.83	93.77	162
111	91.37	95.37	150
112	98.10	93.83	211
113	99.53	99.00	192
114	91.67	92.87	154
115	97.93	98.57	141
116	90.73	94.03	287
117	97.27	97.93	189
118	94.40	95.23	230
119	97.20	90.87	157
120	96.20	93.83	134
121	97.63	93.80	177
122	91.57	94.40	182
123	95.77	89.87	155
124	95.53	94.73	183[a]
125	95.17	93.03	202
126	89.27	93.27	204
127	95.00	92.90	198
128	98.80	94.57	172
129	90.77	91.20	189
130	94.67	92.40	149
131	93.47	92.90	168
132	94.50	95.97	213
133	95.57	95.60	155
134	94.13	91.87	261
135	90.07	93.63	160
136	93.77	93.10	219
137	93.13	93.53	217
138	91.37	93.17	231
139	94.73	97.07	199
140	97.57	96.47	177
141	96.03	94.10	203
142	96.63	96.63	178

Table E6.--Continued.

Number	Mathematics	Reading	Student Population
143	92.93	92.57	239
144	98.77	91.97	140
145	91.97	89.87	371
146	94.93	92.77	278
147	95.20	94.67	168
148	92.50	96.07	258
149	91.33	92.30	209[a]
150	96.13	93.83	207
151	97.77	94.83	176
152	96.57	95.43	196
153	93.63	91.63	161
154	94.00	94.57	184
155	93.40	93.93	147
156	94.90	94.63	153
157	90.47	96.47	211

[a]Principal interviewed.

Table E7.--Ability efficacy by frequency, mean, standard deviation: Principal Efficacy Questionnaire.

Item	Frequency 1	2	3	4	5	6	Missing Cases	Mean	S.D.
1A	1	2	5	10	40	19	2	4.857	1.035
2A	1	5	5	29	24	13	2	4.416	1.128
3A	1	1	7	18	31	20	1	4.756	1.059
4A	0	2	6	18	33	20	0	4.797	0.992
5A	1	3	13	13	27	22	0	4.620	1.233
6A	2	4	12	22	25	14	0	4.342	1.229
7A	0	2	11	15	32	18	1	4.679	1.063
8A	0	2	6	22	29	17	3	4.697	0.994
9A	0	0	3	24	28	23	1	4.910	0.871
10A	0	1	8	23	23	21	3	4.724	1.028
11A	0	0	1	19	30	29	0	5.101	0.810
12A	1	3	10	21	27	17	0	4.532	1.153
13A	0	0	0	16	24	37	2	5.273	0.789
14A	0	1	2	22	30	23	1	4.923	0.894
15A	0	4	8	19	27	19	2	4.636	1.123
16A	1	5	13	23	20	15	2	4.312	1.228
17A	0	3	12	27	17	17	3	4.434	1.124
18A	0	7	6	24	26	14	2	4.442	1.153
19A	0	2	10	24	23	16	4	4.547	1.065
20A	1	13	13	28	11	11	2	3.883	1.298
21A	0	3	9	24	26	15	2	4.532	1.059
22A	0	1	10	20	25	21	2	4.714	1.050
23A	0	1	7	14	24	32	1	5.013	1.038
24A	0	2	10	18	27	20	2	4.688	1.079
25A	0	0	3	8	24	43	1	5.372	0.824
26A	1	0	12	21	27	17	1	4.590	1.074
27A	1	5	15	22	21	14	1	4.269	1.224
28A	2	0	9	25	25	17	1	4.564	1.112
29A	1	5	12	25	26	10	0	4.266	1.140
30A	0	5	10	24	30	10	0	4.380	1.066
31A	1	6	15	24	24	8	1	4.128	1.155
32A	0	5	20	19	18	17	0	4.278	1.240
33A	0	1	7	10	36	25	0	4.975	0.960
34A	0	1	12	29	29	8	0	4.392	0.912
35A	2	1	4	14	32	25	1	4.897	1.112
36A	0	1	2	25	36	15	0	4.785	0.827
37A	1	5	11	28	24	7	3	4.184	1.092
38A	0	0	2	6	29	41	1	5.397	0.744
39A	0	1	5	22	29	19	3	4.789	0.943
40A	1	12	8	23	18	17	0	4.215	1.374
41A	0	0	2	19	27	31	0	5.101	0.856
42A	0	5	9	22	31	12	0	4.456	1.084
43A	5	11	17	22	17	5	2	3.649	1.326

Table E7.--Continued.

Item	Frequency 1	2	3	4	5	6	Missing Cases	Mean	S.D.
44A	0	1	4	10	27	36	1	5.192	0.941
45A	0	1	3	7	29	38	1	5.282	0.881
46A	0	2	4	17	34	20	2	4.857	0.956
47A	0	3	16	17	29	13	1	4.423	1.111
48A	0	5	11	15	24	22	2	4.610	1.226
49A	0	1	7	22	33	14	2	4.675	0.924
50A	0	0	2	15	24	38	0	5.241	0.851
51A	1	3	7	17	21	28	2	4.792	1.218
52A	1	7	14	22	18	16	1	4.244	1.291
53A	0	0	3	6	22	48	0	5.456	0.797
54A	0	3	12	18	20	22	4	4.613	1.184
55A	0	3	4	17	23	31	1	4.962	1.086
56A	0	0	0	2	24	53	0	5.646	0.532
57A	0	2	10	22	23	21	1	4.654	1.091
58A	0	2	12	23	19	22	1	4.603	1.132
59A	1	6	13	23	26	8	2	4.182	1.155
60A	0	0	1	6	20	51	1	5.551	0.696
61A	0	0	0	6	25	47	1	5.526	0.639
62A	1	4	12	26	23	11	2	4.286	1.134
63A	1	0	5	21	32	19	1	4.795	0.972
64A	0	1	11	27	22	17	1	4.551	1.028
65A	6	12	20	19	12	9	1	4.654	1.193
66A	2	2	12	22	24	17	0	4.456	1.207
67A	2	3	9	26	25	13	1	4.385	1.165
68A	2	4	14	30	17	12	0	4.165	1.192
69A	0	3	7	20	27	22	0	4.734	1.083
70A	0	3	5	17	29	25	0	4.861	1.059
71A	0	1	1	19	42	16	0	4.899	0.778
72A	0	3	8	20	27	20	1	4.679	1.087
73A	1	0	0	13	24	41	0	5.304	0.897
74A	0	1	5	15	33	24	1	4.949	0.938
75A	0	2	6	12	29	29	1	4.987	1.038
76A	1	1	6	22	32	15	2	4.662	1.008
77A	0	6	15	31	15	7	5	4.027	1.060
78A	0	3	10	30	24	9	3	4.342	0.987
79A	4	7	14	20	20	8	6	3.945	1.343
80A	0	0	3	16	28	29	3	5.092	0.867

Table E8.--Expectancy efficacy by frequency, mean, standard deviation: Principal Efficacy Questionnaire.

Item	Frequency 1	2	3	4	5	6	Missing Cases	Mean	S.D.
1E	1	4	6	17	31	18	2	4.649	1.156
2E	3	3	11	21	29	11	1	4.321	1.222
3E	1	4	10	15	25	24	0	4.658	1.249
4E	0	1	7	20	24	26	1	4.859	1.028
5E	0	3	8	22	24	21	1	4.677	1.101
6E	3	6	12	22	24	11	1	4.167	1.243
9E	0	1	8	22	23	25	0	4.797	1.042
10E	1	2	12	18	23	22	1	4.615	1.198
11E	0	1	5	17	30	25	1	4.936	0.958
12E	1	6	8	19	23	21	1	4.538	1.276
13E	0	2	4	23	18	30	2	4.909	1.066
14E	0	3	7	24	24	21	0	4.671	1.083
15E	1	2	14	16	29	15	1	4.462	1.181
16E	2	5	14	22	21	14	1	4.244	1.271
17E	0	4	15	28	15	15	2	4.286	1.145
18E	1	5	10	21	23	16	3	4.421	1.225
19E	0	2	14	17	30	13	3	4.500	1.065
20E	1	9	7	19	19	21	3	4.434	1.370
21E	0	1	9	23	25	18	3	4.658	1.014
22E	1	0	6	18	25	26	3	4.895	1.053
23E	1	1	14	14	25	23	1	4.667	1.192
24E	0	2	11	19	22	22	3	4.671	1.124
25E	0	0	2	5	25	45	2	5.468	0.736
26E	2	2	6	25	21	22	1	4.628	1.196
27E	2	4	15	24	17	17	0	4.278	1.280
28E	2	5	8	15	27	20	2	4.558	1.303
29E	1	6	16	21	19	15	1	4.231	1.268
30E	0	5	18	13	24	17	2	4.390	1.248
31E	0	9	16	18	20	14	2	4.182	1.285
32E	1	7	14	15	27	14	1	4.308	1.282
33E	0	2	3	18	27	28	1	4.974	0.993
34E	1	5	10	29	20	13	1	4.295	1.163
35E	1	1	5	15	27	28	2	4.948	1.075
36E	0	1	6	20	31	20	1	4.808	0.954
37E	2	5	13	25	17	13	4	4.187	1.259
38E	0	1	3	4	26	43	2	5.390	0.861
39E	0	1	5	18	26	25	4	4.920	0.983
40E	3	9	9	17	18	22	1	4.333	1.483
41E	0	3	5	17	21	32	1	4.949	1.115
42E	2	5	9	21	24	17	1	4.423	1.274
43E	7	13	20	17	14	7	1	3.500	1.430

Table E7.--Continued.

Item	Frequency 1	2	3	4	5	6	Missing Cases	Mean	S.D.
44E	0	1	6	7	26	37	2	5.195	0.987
45E	0	2	4	5	27	39	2	5.260	0.979
46E	0	4	10	14	25	23	3	4.697	1.189
47E	2	5	12	22	19	17	2	4.325	1.302
48E	0	5	11	15	24	22	2	4.610	1.226
49E	0	5	4	23	30	14	3	4.579	1.062
50E	0	0	4	13	24	37	1	5.205	0.903
51E	1	4	5	15	20	32	2	4.883	1.246
52E	1	8	11	16	22	21	0	4.430	1.356
53E	0	1	2	6	21	48	1	5.449	0.847
54E	0	5	13	17	19	22	3	4.526	1.259
55E	0	3	5	17	22	30	2	4.922	1.109
56E	0	0	2	6	19	51	1	5.526	0.751
57E	1	3	9	18	21	25	2	4.688	1.228
58E	0	7	6	19	23	24	0	4.646	1.241
59E	2	8	10	20	25	13	1	4.244	1.311
60E	1	1	1	5	18	52	1	5.487	0.936
61E	0	0	0	8	30	39	2	5.403	0.674
62E	6	12	14	20	18	7	2	3.688	1.426
63E	2	2	4	18	30	21	2	4.753	1.149
64E	0	6	14	21	17	21	0	4.418	1.267
65E	7	12	11	25	13	9	2	3.675	1.464
66E	2	4	6	24	23	19	1	4.526	1.235
67E	2	3	12	17	25	18	2	4.481	1.263
68E	1	9	9	25	15	18	2	4.273	1.334
69E	0	5	11	17	21	24	1	4.615	1.240
70E	0	1	8	11	28	30	1	5.000	1.059
71E	0	0	5	16	32	25	1	4.987	0.890
72E	0	2	8	21	24	22	2	4.727	1.072
73E	0	2	1	10	23	42	1	5.308	0.930
74E	1	2	2	21	31	20	2	4.805	1.026
75E	1	2	5	9	26	34	2	5.065	1.128
76E	1	2	6	16	28	25	1	4.833	1.121
77E	2	9	15	26	10	13	4	3.960	1.330
78E	1	5	10	28	21	12	2	4.286	1.157
79E	3	9	20	18	16	8	5	3.797	1.324
80E	0	2	4	11	27	33	2	5.104	1.008

Table E9.--Importance efficacy by frequency, mean, standard deviation: Principal Efficacy Questionnaire.

Item	Frequency 1	2	3	4	5	6	Missing Cases	Mean	S.D.
1I	1	8	16	13	25	10	1	4.128	1.252
2I	1	7	5	24	28	12	2	4.390	1.183
3I	2	6	8	15	25	22	1	4.551	1.345
4I	0	2	2	9	23	42	1	5.295	0.955
5I	0	3	7	11	24	33	1	4.987	1.134
6I	0	4	11	23	20	20	1	4.526	1.170
7I	1	4	9	20	25	19	1	4.551	1.202
8I	0	2	9	16	20	30	2	4.870	1.140
9I	0	0	4	19	28	27	1	5.000	0.897
10I	0	3	5	9	30	30	2	5.026	1.063
11I	0	0	4	12	19	43	1	5.295	0.913
12I	2	3	3	18	22	30	1	4.859	1.235
13I	0	0	2	17	22	38	0	5.215	0.872
14I	0	0	1	12	30	35	1	5.269	0.767
15I	1	4	7	14	24	28	1	4.795	1.242
16I	0	4	13	16	24	20	2	4.558	1.198
17I	1	2	7	24	23	19	3	4.618	1.119
18I	0	3	5	16	25	27	3	4.895	1.090
19I	1	1	5	16	25	27	4	4.920	1.088
20I	0	0	2	4	18	52	3	5.579	0.717
21I	0	2	16	20	22	16	3	4.447	1.124
22I	0	1	3	6	29	37	3	5.289	0.877
23I	7	6	11	16	19	20	0	4.190	1.578
24I	0	3	10	19	24	22	1	4.667	1.136
25I	0	0	1	1	22	54	1	5.654	0.577
26I	1	2	7	11	28	30	0	4.937	1.147
27I	0	5	7	21	18	27	1	4.705	1.218
28I	0	0	4	14	19	40	2	5.234	0.930
29I	0	7	11	12	26	22	1	4.577	1.284
30I	0	1	5	19	29	24	1	4.897	0.961
31I	0	2	3	17	29	25	3	4.947	0.978
32I	0	1	10	13	27	27	1	4.885	1.069
33I	0	0	2	12	25	39	1	5.295	0.824
35I	1	1	6	9	20	40	2	5.156	1.125
36I	0	0	2	13	29	34	1	5.218	0.816
37I	1	7	9	22	24	12	4	4.293	1.228
38I	0	0	1	2	23	51	2	5.610	0.610
39I	0	1	2	5	30	37	4	5.333	0.827
40I	3	5	8	15	25	22	1	4.538	1.374
41I	0	1	5	9	23	40	1	5.231	0.979
42I	1	2	8	19	29	19	1	4.667	1.113
43I	8	8	18	20	13	10	2	3.675	1.482

Table E9.--Continued.

Item	Frequency 1	2	3	4	5	6	Missing Cases	Mean	S.D.
44I	1	0	2	6	17	51	2	5.481	0.912
45I	0	0	1	3	25	48	2	5.558	0.639
46I	0	3	6	12	24	31	3	4.974	1.119
47I	1	5	11	18	24	18	2	4.468	1.252
48I	0	0	6	8	31	32	2	5.156	0.904
49I	0	1	4	16	34	21	3	4.921	0.906
50I	0	0	5	7	23	43	1	5.333	0.892
51I	0	3	4	10	24	37	1	5.128	1.073
52I	2	1	10	17	23	25	1	4.705	1.229
53I	0	0	2	6	16	54	1	5.564	0.749
54I	1	1	8	17	22	27	3	4.829	1.148
55I	0	0	4	13	18	42	2	5.273	0.927
56I	0	0	0	3	12	63	1	5.769	0.508
57I	1	3	8	17	23	25	2	4.727	1.210
58I	0	5	1	15	26	31	1	4.987	1.111
59I	2	3	10	16	29	17	2	4.532	1.231
60I	0	0	3	5	11	58	2	5.610	0.781
61I	0	0	3	5	18	51	2	5.519	0.788
62I	7	13	20	20	8	9	2	3.468	1.438
63I	0	0	1	18	30	28	2	5.104	0.804
64I	1	3	8	21	22	23	1	4.654	1.193
65I	2	11	15	21	15	13	2	3.974	1.376
66I	1	4	5	22	20	25	1	4.718	1.216
67I	2	4	9	13	28	21	2	4.610	1.289
68I	0	5	5	23	18	26	2	4.714	1.191
69I	1	4	9	13	28	23	1	4.692	1.231
70I	0	1	2	7	29	39	1	5.321	0.845
71I	0	1	2	9	31	35	1	5.244	0.856
72I	0	1	5	13	21	37	2	5.143	1.009
73I	2	3	2	8	16	47	1	5.231	1.237
74I	1	2	2	8	33	31	2	5.117	1.026
75I	1	1	2	7	24	42	2	5.312	0.990
76I	0	2	2	14	34	25	2	5.013	0.925
77I	1	4	13	23	20	13	5	4.297	1.190
78I	1	3	9	31	18	14	3	4.368	1.118
79I	5	6	16	14	19	14	5	4.054	1.479
80I	0	1	4	10	20	41	3	5.263	0.971

Table E10.--Ability by performance mean, standard deviation, significance values: Principal Efficacy Questionnaire.

Item	Cases	School Classification: Low Performing Mean	Low Performing S.D.	In-Between Mean	In-Between S.D.	High Performing Mean	High Performing S.D.	F	Sig. of F
1A	77	5.000	0.976	5.000	1.134	4.577	0.945	1.456	.2398
2A	77	4.682	1.128	4.448	1.213	4.154	0.925	1.337	.2690
3A	78	4.727	1.203	4.724	0.996	4.815	1.039	.061	.9406
4A	79	4.913	1.164	4.759	1.023	4.741	0.813	.218	.8046
5A	79	4.652	1.402	4.655	1.010	4.556	1.340	.055	.9464
6A	79	4.696	1.185	4.276	1.192	4.111	1.281	1.490	.2319
7A	78	4.955	1.133	4.586	1.018	4.556	1.050	1.033	.3610
8A	76	4.909	0.972	4.643	0.989	4.577	1.027	.727	.4867
9A	78	5.273	0.767	4.656	0.814	4.889	0.934	3.352	.0403
10A	76	5.091	1.065	4.630	0.967	4.519	1.014	2.117	.1277
11A	79	5.261	0.752	5.069	0.799	5.000	0.877	.675	.5123
12A	79	4.565	1.308	4.483	1.122	4.567	1.086	.041	.9602
13A	77	5.364	0.790	5.179	0.819	5.296	0.775	.352	.7047
14A	78	5.000	0.976	5.000	0.802	4.778	0.934	.539	.5856
15A	77	4.667	1.461	4.793	0.861	4.444	1.086	.679	.5104
16A	77	4.546	1.143	4.241	1.380	4.192	1.132	.563	.5720
17A	76	4.524	1.167	4.310	1.198	4.500	1.030	.282	.7550
18A	77	4.381	1.351	4.621	1.015	4.296	1.137	.587	.5585
19A	75	4.750	1.020	4.724	1.032	4.192	1.059	2.323	.1053
20A	77	4.000	1.517	3.655	1.317	4.037	1.091	.717	.4914
21A	77	4.524	1.327	4.655	0.814	4.407	1.083	.378	.6868
22A	77	4.571	1.248	4.828	0.929	4.704	1.031	.359	.6998
23A	78	5.273	0.935	5.172	0.966	4.630	1.115	3.022	.0547
24A	77	4.773	1.232	4.821	0.983	4.482	1.051	.772	.4660
25A	78	5.652	0.573	5.393	0.832	5.111	0.934	2.823	.0658
26A	78	4.727	1.203	4.448	1.089	4.630	0.967	.444	.6433
27A	78	4.136	1.521	4.138	1.157	4.519	1.014	.853	.4301
28A	78	4.348	1.526	4.793	0.902	4.500	0.860	1.096	.3394
29A	79	4.391	1.196	4.172	1.038	4.259	1.228	.232	.7932
30A	79	4.609	1.076	4.172	1.071	4.407	1.047	1.091	.3411
31A	78	4.217	1.413	4.214	1.031	3.963	1.055	.416	.6610
32A	79	4.391	1.373	4.172	1.256	4.296	1.137	.200	.8192
33A	79	5.000	1.168	5.103	0.772	4.815	0.962	.637	.5318
34A	79	4.522	0.846	4.379	0.903	4.296	0.993	.378	.6863
35A	78	4.818	1.296	4.931	1.100	4.928	0.997	.076	.9268
36A	79	4.913	0.668	4.690	1.039	4.778	0.698	.463	.6311
37A	76	4.136	1.246	3.964	1.170	4.462	0.812	1.445	.2425
38A	78	5.522	0.731	5.414	0.628	5.269	0.874	.708	.4961
39A	76	5.000	1.024	4.643	0.989	4.769	0.815	.891	.4147
40A	79	4.130	1.546	4.138	1.356	4.370	1.276	.257	.7743

Table E10.--Continued.

Item	Cases	School Classification: Low Performing Mean	Low Performing S.D.	In-Between Mean	In-Between S.D.	High Performing Mean	High Performing S.D.	F	Sig. of F
41A	79	5.000	0.798	5.276	0.841	5.000	0.920	.954	.3908
42A	79	4.435	1.343	4.379	0.979	4.556	0.974	.187	.8298
43A	77	3.455	1.683	3.586	1.268	3.885	1.033	.674	.5127
44A	78	5.174	1.073	5.214	0.917	5.185	0.879	.013	.9876
45A	78	5.348	0.832	5.107	0.994	5.407	0.797	.886	.4165
46A	77	4.826	0.937	4.815	1.145	4.926	0.781	.106	.8996
47A	78	4.348	1.071	4.393	1.166	4.519	1.122	.159	.8531
48A	78	4.609	1.033	4.357	1.062	4.667	0.920	.730	.4853
49A	77	4.913	0.900	4.556	1.013	4.593	0.844	1.099	.3385
50A	79	5.261	0.864	5.241	0.912	5.222	0.801	.013	.9876
51A	77	5.000	1.024	4.964	1.105	4.444	1.423	1.734	.1837
52A	78	4.364	1.465	4.379	1.115	4.000	1.330	.731	.4850
53A	79	5.522	0.665	5.310	0.806	5.556	0.892	.768	.4676
54A	75	4.682	1.287	4.741	1.259	4.423	1.027	.522	.5957
55A	78	5.217	1.043	4.679	1.219	5.037	0.940	1.682	.1929
56A	79	5.783	0.422	5.552	0.572	5.630	0.565	1.234	.2970
57A	78	4.739	1.389	4.621	1.050	4.615	0.852	.098	.9072
58A	78	4.455	1.262	4.759	1.023	4.556	1.155	.480	.6205
59A	77	3.864	1.424	4.500	0.962	4.111	1.050	1.998	.1429
60A	78	5.609	0.656	5.414	0.780	5.654	0.629	.925	.4011
61A	78	5.636	0.581	5.414	0.733	5.556	0.577	.800	.4533
62A	77	4.546	1.057	4.179	1.390	4.185	0.879	.804	.4513
63A	78	4.739	1.214	4.821	0.863	4.815	0.879	.053	.9487
64A	78	4.546	1.057	4.552	1.183	4.556	0.847	.001	.9994
65A	78	3.870	1.740	3.464	1.201	3.482	1.369	.622	.5398
66A	79	4.565	1.409	4.414	1.086	4.407	1.185	.131	.8776
67A	78	4.913	1.041	4.241	1.215	4.077	1.093	3.742	.0282
68A	79	4.304	1.363	4.138	1.093	4.074	1.174	.238	.7885
69A	79	5.044	0.976	4.552	1.121	4.667	1.109	2.418	.2485
70A	79	4.957	1.022	4.966	0.944	4.667	1.209	.684	.5077
71A	79	4.870	0.757	4.862	0.953	4.963	0.587	.137	.8719
72A	78	5.000	1.087	4.483	1.056	4.615	1.098	1.541	.2208
73A	79	5.478	0.790	5.345	0.721	5.111	1.121	1.091	.3408
74A	78	5.087	0.793	4.966	0.944	4.808	1.059	.541	.5842
75A	78	5.087	1.276	4.793	1.048	5.115	0.766	.807	.4500
76A	77	4.909	1.065	4.345	1.045	4.808	0.849	2.459	.0925
77A	74	4.000	1.225	4.036	0.999	4.040	1.020	.009	.9907
78A	76	4.273	0.935	4.276	1.162	4.480	0.823	.357	.7008
79A	73	3.750	1.517	4.071	1.331	3.960	1.241	.330	.7197
80A	76	4.955	0.999	5.172	0.848	5.120	0.781	.408	.6666

Table E11.--Expectancy by performance mean, standard deviation, significance values: Principal Efficacy Questionnaire.

Item	Cases	School Classification: Low Performing Mean	Low Performing S.D.	In-Between Mean	In-Between S.D.	High Performing Mean	High Performing S.D.	F	Sig. of F
1E	77	4.727	1.121	4.544	1.317	4.577	1.027	.099	.9059
2E	78	4.304	1.396	4.345	1.203	4.308	1.123	.009	.9911
3E	79	4.913	1.240	4.241	1.431	4.889	0.934	2.661	.0764
4E	78	4.864	1.125	4.724	1.032	5.000	0.961	.497	.6105
5E	78	4.455	1.143	4.586	1.082	4.926	1.072	1.242	.2946
6E	78	4.500	1.102	4.069	1.335	4.000	1.387	1.038	.3591
7E	79	4.522	1.238	4.241	1.380	4.482	1.087	.403	.6700
8E	78	4.783	1.278	4.414	1.323	4.577	1.138	.558	.5748
9E	79	5.087	1.084	4.621	1.083	4.741	0.944	1.356	.2638
10E	78	4.870	1.180	4.571	1.230	4.444	1.188	.808	.4497
11E	78	4.046	0.950	4.966	1.052	4.815	0.879	.367	.6939
12E	78	4.727	1.279	4.310	1.312	4.630	1.245	.768	.4673
13E	77	5.046	1.045	4.643	1.129	5.074	0.997	1.391	.2553
14E	79	4.522	1.201	4.621	1.015	4.852	1.064	.620	.5404
15E	78	4.227	1.270	4.483	1.243	4.630	1.043	.706	.4970
16E	78	4.261	1.322	4.276	1.437	4.192	1.059	.032	.9687
17E	77	4.227	1.232	4.379	1.147	4.231	1.107	.152	.8593
18E	76	4.650	1.387	4.379	1.293	4.296	1.031	.500	.6089
19E	76	4.571	1.128	4.621	1.147	4.308	1.011	.652	.5242
20E	76	4.300	1.780	4.414	1.150	4.556	1.281	.201	.8185
21E	76	4.950	1.050	4.621	0.863	4.482	1.122	1.267	.2878
22E	76	5.000	1.026	4.828	1.197	4.889	0.934	.156	.8561
23E	78	4.773	1.343	4.586	1.181	4.667	1.109	.150	.8611
24E	76	4.571	1.326	4.786	0.995	4.230	1.115	.242	.7861
25E	77	5.546	0.739	5.536	0.637	5.333	0.832	.687	.5065
26E	78	4.409	1.501	4.552	1.055	4.889	1.050	1.071	.3478
27E	79	4.044	1.609	4.103	1.145	4.667	1.038	1.945	.1500
28E	77	4.636	1.433	4.586	1.296	4.462	1.240	.115	.8914
29E	78	4.318	1.323	3.897	4.519	4.519	1.312	1.790	.1740
30E	77	4.591	1.141	4.069	1.252	4.577	1.302	1.560	.2171
31E	77	4.318	1.359	4.036	1.262	4.222	1.281	.313	.7325
32E	78	4.227	1.378	4.310	1.339	4.370	1.182	.074	.9290
33E	78	5.136	1.037	4.966	1.017	4.852	0.949	.493	.6130
34E	78	4.273	1.162	4.414	1.053	4.185	1.302	.270	.7639
35E	77	4.857	1.424	5.103	0.860	4.852	0.989	.498	.6209
36E	78	4.818	1.007	4.690	1.039	4.926	0.829	.424	.6560
37E	75	4.429	1.399	3.786	1.343	4.423	0.945	2.347	.1030
38E	77	5.364	0.954	5.517	0.575	5.269	1.041	.577	.5643
39E	75	5.095	0.995	4.714	1.084	5.000	0.849	1.034	.3609
40E	78	4.636	1.529	3.966	1.476	4.482	1.424	1.506	.2285

Table E11.--Continued.

Item	Cases	School Classification: Low Performing Mean	Low Performing S.D.	In-Between Mean	In-Between S.D.	High Performing Mean	High Performing S.D.	F	Sig. of F
41E	78	4.682	1.323	5.103	1.145	5.000	0.877	.936	.3968
42E	78	4.727	1.352	4.069	1.387	4.556	1.013	1.939	.1511
43E	78	3.522	1.675	3.172	1.365	3.846	1.223	1.547	.2197
44E	77	5.364	0.848	5.179	0.983	5.074	1.107	.521	.5963
45E	77	5.409	0.959	5.214	0.917	5.185	1.076	.359	.6999
46E	76	4.727	1.203	4.556	1.188	4.815	1.210	.325	.7238
47E	77	4.136	1.356	4.107	1.315	4.704	1.203	1.802	.1722
48E	77	4.409	1.297	4.536	1.374	4.852	0.989	.869	.4238
49E	76	4.818	1.007	4.333	1.144	4.630	1.006	1.323	.2726
50E	78	5.318	0.946	5.276	0.882	5.037	0.898	.725	.4878
51E	77	4.955	1.214	4.857	1.239	4.852	1.322	.050	.9518
52E	79	4.478	1.473	4.586	1.181	4.222	1.450	.518	.5980
53E	78	5.591	0.590	5.345	0.814	5.444	1.050	.521	.5958
54E	76	4.696	1.329	4.444	1.368	4.462	1.104	.294	.7463
55E	77	5.182	1.007	4.643	1.193	5.000	1.074	1.580	.2128
56E	78	5.455	0.858	5.552	0.632	5.556	0.801	.134	.8745
57E	77	4.864	1.490	4.552	1.183	4.692	1.050	.398	.6733
58E	79	4.696	1.363	4.552	1.270	4.704	1.137	.128	.8797
59E	78	4.261	1.484	4.286	1.411	4.185	1.076	.042	.9587
60E	78	5.409	1.141	5.586	0.733	5.444	0.974	.262	.7704
61E	77	5.429	0.676	5.414	0.733	5.370	0.629	.049	.9520
62E	77	4.000	1.342	3.379	1.720	3.778	1.086	1.244	.2943
63E	77	5.000	1.234	4.750	1.041	4.556	1.188	.905	.4090
64E	79	4.739	1.176	4.069	1.335	4.519	1.221	1.972	.1462
65E	77	3.864	1.833	3.357	1.367	3.852	1.200	1.041	.3585
66E	78	4.546	1.371	4.586	1.181	4.444	1.220	.094	.9106
67E	77	4.682	1.359	4.517	1.153	4.269	1.313	.650	.5252
68E	77	4.182	1.532	4.276	1.192	4.346	1.355	.088	.9155
69E	78	4.909	1.231	4.483	1.214	4.519	1.282	.862	.4265
70E	78	5.227	0.813	4.862	1.157	4.963	1.055	.806	.4505
71E	78	4.909	1.065	5.035	0.823	5.000	0.832	.126	.8822
72E	77	4.955	0.950	4.586	1.181	4.692	1.050	.755	.4736
73E	78	5.455	0.800	5.310	1.105	5.185	0.834	.502	.6074
74E	77	4.864	0.990	4.862	0.990	4.692	1.123	.233	.7930
75E	77	5.136	1.283	4.966	1.180	5.115	0.952	.179	.8366
76E	78	4.913	1.311	4.724	1.162	4.885	0.909	.218	.8044
77E	75	4.000	1.380	3.750	1.322	4.160	1.313	.635	.5327
78E	77	4.479	1.123	4.138	1.125	4.280	1.242	.549	.5799
79E	74	3.714	1.648	3.857	1.325	3.800	1.041	.068	.9342
80E	77	4.913	1.164	5.069	1.100	5.320	0.690	1.001	.3710

Table E12.--Importance by performance mean, standard deivation, significance values: Principal Efficacy Questionnaire.

Item	Cases	School Classification: Low Performing Mean	Low Performing S.D.	In-Between Mean	In-Between S.D.	High Performing Mean	High Performing S.D.	F	Sig. of F
1I	78	4.130	1.140	4.241	1.244	4.000	1.386	.250	.7796
2I	77	4.000	1.414	4.517	1.243	4.577	0.809	1.721	.1860
3I	78	4.591	1.469	4.379	1.399	4.704	1.203	.414	.6628
4I	78	5.091	1.306	5.310	0.806	5.444	0.751	.833	.4386
5I	78	4.818	1.220	4.897	1.176	5.222	1.013	.915	.4049
6I	78	4.682	1.287	4.276	1.162	4.667	1.074	1.054	.3536
7I	78	4.636	1.399	4.276	1.162	4.778	1.050	1.306	.2771
8I	77	5.273	0.883	4.793	1.236	4.615	1.169	2.152	.1235
9I	78	5.227	0.869	4.897	0.860	4.926	0.958	.990	.3763
10I	77	5.182	0.907	4.893	1.133	5.037	1.126	.451	.6391
11I	78	5.227	1.020	5.414	0.780	5.222	0.974	.385	.6816
12I	78	5.318	0.716	4.483	1.573	4.889	1.050	3.025	.0545
13I	79	5.348	0.832	5.000	0.886	5.333	0.877	1.411	.2502
14I	78	5.182	0.907	5.172	0.759	5.444	0.641	1.080	.3450
15I	78	5.000	1.234	4.690	1.198	4.741	1.318	.424	.6563
16I	77	4.500	1.336	4.517	1.353	4.654	0.892	.123	.8845
17I	76	4.619	1.244	4.483	1.214	4.769	0.908	.443	.6442
18I	76	4.950	1.276	4.897	1.176	4.852	0.864	.045	.9556
19I	75	4.850	0.988	4.828	1.136	5.077	1.129	.410	.6651
20I	76	5.650	0.489	5.517	0.785	5.593	0.797	.206	.8141
21I	76	4.850	1.137	4.035	1.085	4.593	1.047	3.715	.0291
22I	76	5.300	1.031	5.241	0.951	5.333	0.679	.077	.9260
23I	79	4.261	1.657	3.862	1.726	4.482	1.312	1.114	.3336
24I	78	4.773	1.152	4.517	1.214	4.741	1.060	.398	.6731
25I	78	5.727	0.456	5.690	0.660	5.556	0.577	.619	.5412
26I	79	4.870	1.254	4.690	1.257	5.259	0.859	1.816	.1697
27I	78	4.818	1.402	4.379	1.147	4.963	1.091	1.772	.1770
28I	77	5.364	0.954	5.070	0.961	5.307	0.884	.746	.4777
29I	78	4.909	1.109	3.966	1.375	4.963	1.091	5.909	.0041
30I	78	4.955	0.950	4.586	1.053	5.185	0.786	2.904	.0610
31I	76	5.000	0.926	4.778	1.050	5.074	0.958	.658	.5210
32I	78	4.864	1.246	4.724	1.066	5.074	0.917	.750	.4757
33I	78	5.318	0.946	5.276	0.841	5.296	0.724	.016	.9840
34I	78	4.682	0.946	4.586	0.867	4.778	1.251	.239	.7879
35I	77	5.000	1.265	5.035	1.085	5.407	1.047	1.048	.3561
36I	78	5.182	0.795	5.103	0.900	5.370	0.742	.773	.4652
37I	75	4.191	1.436	4.036	1.262	4.654	0.936	1.853	.1642
38I	77	5.591	0.734	5.552	0.572	5.692	0.549	.373	.6899
39I	75	5.286	0.956	5.321	0.945	5.385	0.571	.085	.9182
40I	78	4.909	1.269	4.379	1.425	4.407	1.394	1.121	.3313

Table E12.--Continued.

Item	Cases	School Classification: Low Performing Mean	Low Performing S.D.	In-Between Mean	In-Between S.D.	High Performing Mean	High Performing S.D.	F	Sig. of F
41I	78	4.864	1.207	5.276	0.960	5.482	0.700	2.561	.0839
42I	78	4.727	1.352	4.448	0.948	4.852	1.064	.964	.3859
43I	77	3.636	1.814	3.310	1.312	4.115	1.275	2.092	.1307
44I	77	5.455	1.224	5.393	0.832	5.593	0.694	.336	.7156
45I	77	5.591	0.734	5.500	0.577	5.593	0.636	.180	.8353
46I	76	4.864	1.125	4.852	1.099	5.185	1.145	.743	.4791
47I	77	4.136	1.320	4.286	1.182	4.926	1.174	3.027	.0545
48I	77	5.091	1.019	5.036	0.922	5.333	0.785	.820	.4443
49I	76	5.136	0.560	4.667	0.961	5.000	1.038	1.829	.1679
50I	78	5.273	0.935	5.276	1.032	5.444	0.698	.314	.7312
51I	78	5.087	1.084	5.072	1.275	5.222	0.847	.156	.8556
52I	78	4.646	1.177	4.655	1.446	4.815	1.039	.162	.8504
53I	78	5.546	0.739	5.379	0.903	5.778	0.506	2.043	.1368
54I	76	4.727	1.454	4.741	1.023	5.000	1.000	.459	.6335
55I	77	5.364	0.902	5.250	0.887	5.222	1.023	.151	.8602
56I	78	5.727	0.631	5.690	0.541	5.889	0.320	1.187	.3108
57I	77	4.818	1.296	4.621	1.237	4.769	1.142	.186	.8305
58I	78	5.136	1.082	4.897	1.145	4.963	1.126	.296	.7447
59I	77	4.455	1.405	4.571	1.168	4.556	1.188	.061	.9406
60I	77	5.455	1.057	5.655	0.614	5.692	0.679	.623	.5391
61I	77	5.571	0.746	5.379	0.942	5.630	0.629	.763	.4699
62I	77	3.762	1.480	3.172	1.466	3.556	1.368	1.104	.3369
63I	77	5.136	0.774	5.000	0.861	5.185	0.786	.383	.6831
64I	78	4.773	1.110	4.517	1.243	4.704	1.235	.317	.7293
65I	77	4.000	1.746	3.821	1.249	4.111	1.188	.304	.7386
66I	78	4.773	1.343	4.690	1.199	4.704	1.171	.031	.9693
67I	77	4.818	1.220	4.690	1.257	4.346	1.384	.884	.4174
68I	77	4.500	1.336	4.862	1.026	4.731	1.251	.576	.5647
69I	78	4.864	0.990	4.586	1.323	4.667	1.330	.321	.7264
70I	78	5.546	0.596	5.207	0.902	5.259	0.944	1.116	.3330
71I	78	5.318	0.646	5.069	1.067	5.370	0.742	.984	.3788
72I	77	5.364	0.790	4.897	1.145	5.231	0.992	1.508	.2280
73I	78	5.546	0.739	4.828	1.605	5.407	1.010	2.634	.0784
74I	77	5.000	1.024	5.310	0.930	5.000	1.131	.824	.4428
75I	77	5.318	1.249	5.207	1.082	5.423	0.578	.322	.7261
76I	77	5.273	0.827	4.966	0.944	4.846	0.967	1.341	.2678
77I	74	4.333	1.238	4.123	1.146	4.440	1.228	.418	.6599
78I	76	4.546	1.011	4.310	0.968	4.280	1.370	.387	.6805
79I	74	3.714	1.765	4.286	1.357	4.080	1.352	.898	.4118
80I	76	5.000	1.234	5.414	0.780	5.320	0.900	1.206	.3053

Table E13.--Factor loadings--ability efficacy: Principal Efficacy Questionnaire.

Item	Loading	Item	Loading	Item	Loading	Item	Loading
1	-.01271	21	.11483	41	.37678	61	.07007
2	.21383	22*	.62213	42	.00783	62	.28864
3	.11706	23	-.05491	43	.01033	63	.28295
4	.28055	24	.49407	44	.49970	664	.23013
5*	.72050	25	.16652	45*	.67140	65*	.82983
6	.27391	26*	.66458	46*	.71712	66*	.71578
7	.29313	27*	.66796	47	.10109	67*	.61317
8*	.78818	28*	.65938	48	.66360	68*	.78438
9*	.61525	29	.17764	49*	.60181	69	.09501
10	.38559	30	.22154	50	.45552	70*	.50691
11*	.61164	31	.25740	51	.20440	71	.08234
12	.18649	32	.40902	52	.06274	72	.49329
13*	.64579	33	.30299	53	-.01678	73	.12501
14	.33352	34*	.47909	54	.03037	74	.27068
15	.23566	35*	.71222	55	.33123	75	.09119
16	.12010	36	.08921	56*	.60501	76	-.04403
17	.20017	37	.40245	57*	.52896	77	.36269
18	.49158	38	.29926	58	.27291	78	.26405
19	.31345	39	.26242	59	.12452	79	.18957
20	-.18554	40*	.59479	60	.14512	80	.04079

*Item was used for further analysis.

Table E14.--Factor loadings--expectancy efficacy: Principal Efficacy Questionnaire.

Item	Loading	Item	Loading	Item	Loading	Item	Loading
1	.04224	21	.11196	41	-.01111	61	.70285
2	.25176	22	.38030	42	.07048	62	-.14017
3	.04962	23*	.70031	43	.22766	63*	.54906
4*	.52651	24*	.60090	44	.18419	64*	.58398
5*	.51158	25	.08525	45	.29481	65*	.55580
6	.10276	26*	.61706	46	.42475	66*	.71234
7	.28655	27*	.55258	47	.41269	67	.31194
8	.23241	28*	.50902	48*	.65427	68	.49181
9	.17530	29	.16419	49*	.54213	69	.36591
10	.25390	30	.11366	50	.12456	70*	.57205
11	.21485	31	.18421	51	.23102	71*	.78346
12*	.62354	32*	.67233	52	.14315	72*	.68319
13*	.61844	33*	.56037	53	.00372	73	.07243
14*	.62415	34*	.66466	54	.33984	74	.35524
15*	.76832	35*	.65487	55	.31503	75	.21543
16*	.57652	36	.23930	56	.11735	76	.12431
17*	.51529	37	.38051	57*	.62421	77	.29490
18*	.52574	38	.05543	58*	.85696	78	.30667
19*	.52590	39	.31756	59*	.82117	79	.08911
20*	.70803	40	.53755	60	.21255	80	.04335

*Item was used for further analysis.

Table E15.--Factor loadings--importance efficacy: Principal Efficacy Questionnaire.

Item	Loading	Item	Loading	Item	Loading	Item	Loading
1	-.06789	21	.05021	41	.18365	61	.16729
2	.07905	22	.04369	42	.05695	62	.04800
3	.23293	23	-.19610	43	.08797	63	.26306
4	-.02621	24	.28402	44	.07533	64	.23549
5	.13837	25	.48912	45	.10125	65*	.66017
6	.33521	26	.15432	46*	.56915	66*	.69224
7	.32994	27	.03748	47	.18472	67	.23664
8	.35832	28	.24475	48*	.67609	68*	.74753
9	.25204	29	.14504	49*	.62634	69	.20339
10*	.54572	30	-.01754	50	.38442	70	.25539
11	.15801	31	.04406	51	.44998	71	.22104
12*	.77957	32	.27714	52	.40828	72	.22954
13*	.57577	33	.44803	53	.24255	73	.00394
14	.31048	34	.15063	54	-.01935	74*	.73074
15*	.65404	35	.28547	55*	.75101	75	.17496
16	.47950	36*	.66808	56	.18438	76	.27643
17*	.68284	37	.48429	57*	.67285	77*	.69102
18*	.57301	38*	.68696	58*	.66017	78*	.67414
19*	.51756	39*	.77319	59	.17830	79	.28348
20	.00810	40	.42907	60	.20760	80	.21593

*Item was used for further analysis.

Table E16.--Factor loadings: Modified Principal Efficacy Questionnaire with Gibson statistics.

Item	Personal Efficacy		Import. Efficacy	Gibson	Item	Admin. Efficacy		Import. Efficacy	Gibson
1	.15907		.07830	.49	2*	.61725	*	.55397	.54
3	.35816		.13021	NA	4	.37975		-.01022	.54
7	.02610		.07271	NA	5	-.03051		.03652	NA
8	.09383		-.02548	NA	6	-.06454		-.19531	.60
12	.48587		-.01815	.46	9	.09513		.48076	NA
14	-.02052	*	.52395	.46	10	.10753		.11046	NA
15	.26308		.39258	.53	11	.01816		.23195	NA
18	-.03304	*	.64304	NA	13	.09041		.22545	NA
19	.28265	*	.66934	.55	16*	.76807		.02987	.65
20*	.86996		.35341	NA	17	.46923		.29287	NA
21	.48600		.42704	.61	22	.10726	*	.78954	NA
24*	.75090	*	.71627	.51	23*	.60638	*	.87626	.52
25	.46293	*	.60098	.49	26*	.62266		-.01771	NA
28*	.61882	*	.84098	NA	27	-.08771		.29287	-.52
29*	.63395	*	.67396	.48	30	.23627	*	.61278	.45

*Item was used for further analysis.

Table E17.--Personal efficacy by frequency, mean, standard deviation: Modified Principal Efficacy Questionnaire.

Item	Frequency 1	2	3	4	5	6	Missing Cases	Mean	S.D.
PE 1	0	7	8	33	22	10	0	4.250	1.085
PE 3	2	5	8	26	31	7	1	4.266	1.129
PE 7	6	5	4	11	38	16	0	4.475	1.432
PE 8	6	4	5	15	20	22	0	4.512	1.467
PE 12	3	5	6	25	29	7	5	4.240	1.195
PE 14	7	14	14	35	6	2	2	3.321	1.201
PE 15	3	7	7	22	27	13	1	4.291	1.312
PE 18	20	18	22	13	12	6	0	2.962	1.642
PE 19	2	8	7	34	19	10	0	4.125	1.205
PE 20	0	3	5	15	26	31	0	4.962	1.084
PE 21	4	10	10	26	25	5	0	3.912	1.285
PE 24	3	7	10	16	30	14	0	4.313	1.346
PE 25	0	6	5	16	29	23	1	4.734	1.174
PE 28	1	5	7	31	25	9	2	4.295	1.082
PE 29	1	1	8	16	31	22	1	4.785	1.082

Table E18.--Administrator efficacy by frequency, mean, standard deviation: Modified Principal Efficacy Questionnaire.

Item	Frequency 1	2	3	4	5	6	Missing Cases	Mean	S.D.
AE 2	19	22	18	13	5	1	2	2.564	1.275
AE 4	24	27	17	8	2	2	0	2.287	1.214
AE 5	10	12	8	17	20	12	1	3.772	1.640
AE 6	15	16	16	20	12	1	0	3.012	1.392
AE 9	20	20	20	11	5	3	1	2.620	1.371
AE 10	34	18	7	13	2	2	4	2.171	1.370
AE 11	18	16	10	22	12	2	0	3.000	1.493
AE 13	31	33	8	4	2	1	1	1.937	1.066
AE 16	21	28	13	9	6	1	2	2.410	1.284
AE 17	35	28	8	6	2	1	0	1.938	1.129
AE 22	4	3	8	26	25	13	1	4.316	1.266
AE 23	5	12	18	20	19	6	0	3.675	1.357
AE 26	10	20	14	17	11	8	0	3.287	1.536
AE 27	2	4	5	17	31	21	0	4.675	1.220
AE 30	12	18	15	20	11	4	0	3.150	1.422

Table E19.--Personal efficacy importance by frequency, mean, standard deviation: Modified Principal Efficacy Questionnaire.

Item	Frequency 1	2	3	4	5	6	Missing Cases	Mean	S.D.
PEIMP 1	1	0	5	11	29	33	1	5.101	1.008
PEIMP 3	1	0	3	12	30	33	1	5.139	0.957
PEIMP 7	1	3	4	21	26	25	0	4.787	1.133
PEIMP 8	11	8	10	18	22	11	0	3.813	1.608
PEIMP 12	7	18	10	22	16	5	2	3.474	1.439
PEIMP 14	0	1	1	9	27	42	0	5.350	0.828
PEIMP 15	0	1	4	18	24	33	0	5.050	0.980
PEIMP 18	1	5	10	14	25	25	0	4.650	1.284
PEIMP 19	0	0	1	10	23	46	0	5.425	0.759
PEIMP 20	0	3	2	12	33	30	0	5.063	0.985
PEIMP 21	0	1	6	14	29	30	0	5.012	0.987
PEIMP 24	0	2	5	18	22	32	1	4.975	1.062
PEIMP 25	2	6	4	18	24	26	0	4.675	1.320
PEIMP 28	3	3	5	11	30	23	5	4.747	1.295
PEIMP 29	1	1	5	13	26	34	0	5.050	1.078

Table E20.--Administrator efficacy importance by frequency, mean, standard deviation: Modified Principal Efficacy Questionnaire.

Item	Frequency 1	2	3	4	5	6	Missing Cases	Mean	S.D.
AEIMP 2	19	22	18	13	5	1	2	2.564	1.275
AEIMP 4	24	27	17	8	8	2	0	2.287	1.214
AEIMP 5	10	12	8	17	20	12	1	3.772	1.640
AEIMP 6	15	16	16	20	12	1	0	3.012	1.392
AEIMP 9	20	20	20	11	5	3	1	2.620	1.371
AEIMP 10	34	18	7	13	2	2	4	2.171	1.370
AEIMP 11	18	16	10	22	12	2	0	3.000	1.493
AEIMP 13	31	33	8	4	2	1	1	1.937	1.066
AEIMP 16	21	28	13	9	6	1	2	2.410	1.284
AEIMP 17	35	28	8	6	2	1	0	1.938	1.129
AEIMP 22	4	3	8	26	25	13	1	4.316	1.266
AEIMP 23	5	12	18	20	19	6	0	3.675	1.357
AEIMP 26	10	20	14	17	11	8	0	3.287	1.536
AEIMP 27	2	4	5	17	31	21	0	4.675	1.220
AEIMP 30	12	18	15	20	11	4	0	3.150	1.442

Table E21.--Personal efficacy items by performance mean, standard deviation, significance value.

Item	Cases	School Classification: Low Performing Mean	Low Performing S.D.	In-Between Mean	In-Between S.D.	High Performing Mean	High Performing S.D.	F	Sig. of F
PE 1	80	4.318	1.171	4.100	0.995	4.357	1.129	.460	.6328
PE 3	79	4.318	1.249	4.138	1.157	4.357	1.026	.296	.7447
PE 7	80	4.591	0.959	4.467	1.479	4.393	1.707	.116	.8906
PE 8	80	4.500	1.439	4.533	1.456	4.500	1.552	.005	.9953
PE 12	75	4.550	0.826	4.133	1.432	4.120	1.130	.916	.4046
PE 14	78	3.227	1.307	3.207	1.114	3.519	1.221	.557	.5753
PE 15	79	4.409	0.854	4.241	1.596	4.250	1.323	.121	.8865
PE 18	80	2.409	1.501	3.200	1.710	3.143	1.627	1.767	.1777
PE 19	80	4.136	1.390	3.967	1.217	4.286	1.049	.502	.6070
PE 20	80	4.818	1.097	4.967	1.159	5.071	1.016	.331	.7195
PE 21	80	3.682	1.555	3.933	1.202	4.071	1.152	.567	.5698
PE 24	80	4.091	1.509	4.267	1.461	4.536	1.071	.695	.5023
PE 25	79	4.773	1.343	4.793	1.114	4.643	1.129	.130	.8781
PE 28	78	4.500	0.964	4.393	0.832	4.036	1.347	1.323	.2724
PE 29	79	4.591	1.221	4.833	0.986	4.889	1.086	.502	.6075

Table E22.--Personal efficacy importance items by performance mean, standard deviation, significance value.

Item	Cases	School Classification: Low Performing Mean	Low Performing S.D.	In-Between Mean	In-Between S.D.	High Performing Mean	High Performing S.D.	F	Sig. of F
PEIMP 1	79	5.381	0.740	5.100	0.960	4.893	1.197	1.423	.2473
PEIMP 3	79	5.048	0.974	5.100	1.155	5.250	0.701	.303	.7392
PEIMP 7	80	4.636	0.954	4.600	1.404	5.107	0.875	1.754	.1799
PEIMP 8	80	3.773	1.343	3.733	1.552	3.929	1.884	.114	.8929
PEIMP 12	78	3.273	1.518	3.517	1.503	3.593	1.338	.314	.7313
PEIMP 14	80	5.409	0.734	5.533	0.776	5.107	0.917	2.047	.1361
PEIMP 15	80	4.955	1.046	5.200	0.997	4.964	0.922	.557	.5752
PEIMP 18	80	4.864	1.167	4.733	1.173	4.393	1.474	.928	.3998
PEIMP 19	80	5.455	0.739	5.367	0.890	5.464	0.637	.140	.8700
PEIMP 20	80	4.864	1.207	5.000	0.831	5.286	0.937	1.234	.2967
PEIMP 21	80	4.864	1.082	4.900	0.885	5.250	1.005	1.264	.2884
PEIMP 24	79	5.046	0.899	4.966	1.017	4.929	1.245	.075	.9282
PEIMP 25	80	4.818	1.259	4.733	1.388	4.500	1.319	.399	.6724
PEIMP 28	75	4.762	1.044	4.808	1.497	4.679	1.307	.067	.9350
PEIMP 29	80	5.182	0.853	4.933	1.413	5.071	0.813	.340	.7129

Table E23.--Administrator efficacy items by performance mean, standard deviation, significance value.

Item	Cases	School Classification: Low Performing Mean	Low Performing S.D.	In-Between Mean	In-Between S.D.	High Performing Mean	High Performing S.D.	F	Sig. of F
AE 2	78	2.273	1.386	2.500	1.009	2.885	1.423	1.451	.2409
AE 4	80	2.409	1.563	2.100	1.185	2.393	0.917	.568	.5693
AE 5	79	4.318	1.323	3.800	1.750	3.296	1.660	2.447	.0934
AE 6	80	2.773	1.412	3.400	1.429	2.786	1.287	1.904	.1559
AE 9	79	2.546	1.405	2.517	1.379	2.786	1.371	.313	.7323
AE 10	76	2.381	1.359	2.321	1.442	1.852	1.292	1.153	.3215
AE 11	80	2.818	1.593	2.967	1.426	3.179	1.517	.365	.6953
AE 13	79	2.227	1.412	1.933	1.048	1.704	0.669	1.479	.2342
AE 16	78	2.200	1.240	2.400	1.248	2.571	1.372	.483	.6186
AE 17	80	1.818	1.053	2.100	1.373	1.857	0.891	.498	.6096
AE 22	79	4.667	1.197	4.100	1.494	4.286	1.013	1.258	.2901
AE 23	80	3.818	1.259	3.533	1.332	3.714	1.487	.292	.7474
AE 26	80	3.546	1.921	3.333	1.493	3.036	1.232	.694	.5025
AE 27	80	4.909	1.019	4.733	1.143	4.429	1.425	1.011	.3686
AE 30	80	3.500	1.596	3.000	1.339	3.036	1.427	.896	.4123

Table E24.--Administrator efficacy importance items by performance mean, standard deviation, significance value.

Item	Cases	School Classification: Low Performing Mean	Low Performing S.D.	In-Between Mean	In-Between S.D.	High Performing Mean	High Performing S.D.	F	Sig. of F
AEIMP 2	80	5.091	1.019	5.067	0.980	5.071	1.120	.001	.9963
AEIMP 4	80	4.364	1.177	3.967	1.402	4.536	1.374	1.384	.2566
AEIMP 5	79	5.046	0.785	5.133	1.042	5.482	0.580	1.956	.1484
AEIMP 6	80	4.136	1.552	4.167	1.464	3.429	1.200	2.434	.0944
AEIMP 9	80	5.182	0.853	5.267	0.868	5.464	0.637	.867	.4241
AEIMP 10	77	3.895	1.487	3.700	1.466	3.857	1.604	.121	.8864
AEIMP 11	77	4.182	1.593	3.786	1.618	4.333	1.641	.835	.4380
AEIMP 13	80	4.546	1.299	4.400	1.248	4.286	1.117	.280	.7567
AEIMP 16	78	5.571	0.811	5.367	0.809	5.370	1.115	.368	.6931
AEIMP 17	80	4.500	1.406	4.433	1.305	4.329	1.219	.122	.8857
AEIMP 22	80	4.636	1.136	4.900	1.029	5.000	0.943	.799	.4536
AEIMP 23	80	5.182	0.733	5.267	0.907	5.429	0.690	.645	.5277
AEIMP 26	80	3.000	1.480	3.267	1.982	2.964	1.575	.264	.7685
AEIMP 27	79	4.727	1.162	4.733	1.230	4.926	1.207	.234	.7921
AEIMP 30	80	5.182	1.053	5.467	0.730	5.286	0.600	.871	.4226

Table E25.--Regression tables: Modified Principal Efficacy Questionnaire, low-performing-school sample.

Variables entered on step
1 Sex
2 Age
3 Administrator efficacy
4 Level of education
5 Approx. number of students
6 Personal efficacy
7 Personal efficacy (importance)
8 Years in administration
9 Administrator efficacy (importance)
10 Employment in public school system

Multiple R	0.40174	R Square Change	0.16140
R Square	0.16140	F Change	1.32797
Adjusted R Square	0.03986	Signif. F Change	0.2334
Standard Error	0.44029		

ANALYSIS OF VARIANCE

	df	SS	Mean Square	F	Sig. of F
Regression	10	2.57429	0.25743	1.32797	0.2334
Residual	69	13.37571	0.19385		

VARIABLES IN EQUATION

Var.	B	SE	Beta	Correl.	Partial Correl.	T	Sig. of T
1	-.090645	0.125786	-.091879	-.103604	-.079444	-.721	0.4736
2	-.006403	0.105206	-.011428	0.056209	-.006710	-.061	0.9516
3	-.035331	0.057096	-.072352	-.012501	-.068219	-.619	0.5381
4	0.078571	0.073714	-.120627	-.080640	-.117507	-1.066	0.2902
5	0.185305	0.101427	0.215110	0.117741	0.229708	1.827	0.0720
6	0.029127	0.065145	0.058341	-.066710	0.049290	0.447	0.6562
7	0.114123	0.091054	0.198030	0.069475	0.138174	1.253	0.2143
8	-.084919	0.055991	-.229393	-.131714	-.167201	-1.517	0.1339
9	-.194458	0.108481	-.307871	-.102713	-.197616	-1.793	0.0774
10	0.155922	0.103772	0.282040	0.073654	0.165646	1.503	0.1375
CONST	0.243931	0.676943				0.360	0.7197

SUMMARY TABLE: LOW-PERFORMING SCHOOL SAMPLE

STEP	MULTR	RSQ	ADJRSQ	F(EQN)	SIGF	RSQCH	FCH	SIGCH		BETAIN	CORREL
1									IN SEX	-.1036	-.1036
2									IN AGE	0.0548	0.0562
3									IN AE	-.0048	-.0125
4									IN ED.	-.0879	-.0806
5									IN STU.	0.2634	0.2297
6									IN PE	-.0230	-.0667
7									IN PEIMP	0.0482	0.0695
8									IN YEARS	-.1716	-.1317
9									IN AEIMP	-.2482	-.1027
10	.4017	.1614	.0399	1.328	.233	.1614	1.328	.233	IN EMP	0.2820	0.0737

Table E26.--Regression tables: Modified Principal Efficacy Questionnaire, in-between school sample.

Variables entered on step
1 Sex
2 Age
3 Administrator efficacy
4 Level of education
5 Approx. number of students
6 Personal efficacy
7 Personal efficacy (importance)
8 Years in administration
9 Administrator efficacy (importance)
10 Employment in public school system

Multiple R	0.36196	R Square Change	0.13102
R Square	0.13102	F Change	1.04030
Adjusted R Square	0.00508	Signif. F Change	0.4199
Standard Error	0.48594		

ANALYSIS OF VARIANCE

	df	SS	Mean Square	F	Sig. of F
Regression	10	2.45654	0.24565	1.04030	0.4199
Residual	69	16.29346	0.23614		

VARIABLES IN EQUATION

Var.	B	SE	Beta	Correl.	Partial Correl.	T	Sig. of T
1	0.270517	0.138830	0.252900	0.149752	0.218672	1.949	0.0054
2	0.222072	0.116115	0.365531	0.000000	0.214629	1.913	0.0600
3	-.049453	0.063017	-.093403	-.045886	-.088067	-.785	0.4353
4	-.088823	0.081357	-.125773	-.142554	-.122520	-1.092	0.2787
5	0.815304	0.111944	0.367304	0.007567	0.000784	0.007	0.9944
6	-.003059	0.071900	-.005652	0.291700	-.004775	-.043	0.9662
7	0.037270	0.100495	0.059648	0.037291	0.141619	0.371	0.7119
8	0.010310	0.061797	0.025688	0.013379	0.018723	0.167	0.8680
9	0.062315	0.119730	0.090995	0.037665	0.058408	0.520	0.6044
10	-.278961	0.114532	-.465400	-.139860	-.273337	-2.436	0.0175
CONST	0.474280	0.747137				0.635	0.5277

SUMMARY TABLE: IN-BETWEEN SCHOOL SAMPLE

STEP	MULTR	RSQ	ADJRSQ	F(EQN)	SIGF	RSQCH	FCH	SIGCH		BETAIN	CORREL
1									IN SEX	0.1498	0.1498
2									IN AGE	0.0021	0.0000
3									IN AE	-.0571	-.0459
4									IN ED.	-.1440	-.1426
5									IN STU.	0.0137	0.0076
6									IN PE	0.0544	0.0292
7									IN PEIMP	0.0842	0.0373
8									IN YEARS	-.0503	0.0134
9									IN AEIMP	-.0075	0.0377
10	.3620	.1310	.0051	1.040	.420	.1310	1.040	.420	IN EMP	-.4654	-.1399

Table E27.--Regression tables: Modified Principal Efficacy Questionnaire, high-performing-school sample.

Variables entered on step
1 Sex
2 Age
3 Administrator efficacy
4 Level of education
5 Approx. number of students
6 Personal efficacy
7 Personal efficacy (importance)
8 Years in administration
9 Administrator efficacy (importance)
10 Employment in public school system

Multiple R	0.45474	R Square Change	0.20679
R Square	0.20679	F Change	1.79882
Adjusted R Square	0.09183	Signif. F Change	0.0770
Standard Error	0.45741		

ANALYSIS OF VARIANCE

	df	SS	Mean Square	F	Sig. of F
Regression	10	3.76355	0.37636	1.79882	0.0770
Residual	69	14.43645	0.20922		

VARIABLES IN EQUATION

Var.	B	SE	Beta	Correl.	Partial Correl.	T	Sig. of T
1	0.179872	0.130679	-.170681	-.055009	-.147580	-1.376	0.1731
2	-.215669	0.109298	-.360315	-.052620	-.211566	-1.973	0.0525
3	0.084784	0.059317	0.162536	0.058277	0.153252	1.429	0.1574
4	0.167393	0.076581	0.240584	0.220183	0.234362	2.186	0.0322
5	-.186086	0.105372	-.202225	-.222721	-.189347	-1.766	0.0818
6	-.026067	0.067679	-.048879	0.032843	-.041296	-.385	0.7013
7	0.151392	0.094595	-.245928	-.102890	-.171595	-1.600	0.1141
8	0.074609	0.058169	0.188673	0.109724	0.137521	1.283	0.2039
9	0.132142	0.112701	0.195853	0.057924	0.125714	1.173	0.2450
10	0.123039	0.107808	0.208349	0.073007	0.122366	1.141	0.2577
CONST	0.281788	0.703272				0.401	0.6899

SUMMARY TABLE: HIGH-PERFORMING SCHOOL SAMPLE

STEP	MULTR	RSQ	ADJRSQ	F(EQN)	SIGF	RSQCH	FCH	SIGCH		BETAIN	CORR
1									IN SEX	-.0550	-.05
2									IN AGE	-.0534	-.05
3									IN AE	0.0624	0.05
4									IN ED.	0.2285	0.22
5									IN STU.	-.2604	-.22
6									IN PE	-.0337	0.03
7									IN PEIMP	-.1306	-.10
8									IN YEARS	0.2117	0.10
9									IN AEIMP	0.2400	0.05
10	.4547	.2068	.0918	1.799	.077	.2068	1.799	.077	IN EMP	0.2083	0.07

Table E28.--Hierarchy of ability/goals by performance: Principal Efficacy Questionnaire.

Low Performing			In-Between			High Performing		
No.	Item	Mean	No.	Item	Mean	No.	Item	Mean
22	13	5.3636	28	13	5.1786	27	13	5.2963
22	9	5.2727	29	11	5.0690	27	11	5.0000
23	11	5.2609	29	14	5.0000	27	9	4.8889
22	10	5.0909	29	1	5.0000	27	3	4.8148
22	1	5.0000	29	15	4.7931	27	14	4.7778
22	14	5.0000	29	4	4.7586	27	4	4.7407
22	7	4.9545	29	19	4.7241	26	1	4.5769
23	4	4.9130	29	3	4.7241	26	8	4.5769
22	8	4.9091	29	9	4.6562	27	7	4.5666
20	19	4.7500	29	5	4.6552	27	5	4.5666
22	3	4.7273	28	8	4.6429	27	12	4.5666
23	6	4.6937	27	10	4.6296	27	10	4.5185
22	2	4.6818	29	18	4.6207	26	17	4.5000
21	15	4.6667	29	7	4.5862	27	15	4.4444
23	5	4.6522	29	12	4.4824	27	18	4.2963
23	12	4.5652	29	2	4.4483	26	16	4.1923
22	16	5.5455	29	17	4.3103	26	19	4.1923
21	17	4.5238	29	16	4.2414	26	2	4.1528
21	18	4.3810	29	6	4.2759	27	6	4.1111
21	20	4.0000	29	20	3.6552	27	20	4.0370

Table E29.--Hierarchy of ability/factors by performance: Principal Efficacy Questionnaire.

Low Performing			In-Between			High Performing		
No.	Item	Mean	No.	Item	Mean	No.	Item	Mean
23	25	5.6522	29	38	5.4138	26	38	5.2692
23	38	5.5217	28	25	5.3929	27	25	5.1111
22	23	5.2727	29	23	5.1724	27	35	4.9279
22	39	5.0000	29	33	5.1034	27	33	4.8148
23	33	5.0000	29	35	4.9310	27	36	4.7778
23	36	4.9130	29	22	4.8276	26	39	4.7692
22	35	4.8182	28	24	4.8214	27	22	4.7037
22	24	4.7727	29	28	4.7931	27	26	4.6296
22	26	4.7273	29	36	4.6897	27	23	4.6296
23	30	4.6087	29	21	4.6552	27	27	4.5185
21	22	4.5714	28	39	4.6429	27	28	4.5000
21	21	4.5238	29	26	4.4483	27	24	4.4815
23	34	4.5217	29	34	4.3793	26	37	4.4615
23	29	4.3913	28	31	4.2143	27	30	4.4074
23	32	4.3913	29	32	4.1724	27	21	4.4074
22	28	4.3478	29	30	4.1724	27	40	4.3704
23	31	4.2174	29	29	4.1724	27	34	4.2963
22	27	4.7273	29	27	4.1379	27	32	4.2963
22	37	4.1364	29	40	4.1379	26	29	4.2593
23	40	4.1304	28	37	3.9643	27	31	3.9630

Table E30.--Hierarchy of ability/strategies by performance: Principal Efficacy Questionnaire.

Low Performing			In-Between			High Performing		
No.	Item	Mean	No.	Item	Mean	No.	Item	Mean
23	56	5.7826	29	56	5.5512	26	60	5.6538
23	60	5.6087	29	60	5.4138	27	56	5.6296
23	53	5.5217	29	53	5.3103	27	53	5.5556
23	45	5.3478	29	41	5.2759	27	45	5.4074
23	50	5.2609	29	50	5.2414	27	50	5.2222
23	55	5.2174	28	44	5.2143	27	44	5.1852
23	44	5.1739	28	45	5.1071	27	55	5.0370
22	51	5.0000	28	51	4.9643	27	41	5.0000
23	41	5.0000	29	58	4.7586	27	46	4.9259
23	49	4.9130	27	46	4.8148	27	48	4.6667
23	46	4.8261	27	54	4.7407	26	57	4.6154
23	57	4.7391	28	55	4.6786	27	49	4.5926
22	54	4.6818	29	57	4.6207	27	58	4.5556
23	48	4.6087	27	49	4.5556	27	42	4.5556
22	58	4.4545	28	59	4.5000	27	47	4.5185
23	42	4.4348	28	47	4.3929	27	51	4.4444
22	52	4.3636	29	42	4.3793	26	54	4.4231
23	47	4.3478	29	52	4.3793	27	59	4.1111
22	59	3.8636	28	48	4.3571	27	52	4.0000
22	43	3.4545	29	43	3.5862	26	43	3.8846

Table E31.--Hierarchy of ability/decision making by performance: Principal Efficacy Questionnaire.

Low Performing			In-Between			High Performing		
No.	Item	Mean	No.	Item	Mean	No.	Item	Mean
22	61	5.6364	29	61	5.4138	27	61	5.5556
23	73	5.4783	29	73	5.3448	25	80	5.1200
23	75	5.0870	29	80	5.1724	26	75	5.1154
23	74	5.0870	29	74	4.9655	27	73	5.1111
23	69	5.0435	29	70	4.9655	27	71	4.9630
23	72	5.0000	29	71	4.8621	27	63	4.8148
23	70	4.9565	28	63	4.8214	26	76	4.8077
22	80	4.9545	29	75	4.7931	26	74	4.8077
23	67	4.9130	29	69	4.5517	27	70	4.6667
22	76	4.9091	29	64	4.5517	27	69	4.6667
23	71	4.8696	29	72	4.4828	26	72	4.6154
23	63	4.7391	29	66	4.4138	27	64	4.5556
23	66	4.5652	29	76	4.3448	25	78	4.4800
22	64	4.5455	29	78	4.2759	27	66	4.4074
22	62	4.5455	29	67	4.2414	27	62	4.1852
23	68	4.3043	28	62	4.1786	26	67	4.0769
22	78	4.2727	29	68	4.1379	27	68	4.0741
21	77	4.0000	28	79	4.0714	25	77	4.0400
23	65	3.8696	28	77	4.0357	25	79	3.9600
20	79	3.7500	28	65	3.4643	27	65	3.4815

Table E32.--Hierarchy of expectancy/goals by performance: Principal Efficacy Questionnaire.

Low Performing			In-Between			High Performing		
No.	Item	Mean	No.	Item	Mean	No.	Item	Mean
23	9	5.0870	29	11	4.9655	27	13	5.0741
22	13	5.0455	29	4	4.7241	27	4	5.0000
22	11	5.0455	29	1	4.6552	27	5	4.9259
23	3	4.9130	28	13	4.6429	27	3	4.8889
23	10	4.8696	29	19	4.6207	27	14	4.8519
22	4	4.8636	29	14	4.6207	27	9	4.7407
23	8	4.7826	29	9	4.6207	27	15	4.6296
22	12	4.7273	29	5	4.5862	27	12	4.6296
22	1	4.7273	28	10	4.5714	26	8	4.5769
20	18	4.6500	29	15	4.4828	26	1	4.5769
22	5	4.4545	29	20	4.4138	27	20	4.5556
20	20	4.3000	29	8	4.4138	27	11	4.8148
21	19	4.5714	29	18	4.3793	27	7	4.4815
23	14	4.5217	29	17	4.3793	27	10	4.4444
23	7	4.5217	29	2	4.3448	26	19	4.3077
22	6	4.5000	29	12	4.3103	23	2	4.3077
23	2	4.3043	29	16	4.2759	27	18	4.2963
23	16	4.2609	29	7	4.2414	26	17	4.2308
22	17	4.2273	29	3	4.2414	26	16	4.1923
22	15	4.2273	29	6	4.0690	27	6	4.0000

Table E33.--Hierarchy of expectancy/factors by performance: Principal Efficacy Questionnaire.

Low Performing			In-Between			High Performing		
No.	Item	Mean	No.	Item	Mean	No.	Item	Mean
22	25	5.5455	28	25	5.5357	27	25	5.3333
22	38	5.3636	29	38	5.5172	26	38	5.2692
22	33	5.1364	29	35	5.1034	26	39	5.0000
21	39	5.0952	29	33	4.9655	27	36	4.9259
20	22	5.0000	29	22	4.8276	27	26	4.8889
20	21	4.9500	28	24	4.7857	27	22	4.8889
21	35	4.8571	28	39	4.7143	27	35	4.8519
22	36	4.8182	29	36	4.6897	27	33	4.8519
22	23	4.7727	29	21	4.6207	27	27	4.6667
22	40	4.6364	29	28	4.5862	27	23	4.6667
22	28	4.6364	29	23	4.5862	27	24	4.6296
22	30	4.5909	29	26	2.5517	26	30	4.5769
21	24	4.5714	29	34	4.4138	27	29	4.5185
21	37	4.4286	29	32	4.3103	27	40	4.4815
22	26	4.4091	29	27	4.1034	26	28	4.4815
22	31	4.3182	29	30	4.0690	27	21	4.4615
22	29	4.3182	28	31	4.0357	26	37	4.4231
22	34	4.2727	29	29	3.8966	27	32	4.3704
22	32	4.2273	29	40	3.9655	27	31	4.2222
23	27	4.0435	28	37	3.7858	27	34	4.1852

Table E34.--Hierarchy of expectancy/strategies by performance: Principal Efficacy Questionnaire.

Low Performing			In-Between			High Performing		
No.	Item	Mean	No.	Item	Mean	No.	Item	Mean
22	53	5.5909	29	60	5.5862	27	56	5.5556
22	56	5.4545	29	56	5.5517	27	60	5.4444
22	60	5.4090	29	53	5.3448	27	53	5.4444
22	45	5.4090	29	50	5.2759	27	45	5.1852
22	44	5.3636	28	45	5.2143	27	44	5.0741
22	50	5.3182	28	44	5.1786	27	50	5.0370
22	55	5.1818	29	41	5.1034	27	55	5.0000
22	51	4.9545	28	51	4.8571	27	41	5.0000
22	57	4.8636	28	55	4.6429	27	51	4.8519
22	49	4.8182	29	52	4.5862	27	48	4.8519
22	46	4.7273	27	46	4.5556	27	46	4.8148
22	42	4.7273	29	58	4.5517	27	58	4.7037
23	58	4.6957	29	57	4.5517	27	47	4.7037
23	54	4.6957	28	48	4.5357	26	57	4.6923
22	41	4.6818	27	54	4.4444	27	49	4.6296
23	52	4.4783	27	49	4.3333	27	42	4.5556
22	48	4.4091	28	59	4.2857	26	54	4.4615
23	59	4.2609	28	47	4.1071	27	52	4.2222
22	47	4.1364	29	42	4.0690	27	59	4.1852
23	43	3.5217	29	43	3.1724	26	43	3.8462

Table E35.--Hierarchy of expectancy/decision making by performance: Principal Efficacy Questionnaire.

Low Performing			In-Between			High Performing		
No.	Item	Mean	No.	Item	Mean	No.	Item	Mean
22	73	5.4545	29	61	5.4138	27	61	5.3704
21	61	5.4286	29	73	5.3103	25	80	5.3200
22	70	5.2273	29	80	5.0690	27	73	5.1852
22	65	5.1364	29	71	5.0345	26	75	5.1154
22	63	5.0000	29	75	4.9655	27	71	5.0000
22	72	4.9545	29	74	4.8621	27	70	4.9630
23	80	4.9130	29	70	4.8621	26	76	4.8846
23	76	4.9130	28	63	4.7500	26	74	4.6923
22	71	4.9091	29	76	4.7241	26	72	4.6923
22	69	4.9091	29	72	4.5862	27	63	4.5556
22	74	4.8636	29	66	4.5862	27	69	4.5185
23	64	4.7391	29	67	4.5172	27	64	4.5185
22	67	4.6818	29	69	4.4828	27	66	4.4444
22	66	4.5455	29	68	4.2759	26	68	4.3462
23	78	4.4783	29	78	4.1379	25	78	4.2800
22	68	4.1818	29	64	4.0690	26	67	4.2692
22	77	4.0000	28	79	3.8571	25	77	4.1600
21	62	4.0000	28	77	3.7500	27	65	3.8519
22	65	3.8636	29	62	3.3793	25	79	3.8000
21	79	3.7143	28	65	3.3571	27	62	3.7778

Table E36.--Hierarchy of importance/goals by performance: Principal Efficacy Questionnaire.

Low Performing			In-Between			High Performing		
No.	Item	Mean	No.	Item	Mean	No.	Item	Mean
20	20	5.6500	29	20	5.5172	27	20	5.5926
23	13	5.3478	29	11	5.4138	27	14	5.4444
22	12	5.3182	29	4	5.3103	27	4	5.4444
22	8	5.2727	29	14	5.1724	27	13	5.3333
22	11	5.2273	29	13	5.0000	27	11	5.2222
22	9	5.2273	29	18	4.8966	27	5	5.2222
22	14	5.1818	29	9	4.8966	26	19	5.0769
22	10	5.1818	29	5	4.8966	27	10	5.0370
22	4	5.0909	28	10	4.8929	27	9	4.9259
22	15	5.0000	29	19	4.8276	27	12	4.8889
20	18	4.9500	29	8	4.7931	27	18	4.8519
20	19	4.8500	29	15	4.6897	27	7	4.7778
22	5	4.8182	29	16	4.5172	26	17	4.7692
22	6	4.6818	29	2	4.5172	27	15	4.7407
22	7	4.6364	29	17	4.4828	27	3	4.7037
21	17	4.6190	29	12	4.4828	27	6	4.6667
22	3	4.5909	29	3	4.3793	26	16	4.6538
22	16	4.5000	29	7	4.2759	26	8	4.6154
23	1	4.1304	29	6	4.2759	26	2	4.5769
22	2	4.0000	29	1	4.2414	26	1	4.0000

Table E37.--Hierarchy of importance/factors by performance: Principal Efficacy Questionnaire.

Low Performing			In-Between			High Performing		
No.	Item	Mean	No.	Item	Mean	No.	Item	Mean
22	25	5.7273	29	25	5.6897	26	38	5.6923
22	38	5.5909	29	38	5.5517	27	25	5.5556
22	28	5.3636	28	39	5.3214	27	35	5.4074
22	33	5.3182	29	33	5.2759	26	39	5.3846
20	22	5.3000	29	22	5.2414	27	36	5.3704
21	39	5.2857	29	36	5.1034	27	22	5.3333
22	36	5.1818	29	28	5.0690	26	28	5.3077
21	35	5.0000	29	35	5.0345	27	33	5.2963
22	31	5.0000	27	31	4.7778	27	26	5.2593
22	30	4.9545	29	32	4.7241	27	30	5.1852
22	40	4.9091	29	26	4.6897	27	32	5.0741
22	29	4.9091	29	34	4.5862	27	31	5.0741
23	26	4.8696	29	30	4.5862	27	29	4.9630
22	32	4.8636	29	24	4.5172	27	27	4.9630
20	21	4.8500	29	40	4.3793	27	34	4.7778
22	27	4.8182	29	27	4.3793	27	24	4.7407
22	24	4.7727	28	37	4.0357	26	37	4.0357
22	34	4.6818	29	21	4.0345	27	21	4.0345
23	23	4.2609	29	29	3.9655	27	23	3.8621
21	37	4.1905	29	23	3.8621	27	40	4.4074

Table E38.--Hierarchy of importance/strategies by performance: Principal Efficacy Questionnaire.

Low Performing			In-Between			High Performing		
No.	Item	Mean	No.	Item	Mean	No.	Item	Mean
22	56	5.7273	29	56	5.6897	27	56	5.8889
22	45	5.5909	29	60	5.6552	27	53	5.7778
22	53	5.5455	28	45	5.5000	26	60	5.6923
22	60	5.4545	28	44	5.3929	27	45	5.5926
22	44	5.4545	29	53	5.3793	27	44	5.5926
22	55	5.3636	29	50	5.2759	27	41	5.4815
22	50	5.2727	29	41	5.2759	27	50	5.4444
22	58	5.1364	28	55	5.2500	27	48	5.3333
22	49	5.1364	28	51	5.0714	27	55	5.2222
22	48	5.0909	28	48	5.0357	27	51	5.2222
23	51	5.0870	29	58	4.8966	27	46	5.1852
22	46	4.8636	27	46	4.8519	27	54	5.0000
22	41	4.8636	27	54	4.7407	27	49	5.0000
22	57	4.8182	27	49	4.6667	27	58	4.9630
22	54	4.7273	29	52	4.6552	27	47	4.9259
22	42	4.7273	29	57	4.6207	27	52	4.8148
22	52	4.6364	28	59	4.5714	27	42	4.8519
22	59	4.4545	29	42	4.4483	26	57	4.7692
22	47	4.1364	28	47	4.2857	27	59	4.5556
22	43	3.6364	29	43	3.3103	26	43	4.1154

Table E39.--Hierarchy of importance/decision making by performance: Principal Efficacy Questionnaire.

Low Performing			In-Between			High Performing		
No.	Item	Mean	No.	Item	Mean	No.	Item	Mean
21	61	5.5714	29	80	5.4138	27	61	5.6296
22	73	5.5455	29	61	5.3793	26	75	5.4231
22	70	5.5455	29	74	5.3103	27	73	5.4074
22	72	5.3636	29	75	5.2069	27	71	5.3704
22	75	5.3182	29	70	5.2069	25	80	5.3200
22	71	5.3182	29	71	5.0690	27	70	5.2593
22	76	5.2727	28	63	5.0000	26	72	5.2308
22	63	5.1364	29	76	4.9655	27	63	5.1852
22	80	5.0000	29	72	4.8966	26	74	5.0000
22	74	5.0000	29	68	4.8621	26	76	4.8462
22	69	4.8636	29	73	4.8276	26	68	4.7308
22	67	4.8182	29	67	4.6897	27	66	4.7037
22	66	4.7727	29	66	4.6897	27	64	4.7037
22	64	4.7727	29	69	4.5862	27	69	4.6667
22	78	4.5455	29	64	4.5172	25	77	4.4400
22	68	4.5000	29	78	4.3103	26	67	4.3462
21	77	4.3333	28	79	4.2857	25	78	4.2800
22	65	4.0000	28	77	4.1429	27	65	4.1111
21	62	3.7619	28	65	3.8214	25	79	4.0800
21	79	3.7143	29	62	3.1724	27	62	3.5556

Table E40.--Hierarchy of personal efficacy by performance: Modified Principal Efficacy Questionnaire.

Low Performing			In-Between			High Performing		
No.	Item	Mean	No.	Item	Mean	No.	Item	Mean
22	20	4.8182	30	20	4.9667	28	20	5.0714
22	25	4.7727	30	29	4.8333	27	29	4.8889
22	29	4.5909	29	25	4.7931	28	25	4.6429
22	7	4.5909	30	8	4.5333	28	24	4.5357
20	12	4.5500	30	7	4.4667	28	8	4.5000
22	28	4.5000	28	28	4.3929	28	7	4.3929
22	8	4.5000	30	24	4.2667	28	3	4.3571
22	15	4.4091	29	15	4.2414	28	1	4.3571
22	3	4.3182	30	12	4.1333	28	19	4.2857
22	1	4.3182	29	3	4.1379	28	15	4.2500
22	19	4.1364	30	1	4.1000	25	12	4.1200
22	24	4.0909	30	19	3.9667	28	21	4.0714
22	21	3.6818	30	21	3.9333	28	28	4.0357
22	14	3.2273	29	14	3.2069	27	14	3.5185
22	18	2.4091	30	18	3.2000	28	18	3.1429

Table E41.--Hierarchy of importance/administrator efficacy by performance: Modified Principal Efficacy Questionnaire.

Low Performing			In-Between			High Performing		
No.	Item	Mean	No.	Item	Mean	No.	Item	Mean
21	16	5.5714	30	30	5.4667	27	5	5.4815
22	30	5.1818	30	16	5.3667	28	9	5.4643
22	23	5.1818	30	23	5.2667	28	23	5.4286
22	9	5.1818	30	9	5.2667	27	16	5.3704
22	2	5.0909	30	5	5.1333	27	30	5.2857
22	5	5.0455	30	2	5.0667	28	2	5.0714
22	27	4.7273	30	22	4.9000	28	22	5.0000
22	22	4.6364	30	27	4.7333	27	27	4.9259
22	13	4.5455	30	17	4.4333	28	4	4.5357
22	17	4.5000	30	13	4.4000	27	11	4.3333
22	4	4.3636	30	6	4.1667	28	17	4.3214
22	11	4.1818	30	4	3.9667	28	13	4.2857
22	6	4.1364	28	11	3.7857	28	10	3.8571
19	10	3.8947	30	10	3.7000	28	6	3.4286
22	26	3.0000	30	26	3.2667	28	26	2.9643

Table E42.--Hierarchy of importance/personal efficacy by performance: Modified Principal Efficacy Questionnaire.

Low Performing			In-Between			High Performing		
No.	Item	Mean	No.	Item	Mean	No.	Item	Mean
22	19	5.4545	30	19	5.3667	28	19	5.4643
22	14	5.4091	30	14	5.5333	28	20	5.2857
21	1	5.3810	30	15	5.2000	28	21	5.2500
22	29	5.1818	30	20	5.0000	28	3	5.2500
21	3	5.0476	30	3	5.1000	28	14	5.1071
22	24	5.0455	30	1	5.1000	27	7	5.1071
22	15	4.9545	29	24	4.9655	28	29	5.0714
22	21	4.8636	30	29	4.9333	28	15	4.9643
22	20	4.8636	30	21	4.9000	28	24	4.9286
22	18	4.8636	26	28	4.8077	28	28	4.6786
22	25	4.8182	30	25	4.7333	28	25	4.5000
21	28	4.7619	30	18	4.7333	28	18	4.3929
22	7	4.6364	30	7	4.6000	28	1	4.8929
22	8	3.7727	30	8	3.7338	28	8	3.9286
22	12	3.2727	29	12	3.5172	27	12	3.5926

Table E43.--Hierarchy of administrator efficacy by performance: Modified Principal Efficacy Questionnaire.

Low Performing			In-Between			High Performing		
No.	Item	Mean	No.	Item	Mean	No.	Item	Mean
22	27	4.9091	30	27	4.7333	28	27	4.4286
21	22	4.6667	30	22	4.1000	28	22	4.2857
22	5	4.3182	30	5	3.8000	28	23	3.7143
22	23	3.8182	30	23	3.5333	27	5	3.2963
22	26	3.5455	30	6	3.4000	28	11	3.1786
22	30	3.5000	30	26	3.3333	28	30	3.0357
22	11	2.8182	30	30	3.0000	28	26	3.0357
22	6	2.7727	30	11	2.9667	26	2	2.8846
22	9	2.5455	29	9	2.5172	28	9	2.7857
22	4	2.4091	30	2	2.5000	28	6	2.7857
21	10	2.3810	30	16	2.4000	28	16	2.5714
22	2	2.2727	28	10	2.3214	28	4	2.3929
22	13	2.2273	30	17	2.1000	28	17	1.8571
20	16	2.2000	30	4	2.1000	27	10	1.8519
22	17	1.8182	30	13	1.9333	27	13	1.7037

BIBLIOGRAPHY

BIBLIOGRAPHY

AASA Critical Issues Report. (1983). The role of the principal in effective schools: Problems and solutions (Stock No. 021-00839). Arlington, VA: Jack McCurdy.

Armor, D., Conroy-Oseguera, P., Cox, M., King, N., McDonnell, L., Pascal, A., Pauly, E., & Zellman, G. (1976). Analysis of the school preferred reading program in selected Los Angeles minority schools (Santa Monica, CA: Rand). (Bethesda, Md.: ERIC Document Reproduction Service, ED 130 243)

Ashton, P. T., Webb, R. B., & Doda, N. (1982). A Study of teachers' sense of efficacy (Gainesville: University of Florida, Contract No. 400-790--75, National Institute of Education). (Bethesda, Md.: ERIC Document Reproduction Service, ED 231 834)

_____. (1983). A study of teachers' sense of efficacy: Executive report (Gainesville: University of Florida, Contract No. 400-79-0075, National Institute of Education). (Bethesda, Md.: ERIC Document Reproduction Service, ED 231 833)

Austin, G. (1979). Exemplary schools and the search for effectiveness. Educational Leadership, 7(10), 10-14.

Bandura, A. (March 1977). Self-efficacy: Toward a unifying theory of behavioral change. Psychological Review, 84, 191-215.

_____. Self-efficacy mechanism in human agency. American Psychologist, 37(2), 122-147.

_____, & Schunk. (1981). Cultivating competence, self-efficacy, and intrinsic interest through proximal self-motivation. Journal of Personality and Social Psychology, 41(3), 586-598.

Barth, R. S. (1984). Outside looking in--Inside looking in. Phi Delta Kappan, 66(15), 356-358.

Behling, H., Jr., & Champion, R. H. (1984). The principal as an instructional leader. Lutherville, MD: Instructional Improvement Institute.

Bennis, W., & Nanus, B. (1985). Leaders: The strategies for taking charge. New York: Harper & Row.

Berman, P., & Milbrey, W. M. (1977, April). Federal programs supporting educational change: Vol. VII. Factors affecting educational change (Santa Monica, CA: Rand). (Bethesda, Md.: ERIC Document Reproduction Service, ED 140 432)

Blumberg, A., & Greenfield, W. (1980). The effective principal: Perspectives on school leadership. Boston: Allyn & Bacon.

Bossart, S. T., Dweyer, D. C., Rowan, B., & Lee, G. V. (1982). The instructional management role of the principal. Educational Administration Quarterly, 18(3), 34-64.

Bray, J. H., & Maxwell, S. E. (1982). Analyzing and interpreting significant MANOVA's. In L. Crocker & J. Algina (Eds.), Introduction to classical and modern test theory (pp. 256-264). New York: Holt, Rinehart, & Winston.

Bridges, E. M. (1982). Research on the school administrator: The state of the art, 1967-1980. Educational Administration Quarterly, 18, 12-33.

Brookover, W. B., Gigliotti, R., Henderson, R., & Schneider, J. M. (1973). Elementary school social environment and school achievement: Final report (East Lansing: Michigan State University, College of Urban Development). (Bethesda, Md.: ERIC Document Reproduction Service, ED 086 306)

Brookover, W. B., & Lezotte, L. (1979). Changes in school characteristics coincident with changes in student achievement (Occasional Paper No. 17). East Lansing: Michigan State University, Institute for Research on Teaching.

Brookover, W. B., Schweitzer, J., Beady, C., Flood, P., & Wisenbaker, J. (1977). Schools can make a difference (East Lansing: Michigan State University, College of Urban Development). (Bethesda, Md.: ERIC Document Reproduction Service, ED 145 034)

Brookover, W. B., Schweitzer, J., Schneider, C. B., Flood, P. K., & Wisenbaker, J. (1978). Elementary school climate and school achievement. American Educational Research Journal, 15(2), 301-318.

Brundage, D. (1981). The journalism research fellows report: What makes an effective school (Washington, DC: George Washington University, Institute for Educational Leadership). (Bethesda, Md.: ERIC Document Reproduction Service, ED 226 505)

Burlingame, M. (1985). Images of leadership in effective schools literature. Paper presented at the Annual Meeting of the Educational Research Association, Chicago, IL.

California State Department of Education. (1977). California school effectiveness study, The first year: 1974-1975. Sacramento: California State Department of Education, Office of Program Evaluation and Research.

Chesler, M., Schmuck, R. A., & Lippitt, R. (1975). The principal's role in facilitating innovation. In J. V. Baldridge & T. E. Deal (Eds.), Managing change in educational organizations. Berkeley, CA: McCutchan.

Clark, D. L., Lotto, L. S., & McCarthy, M. M. (1980). Factors associated with success in urban elementary schools. Phi Delta Kappa, 61(7), 467-470.

Coghan, J., Lake, D., & Schroder, H. (1983). Identification of the competencies of high performing principals in Florida. Tallahassee: Florida Department of Education, Florida Council on Educational Management.

Cronbach, L. J. (1951). Reliability and the classical true score model. In L. Crocker & J. Algina (Eds.), Introduction to classical and modern test theory. New York: Holt, Rinehart & Winston.

Crowson, P. (1980). Discretionary behavior of principals in large city schools. Educational Administration Quarterly, 16(1), 45-69.

de Charms, R. (1968). Personal causation. New York: Academic Press.

_____. (1976). Enhancing motivation. New York: Irvington Publishers.

Dembo, M. H., & Gibson, S. (1985, November). Teachers' sense of efficacy: An important factor in school improvement. The Elementary School Journal, 86(2), 173-184.

Edmonds, R. (1978). A discussion of the literature and issues related to effective schooling. Paper prepared for the National Conference in Urban Education. St. Louis, MO: Carmel.

_____, & Frederickson, J. R. (1979). Search for effective schools: The identification and analysis of city schools that are instructionally effective for poor children (Boston, MA: Harvard University). (Bethesda, Md.: ERIC Document Reproduction Service, ED 170 396)

Edwards, P. (1984). Perceived leadership behaviors and demographic characteristics of principals as they relate to student reading achievement in elementary schools (Tallahassee: Florida Educational Research and Development Council). (Bethesda, Md.: ERIC Document Reproduction Service, ED 264 547)

Felsenthal, H. (1982). Factors influencing school effectiveness: An ecological analysis of an effective school (Paper presented at the Annual Meeting of the American Educational Research Association, New York, NY). (Bethesda, Md.: ERIC Document Reproduction Service, ED 214 299)

Fretters, W. B., Collins, E. F., & Smith, J. W. (1968). Characteristics differentiating under- and over-achieving elementary schools (Report No. 15; Washington, DC: Division of Data Analysis and Dissemination, National Center for Educational Statistics). (Bethesda, Md.: ERIC Document Reproduction Service, ED 021 318)

Fullan, M. (1982). The meaning of educational change. New York: Teachers College Press, Columbia University.

Gibson, S., & Dembo, M. H. (1984, August). Teacher efficacy: A construct validation. Journal of Educational Psychology, 76, 569-582.

Goldhammer, K., Becker, R., Withycombe, F., Doyle, E., Miller, C., Morgan, L., Deloretto, & Alderidge, B. (1971). Elementary school principals and their schools: Beacons of brilliance and potholes of pestilence (Monograph No. 23). Eugene: University of Oregon, Center for the Advanced Study of Educational Administration, 1971.

Goodlad, J. (1983, April). Improving schooling in the 1980's: Toward the nonreplication of nonevents. Educational Leadership, 40, 4-7.

Greenfield, W. D. (1983). A review of the research on the principalship: 1971-1981. In The role of the principal in effective schools: Problems and solutions (American Association of School Administrators Critical Issues Report). Sacramento, CA: Education News Service.

Gregory, L. (1980). Why do some urban schools succeed? (Phi Delta Kappa Study of Exceptional Urban Elementary Schools). Bloomington, IN: Phi Delta Kappa.

Gross, N., & Herriot, R. E. (1965). Staff leadership in public schools. New York; John Wiley & Sons.

Hall, G., Hord, S., & Griffin, T. (1984). In D. Hopkins & M. Widen (Eds.), Alternative perspectives on school improvement. Philadelphia, PA: Falmer Press.

Hall, J. (1974). The achieving manager: A behavioral profile. Conroe, TX: Teleometrics International.

Hallinger, P., & Murphy, P. (1985). Assessing the instructional management behavior of principals. The Elementary School Journal, 86, 217-247.

Hannaway, J., & Sproull, L. (1978-1979). Who's running the show? Coordination and control in educational organizations. Administrator's Notebook, 27, 1-4.

Hanson, M. (1976-1977). Beyond the bureaucratic model: A study of power and autonomy in educational decision-making. Interchange, 7(2), 27-38.

Heckman, P., Oakes, J., & Sirotnik, K. A. (1983, April). Expanding the concepts of school renewal and change. Educational Leadership, 40, 26-34.

Huberman, A. M., & Crandall, D. (1984, Summer). Effective schools and school improvement: A comparative analysis in two lines of inquiry. Educational Administration Quarterly, 20, 41-68.

Huff, S., Lake, D., & Schaalman, M. (1982). Principal differences: Excellence in school leadership and management. Boston, MA: McBer Associates.

Isherwood, G. (1983). The principal and his authority: An empirical study. The High School Journal 56(6), 291-303.

Jarvis, O. T., Parker, C. A., & Moore, A. A., Jr. (1970). A state survey of the elementary school principalship in Georgia, 1969 (Athens: University of Georgia, Georgia Department of Elementary School Principals and the Bureau of Educational Studies and Field Services, College of Education). (Bethesda, Md.: ERIC Document Reproduction Service, ED 047 397)

Johnson, S. M. (1983). Teacher unions in schools: Authority and accommodation. Harvard Educational Review, 53(3), 309-326.

Johnson, T. (1985). Profile of a successful principal. Principal, 64(3), 42-43.

Koff, R. H., Laffey, J., Olson, G., & Achon, D. (1979). Stress and the school administrator. In The role of elementary school principals: A summary of research. Arlington, VA: Educational Research Services.

Krajewiski, R. (1982, May). How to avoid being taken for a ride when the next bandwagon starts to roll. American School Board Journal, 169, 30-31.

Kunz, D. W., & Hoy, W. K. (1976). Leadership style of principals and the professional zone of acceptance of teachers. Educational Administration Quarterly, 12(3), 49-64.

Leithwood, K. A., & Montgomery, D. J. (1982). The role of the elementary school principal in program improvement. Review of Educational Research, 52(3), 309-339.

_____. (1984). Patterns in growth in principal effectiveness (Paper presented at the Annual Meeting of the American Educational Research Association, New Orleans, LA). (Bethesda, Md.: ERIC Document Reproduction Service, ED 246 526)

Levine, D. V., & Stark, J. (1981). Instructional and organizational arrangements and processes for improving academic achievement at inner-city elementary schools (Kansas City: University of Missouri School of Education, Center for the Study of Metropolitan Problems in Education). (Bethesda, Md.: ERIC Document Reproduction Service, ED 213 814)

Lipsitz, J. (1984). Successful schools for young adolescents. New Brunswick, NJ: Transaction Books.

Marcus, A. C., Wellisch, J. B., MacQueen, A. H., Duck, G. A., & Lee, D. R. (1976). Administrator leadership in a sample of successful schools from the national evaluation of the emergency school aid act (Paper presented at the Annual Meeting of the American Educational Research Association, San Francisco, CA). (Bethesda, Md.: ERIC Document Reproduction Service, ED 125 123).

Maryland State Department of Education. (1978). Process evaluation: A comprehensive study of outliners (Baltimore: Maryland State Department of Education, University of Maryland, and Center of Educational Research and Development). (Bethesda, Md.: ERIC Document Reproduction Service, ED 160 644)

Miles, M. B., Farrar, B., & Neufeld, B. (1983). Review of effective schools programs. Cambridge, MD: Huron Institute.

National Institute for Education. (1978). Violent schools--safe schools: The safe school study report to the Congress (Vol. 1). Washington, DC: U.S. Department of Health, Education, & Welfare.

Newell, K. M. (1978). Some issues on action plans. In G. E. Stellmoch (Ed.), Information processing in motor control and learning. New York: Academic Press.

New York City Board of Education. (1979). School improvement project: The case study phase. New York: New York City Board of Education, School Improvement Project.

Patterson, B. B. (1984). Perceptions of efficacy in effective and ineffective principals. Dissertation Abstracts International, 45, 3504-A. (University Microfilms No. DA 8503751)

Peabody, R. L. (1962). Perceptions of organizational authority: A comparative analysis. Administrative Science Quarterly, 6, 463-482.

Peterson, K. D. (1977). The principal's tasks. Administrator's Notebook, 26(8), 1-4.

Pharris, W., & Zakariya, S. (1979). The elementary school principalship in 1978: A research study. Arlington, VA: National Association of Elementary School Principals.

Phi Delta Kappa. (1980). Why do some urban schools succeed? The Phi Delta Kappa study of exceptional urban elementary schools. Bloomington, IN: Phi Delta Kappa.

Reinhardt, D., Arends, R., Burns, M., Kutz, W., & Wyart, S. (1979). A study of the principal's role in externally funded change projects and the implementation for inservice training (Vol. 1) (Technical Report from the University of Oregeon Teacher Corps Project).

Rose, J. S., & Medway, F. J. (1981). Measurement of teachers' beliefs in their control over student outcomes. Journal of Educational Research, 74, 185-190.

Rosenburg, J. R. (1980). The role of elementary school principals in the curriculum development process (Ed.D. dissertation, University of Massachusetts). Dissertation Abstracts International, 40-12A, 6137.

Rotter, J. B. (1966). Generalized expectancies for internal versus external control of reinforcement. Psychological Monographs, 80, 1-28.

Rowan, B., Dweyer, D., & Bossart, S. (1985, January). Methodological considerations in studies of effective principals. In L. Manasse (Ed.), Improving Conditions for Principal Effectiveness: Policy Implications of Research. Elementary School Journal, 85, 24-31.

Rummel, R. J. (1970). Applied factor analysis. Evanston, IL: Northwestern University Press.

Russell, J. S., Mazzarella, T. W., & Maurer, S. (1985). Linking the behaviors and activities of secondary school principals to school effectiveness: A focus on effective and ineffective behaviors. Eugene: University of Oregon, College of Education.

Saltzer, E. B. (1982). The relationship of personal efficacy beliefs to behavior. British Journal of Social Psychology, 21, 213-221.

Sarason, S. B. (1971). The culture of the school and the problem of change. Boston, MA: Allyn & Bacon.

Sergiovanni, T. J. (1984, February). Leadership and excellence in schooling. Educational Leadership, 41, 11-23.

Smith, L. M., & Keith, P. M. (1971). Anatomy of educational innovation. In K. A. Leithwood & D. J. Montgomery (Eds.), The role of the elementary school principal (1982). Review of Educational Research, 52(3), 309-339.

State of New York. (1974). School factors influencing reading achievement: A case study of two inner-city schools. Albany: State of New York, Office of Education Performance Review.

Stogdill, R. M. (1974). The handbook of leadership: A survey of theory and research. New York: Free Press.

Stoker, W. M. (1975). Four hundred elementary school teachers look at the elementary school principalship. (Bethesda, Md.: ERIC Document Reproduction Service, ED 122 414)

Strother,D. B. (1983). The many roles of the effective principal. Phi Delta Kappan, 65(4), 291-294.

Sweeney, J. (1982, February). Research synthesis on effective school leadership. Educational Leadership, 39, 346-352.

University of the State of New York. (1976). Three strategies for studying effects of school processes: An expanded edition of which school factors relate to learning. Albany: University of the State of New York, Bureau of School Programs Evaluation, New York State Education Program. (Bethesda, Md.: ERIC Document Reproduction Service, ED 123 572)

Utz, R. T. (1972). Principal leadership styles and effectiveness as perceived by teachers (Paper presented at the annual meeting of the American Educational Research Association, Chicago, IL). (Bethesda, Md.: ERIC Document Reproduction Service, ED 064 240)

Vallina, S. A. (1978). Analysis of observed critical task performance of Title 1--ESEA principals, State of Illinois (Ed.D. dissertation, Loyola University of Chicago). Dissertation Abstracts International, 38/11, 6461-A.

Venezsky, R. W., & Winfield, L. F. (1979). Schools that succeed beyond expectations in teaching reading. (University of Delaware Studies on Education, Technical Report No. 1). (Bethesda, Md.: ERIC Document Reproduction Service, ED 172 484)

Watson, G. (1976). In I. Morrish (Ed.), Aspects of educational change. New York: John Wiley & Sons.

Weber, G. (1971). Inner-city children can be taught to read: Four successful schools (Occasional Paper No. 18). Washington, DC: Council for Basic Education.

Weick, K. (1976). Educational organizations as loosely coupled systems. Administrative Science Quarterly 21, 1-19.

Wellisch, J. B., MacQueen, A. H., Carriere, R. A., & Duck, A. A. (1978). School management and organization in successful schools. Sociology of Education, 51(3), 211-226.

White, R. W. (1959). Motivation reconsidered: The concept of competence. Psychological Review, 66, 297-333.

Wilson, K. (1982). An effective school principal. Educational Leadership, 39, 357-361.

Wittmer, J., & Loesch, L. (1976). A study of teacher-principal relationships. The Humanist Educator, 15(14), 98-105.

Wolcott, H. F. (1973). The man in the principal's office: An ethnography. New York: Holt, Rinehart, & Winston.

Wynne, E. A. (1981). Looking at good schools. Phi Delta Kappan, 62(5), 377-381.

Zirkel, P. A., & Greenwood, S. C. (1987). Effective schools and effective principals: Effective research? Teachers College Record, 89(2), 255-267.