5-1-1997

Teachers' Perceived Sense of Efficacy: Connections to Teacher Perceptions of Principals' Power Bases

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TEACHERS' PERCEIVED SENSE OF EFFICACY: CONNECTIONS TO TEACHER PERCEPTIONS OF PRINCIPALS' POWER BASES

by

Stephen C. Hardiman

A DISSERTATION

Presented to the Faculty of

The Graduate College at the University of Nebraska

In Partial Fulfillment of Requirements

For the Degree of Doctor of Education

Major: Educational Administration

Under the Supervision of Dr. Jack McKay

Omaha, Nebraska

May, 1997

DISSERTATION TITLE

TEACHERS' PERCEIVED SENSE OF EFFICACY: CONNECTIONS TO TEACHER PERCEPTIONS OF PRINCIPALS' POWER BASES

BY

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Abstract

TEACHERS' PERCEIVED SENSE OF EFFICACY: CONNECTIONS TO TEACHER PERCEPTIONS OF PRINCIPALS' POWER BASES

Stephen C. Hardiman

University of Nebraska, 1997

Advisor: Dr. Jack McKay

This study described high school teachers' perceptions of their Personal Teaching Efficacy and Teaching Efficacy (Gibson & Dembo, 1984), their perceptions of the seven power bases their principals used in their leadership roles (French & Raven, 1959; Raven & Kruglanski, 1970), and the relationships between teachers' Personal Teaching Efficacy and Teaching Efficacy scores and the seven power bases that principals were perceived to use.

The sample included in this study was drawn from 16 Midwestern suburban high schools. A stratified random sampling design provided for the sampling of 500 teachers with 300, or 60%, responding. Data were gathered by means of teacher responses to a survey which included sixteen items from The Teacher Efficacy Scale (Gibson & Dembo, 1984), and the twenty-one item Power Perception Profile - Perception of Others (PPP), developed by Hersey and Natemeyer (1979). The study used Personal Teaching Efficacy and Teaching Efficacy as the dependent variables with the seven power bases serving as independent variables. Mediating variables in this study were Teacher Gender, Teacher Years of Experience, and Teacher Level of Education.

Statistical analyses which included factor analysis, descriptive statistics, Cronbach's alpha, ANCOVA tests of significance, t-tests, Chi-Square, tests of

discriminant analysis, multiple regressions, and Cohen's effect size estimates, indicated that within the high school setting: Teachers, overall, have a low sense of teacher efficacy.

Teacher Experience, or Teacher Experience interacting with Teacher Education, predicted membership in the teacher efficacy groups as defined by this study. This study suggested that high school teachers with more experience, or more experience interacting with education, perceived they were increasingly limited in their ability to improve student achievement by external factors (Teaching Efficacy).

Within one of the defined efficacy groups, teachers who believed they were increasingly limited by external factors in their ability to help students achieve (low sense of perceived Teaching Efficacy) perceived their principals as primarily relying on Coercive and also Reward Power. In contrast, principals who were primarily perceived by teachers as possessing Expert and also Referent Power were indicative of teachers who believed they were not increasingly limited by external factors in their ability to help students achieve (high sense of perceived Teaching Efficacy).

Acknowledgements

I would like to thank the people who helped make this study possible. My family, friends, and instructors who supported and encouraged me, and who provided assistance and insights into the final product were important contributors to this dissertation.

I would first like to extend my appreciation to my committee: Dr. Daniel Levine, Dr. Don Uerling, Dr. Neal Grandgenett, and my chair and advisor, Dr. Jack McKay. I sincerely appreciate the time, effort, and energy they have expended in my behalf. I would be remiss in not extending a special thank - you to Dr. Levine for the many hours we spent together on the statistical analyses, and Dr. Gary Hartzell for his encouragement and insights.

It is my belief that good schools are built on relationships much like one's home and family. If not for the "extra somethings" I received from my family relationships, this document would not have happened.

With all my love, to my wife and "best buddy" Rhonda, thank you for your patience, encouragement, and willingness to stand beside me in this effort. And to my father Bruce, and mother Donna, as always you've been there behind me; sometimes kicking, sometimes praising, but always there.

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Chapter 1

Introduction

Power is a phenomenon common to all social relationships within human society. This intangible force is manifested in the influence one individual has upon another. Often it is seen as manipulative; at other times, legitimate.

Yukl (1981) refers to power as an agent's capacity to influence a target person. This influence may be applied to the behavior, attitudes, or values of the target. At times the term power refers to influence over a particular person, but it may also mean influence over a group of people; their processes and decisions. In either case, power is an integral part of organizational behavior. Through its positive use, leaders can improve their effectiveness and increase the likelihood that organizational outcomes will be attained.

It is generally accepted that power is a deeply embedded force within organizations. McClelland (1975) defined power as "the capacity to effect (or affect) organizational outcomes" (p. 4). Research generally argues that for organizations to experience success, the leadership must be skilled in the use and acquisition of power.

Short and Johnson (1994) found that the school leader typically used one or more power bases to accomplish the goals and objectives adopted for the school. The power base or bases of the leader potentially positively or negatively affected such psycho-social dimensions as conflict, trust, and influence.

Research has pointed to the characteristics which principals display or should display in the desired role of "Instructional Leader" (Edmonds, 1979; Sergiovanni, 1984; Sizer, 1984; Arnn & Mangieri, 1988; and Roberts, 1989). These studies, however, examined the attitudes and traits of administrators without attending directly to how these attitudes and traits influenced the achievement of students.

A growing body of research has identified a teacher's perceived sense of efficacy as an important variable in the prediction of educational effectiveness (Ashton & Webb, 1982; Gibson & Dembo, 1984; Ashton & Webb,1986; Woolfolk & Hoy, 1990; Woolfolk & Hoy, 1993; Short & Johnson, 1994; and Taylor and Tashakkori, 1994). The relationship between principal behaviors, that is, the principal's use of power bases and teacher efficacy calls for and is worthy of further investigation.

A common thread in the research relating to educational organizations argues that a teacher with a high sense of efficacy promotes the success of that organization. In general, teacher efficacy focuses on the extent to which the teacher believes he or she has the capacity to affect student performance positively; the sense of efficacy affects the teacher's answer to the critical question, "Can I make a difference in helping students learn?"

Berman and McLaughlin (1977) in the Rand Corporation Change Agent Study found that teacher efficacy was the single most powerful explanatory variable in predicting student performance and program implementation and success. Teachers in more effective schools expressed a stronger sense of efficacy and tended to feel more responsible for the learning of their students than did teachers in less effective schools (Brookover and Lezotte, 1979).

Rand researchers defined efficacy as the extent to which the teacher believes he or she has the capacity to effect student performance (McLaughlin & Marsh, 1978). Ashton and Webb (1986) defined it as teachers' beliefs in their ability to have a positive impact on student learning. Efficacy was generally described as teachers' beliefs or convictions that they could influence how well all students learn, no matter what the students' ability level or motivation.

Gibson and Dembo (1984) described two factors that characterized teacher efficacy. Statistical analysis revealed that these two factors represented related but relatively independent constructs. Factor one, a sense of Personal Teaching Efficacy, referred to a

teacher's belief that she or he had the skills and abilities to improve student learning. A teacher's sense of Teaching Efficacy, Factor two, referred to pedagogy and represented the general belief the teacher held about the relationship between teaching and learning. This second factor included the belief that any teacher's ability to improve student learning is limited by external factors such as home environment, family background, and parental influence (Gibson and Dembo, 1984).

Current research builds upon the original work of Gibson and Dembo (1984). Hoy and Woolfolk (1990) opted to label Gibson and Dembo's (1984) dimensions of teacher efficacy as "Personal Teaching Efficacy" and "General Teaching Efficacy" in their study of student teachers; Greenwood, Olejnik, and Parkay (1990) explored the relationship between Personal Teaching efficacy and Teaching Efficacy and teachers' feelings of stress, locus of control, gender, race and ethnic origin, education, age, grade level, and teaching experience.

Hoy and Woolfolk (1993) applied these two dimensions of teacher efficacy to the aspects of a healthy school climate; Taylor and Tashakkori (1994) related teacher participation in decisions and school climate to teacher sense of efficacy and job satisfaction. Guskey and Passaro (1994) supported teacher efficacy as a multi-dimensional construct consistent with Gibson and Dembo (1984), although they preferred to indicate that the difference was due to an internal versus external difference, similar to locus of control.

Problem Statement

There exists a continuum of teacher efficacy levels across the staff within the high school setting. However, the general perception of high school teacher efficacy, especially in comparison to elementary teachers, is characteristically low (Fink, 1988; Parkay,

Olejnik, and Proller, 1986; Petrie, Hartranft, and Lutz, 1995). How can high school principals apply their bases of power to influence their teachers' sense of efficacy positively?

Summary

The school principalship is a position of power, and how effective principals use the power can make a difference in achieving a quality education (Porter & Lemon, 1988; Short & Johnson, 1994). Research has argued that leaders, such as principals, influence subordinates, such as teachers, within the context of described power bases (French and Raven, 1959; Raven and Kruglanski, 1970; Hersey and Blanchard, 1982; Blumberg & Greenfield, 1991; Blase, 1991; Blase, 1993).

The principal must create a setting in which the professionals, the teachers, can focus their energies on their role of helping students to learn (Hoy and Bliss, 1989; Blase, 1993). If having a high level of teacher efficacy is potentially advantageous for student learning, are there bases of power that principals operate from or can employ, that can influence the levels of efficacy in their staff?

Statement of Purposes

This study has three purposes:

1. To assess the perceived sense of high school teacher efficacy.
2. To examine the power bases of principals as perceived by high school teachers.
3. To investigate the relationships between high school teachers' sense of efficacy and high school teachers' perceptions of principals' power bases.

The independent variables in this study are high school teachers' perceived sense of principals' use of seven power bases. The dependent variables are teacher perceptions of Personal Teaching Efficacy and Teaching Efficacy (Ashton & Webb, 1983; Gibson & Dembo, 1984). The mediating variables are Teacher Gender, Teacher Years of Experience, Teacher Level of Education.

Research Questions

This study addresses the following research questions:

1. Are there statistically significant and substantive relationships between the Personal Teaching Efficacy and Teaching Efficacy scores of high school teachers, as measured by high school teachers' responses to the Teacher Efficacy Scale, and controlling for the teacher variables of Gender, Years of Experience, and Education?

2. What are the configurations of the seven different power bases used by principals: expert, informational, referent, coercive, legitimate, connection, and reward, as measured by high school teachers' responses to the Power Perception Profile - Perception of Others?

3. Are there statistically significant and substantive differences in the seven power bases used by male and female principals: expert, informational, referent, coercive, legitimate, connection, and reward, as measured by high school teachers' responses to the Power Perception Profile - Perceptions of Others?

4. Are there statistically significant and substantive relationships between the Personal Teaching Efficacy and Teaching Efficacy scores of high school teachers, and the seven power bases principals are perceived to use: expert, informational, referent, coercive, legitimate, connection and reward, controlling for the teacher variables of Gender, Years of Experience, and Education?

Definition of Terms

The following terms are defined accordingly for their use in this study:

Power is the real or imagined ability of an individual (social agent) to influence the behavior of another (Stimson & Appelbaum, 1988).

Expert power relies upon special knowledge or expertise, or the perception of knowledge or expertise, that an individual attributes to a social agent (French and Raven, 1959).

Coercive power includes the individual's perception of the social agent's ability to manipulate penalties and/or punishments (French and Raven, 1959).

Legitimate power originates from internalized values in the individual which charge the social agent with the valid right to influence that individual (French and Raven, 1959).

Referent power is based on the identification of the individual with the social agent (French and Raven, 1959).

Reward power is power based on the individual's perception of the social agent's ability to mediate rewards for him or her (French and Raven, 1959).

Connection power is the ability to control behavior based on a leader's connections with influential or important persons inside or outside the organization (Hersey & Blanchard, 1982).

Information power is the ability to control behavior based on the leader's possession of or access to information (Hersey & Blanchard, 1982).

Personal power is an organizational framework of the power bases derived from the personal characteristics of the individual. This relies largely on the relationship between superordinate and subordinate, and it tends to be horizontal in nature and cooperative and sharing in orientation (Stimson & Appelbaum, 1988). Personal sources of power originate

from the individual and serve to frame Referent, Expert, and Information bases of power (French and Raven, 1959; Raven and Kruglanski, 1970; Hersey and Blanchard, 1982).

Positional power is a framing of power bases that draw upon one's position in the organization as a primary power source. It tends to be hierarchial in nature, frequently is combative, and produces winners and losers (Stimson & Appelbaum, 1988). Positional power sources are associated with title or position within the organization. Reward, Coercive, Connection, and Legitimate power bases are framed within these sources (French and Raven, 1959; Raven and Kruglanski, 1970; Hersey and Blanchard, 1982).

Teacher Efficacy refers to the belief that a teacher individually holds that he or she can help even the most difficult or unmotivated student learn (Berman & McLaughlin, 1977). It is characterized by two relatively independent dimensions: Personal Teaching Efficacy and Teaching Efficacy (Ashton & Webb,1982; Gibson & Dembo,1984).

Personal Teaching Efficacy refers to an individual's assessment of his or her own teaching competence, a teacher's belief that he or she has the skills and abilities to improve student learning (Ashton & Webb, 1982; Gibson & Dembo, 1984).

Teaching Efficacy refers to pedagogy, and represents the general beliefs teachers hold about the relationship between teaching and learning. It is the expectation that teaching can influence learning despite external obstacles such as family background and student ability (Ashton & Webb, 1982; Gibson and Dembo, 1984).

Significance of the Study

There is a positive relationship among teacher efficacy and the academic achievement of students and teacher behaviors that promote student achievement (Armour et al., 1976; Berman & McLaughlin, 1977; Gibson & Dembo, 1984; Ashton & Webb, 1986; Smylie, 1988; Woolfolk & Hoy, 1993; and Taylor & Tashakkori, 1994). In today's

schools, restructuring and making changes to meet a multiplicity of student needs are prevalent. In adopting change proposals, Berman and McLaughlin (1977) found a greater likelihood for the more-efficacious teachers to embrace change proposals. Hoy, Tarter, & Kottkamp (1991) found the principal to be in a position of leadership which could facilitate a climate of commitment and change within the organization.

The principalship is a position of power (Porter & Lemon, 1988; Short & Johnson, 1994). Research (Greenwood, Olejnik, & Parkay, 1990; Coladarci,1992; Woolfolk & Hoy, 1993; and Taylor & Tashakkori, 1994) has investigated the relationship of the principal's power to such generalized constructs as teacher empowerment, job satisfaction, teacher motivation, teacher commitment, and organizational climate. However, more attention needs to be given to the topic of how principals influence the instructional work of their schools (Greenfield, 1982, Wilkerson, 1994).

There is a gap in the literature in terms of describing the relationships between the power bases perceived by teachers to be used by principals and their relationships to teacher efficacy, especially at the high school level. How can high school principals apply their bases of power to influence their teachers' sense of efficacy positively?

By administering Hersey and Natemeyer's Power Perception Profile - Perception of Others and Gibson and Dembo's Teacher Efficacy Scale to high school teaching staff, this study attempts to discover and describe connections between high school principals' use of power bases as perceived by teachers, and high school teachers' perceived sense of Personal Teaching Efficacy and Teaching Efficacy.

Chapter II

Review of Related Literature

This review of the related literature begins with foundational research related to the construct of teacher efficacy. The literature review of the concept of efficacy will originate in the antecedent work done in social psychology, and will progress through a review of efficacy research encompassing teachers.

Power and its bases will follow a similar development, beginning with a description of the related research and progressing toward the exercise of power by the principal and to research related to the influence of the principalship on the learning organization, and in particular, on teacher behavior.

Theoretical Perspective: Efficacy

The concept of efficacy appears in a wide range of sociological and psychological literature. Some scholars explore efficacy as an internal condition, roughly equivalent to a strong ego; whereas others address efficacy as a learned or situational attitude. Sociology, social psychology, and particularly psychology offer a rich theoretical literature on efficacy. Stipek and Weisz (1981) suggested three theoretical models for understanding efficacy:

1. Social learning theory (Rotter, 1954) focuses on the degree to which an individual believes that his/her behavior influences outcomes;

2. Attribution theory (Weiner,et al., 1976) addresses the degree to which an individual believes he or she can control factors that cause outcomes;

3. Intrinsic motivation theory (DeCharms, et al, 1965; Deci, 1975; White, 1959) assumes that it is natural for humans to strive for competence (White) or control

(DeCharms) and that an individual's intrinsic motivation may be affected by the outcome of these efforts (1981, p. 129).

Theoretical Framework of Efficacy

The levels at which a person can perform depend not only on the knowledge and skill level of the person, but also upon the belief they hold regarding their abilities to use their knowledge and skills to obtain results. Researchers generally credit Albert Bandura for providing the theoretical framework for studying efficacy.

Most current research references the foundational work of Albert Bandura in establishing a theoretical basis for studying efficacy (Gibson & Dembo, 1984; Ashton & Webb, 1986; Guskey, 1987; Woolfolk & Hoy, 1990; Greenwood, Olejnik, & Parkay, 1990; Coladarci, 1992; Woolfolk & Hoy, 1993; Sills, 1993; Taylor & Tashakkori, 1994; Short & Johnson, 1994; Guskey & Passaro, 1994; Wilkerson, 1994). Because current research on efficacy uses Bandura as the theoretical standard, a comprehensive review of his findings is in order.

In his study of self-efficacy Bandura (1977) argued that an individual's performance was influenced by the person's beliefs regarding two categories of expectations: outcome expectation, a person's estimate that a given behavior would lead to certain outcomes (p. 193) and efficacy expectation, the conviction that one could successfully execute the behavior required to produce the outcomes (p. 193). Bandura differentiated between outcome and efficacy expectations because individuals could believe that a particular behavior would produce certain outcomes, but if they doubted whether they could perform the necessary activities such information did not influence their behavior.

Within the context of teaching, an outcome expectation is seen in the teacher who believes that skillful instructional strategies can offset the effects of a negative home

environment. Here, efficacy relates to pedagogy and is expressed not for one's self but rather for teaching in general. Tracz and Gibson (1986) correlated this dimension with Teaching Efficacy, the general belief that teaching can affect learning in students despite family background, socio-economic factors, parental influence, or gender.

In contrast, Bandura's (1977) efficacy expectation, or self-efficacy, is a reflection of Gibson and Dembo's (1984) and Hoy and Woolfolk's (1990) Personal Teaching Efficacy, the teacher's confidence that he or she is personally capable of promoting student learning.

Bandura's (1977, 1982) theoretical foundation was social learning theory. As such, he defined efficacy as an internal perception that interacts with external conditions and is changeable. Bandura argued that "the self–efficacious individual would intensify efforts and, if necessary, try to change the environment" (1982, p. 141). He tied perceived self–efficacy to a willingness to exert effort, to task perseverance, and to high performance attainment.

Bandura's (1977) findings supported the argument that not only could perceived self-efficacy influence one's choice of activities and settings, but, through expectations of eventual success, it could affect coping efforts once they are initiated. "Efficacy expectations determine how much effort people will expend and how long they will persist in the face of obstacles and aversive experiences. The stronger the perceived self-efficacy, the more active the efforts" (1977, p. 194).

Sources of Efficacy Expectations

Bandura identified four major sources of information from which an individual receives information regarding his or her own efficacy: performance accomplishments,

vicarious experience, persuasion and social influence, and emotional arousal (1977, p. 195; 1982, p. 127).

Performance accomplishments.

Successful experiences were found to be of primary influence on the individual's sense of efficacy. Bandura found that experiencing repeated success raised one's perception of efficacy and that repeated failure lowered one's perception of efficacy, particularly if failures occurred early in the overall experience. The effects of failure on personal efficacy depended partly on the timing and the overall pattern of experiences in which the failures occurred. Bandura argued that the efficacious individual would externally attribute a failure to the use of a poor strategy or to the lack of effort. Once a person established self-efficacy, it tended to generalize to other situations (1977).

Vicarious experience.

Experiencing mastery is not the sole source of information for a person's level of self-efficacy. Through the observation of others who are successfully performing, an individual's perception of efficacy can be enhanced. Bandura found that many expectations were derived from vicarious experience. Watching others perform could lead to the expectation that one could improve if effort was intensified and the person were persistent (1977).

Bandura (1986) noted that relevance is a key to this source of information. Situation-specific relevance or relevance of ability levels must be apparent to the observer. Vicarious experience was not as dependable a source of information about one's capabilities as was direct personal accomplishment. Efficacy expectations derived as the result of vicarious experience were likely to be weaker and more vulnerable to change.

Verbal persuasion/social influence.

An important point of consideration for those in positions of leadership was Bandura's finding that individuals could develop a sense of efficacy expectation through the verbal influence and/or influence of others. He argued that people could be led or influenced by others into believing they could successfully cope with what may had overwhelmed them in the past. Efficacy expectations derived from this source were also likely to be weaker than those arising from one's own accomplishments because they did not provide an authentic experiential base. (1977).

Bandura (1977) provided evidence that the results of several lines of research attest to the limitations of instilling outcome expectations in people simply by telling them what their expectations should be. He provided support for meaningful inservice activities by arguing that although social persuasion alone had limitations in creating a sense of personal efficacy, it contributed if the persuader was credible, trustworthy, had perceived expertise, and was in a position to provide resources and to manage the conditions that were conducive to success.

Emotional arousal or physiological states.

Information about one's self-efficacy may find its source in stress and fear. Fatigue, aches, and anxiety resulting from stress and fear could lower performance levels and negatively affect one's sense of self-efficacy. Anxiety not only lowered performance levels, but generated still more anxiety. Individuals tended to expect success when they faced a situation which created an anxiety level with which they must tolerate and cope. Bandura (1986) found that modeling approaches that demonstrated effective coping skills in threatening situations had advantages for enhancing self-efficacy, removing fears, and improving performance.

Bandura's theoretical framework of efficacy was expanded by his (1982) investigation of the self-efficacy mechanism. Bandura addressed how people judged their capabilities and how, through their own self-perception of efficacy, they could affect personal motivation and behavior. Bandura described self-perception of efficacy as it influenced thought patterns, actions, and emotional arousal. He found that "the higher the level of induced self-efficacy, the higher the performance accomplishments and the lower the emotional arousal" (1982, p. 122).

Perceived self-efficacy was concerned with an individual's judgements about how well one executed courses of action required to deal with various situations. Bandura asserted that judgements of self-efficacy also determined how much effort people would expend and how much persistence they would maintain. People who had serious doubts about their capabilities did not persist in their efforts. Whereas, those who had a strong sense of efficacy exerted greater effort and demonstrated a high level of persistence.

Self-perception of efficacy.

Bandura analyzed the relationship between self-efficacy and actions and found that levels of performance varied as a direct function of perceived efficacy and that increasing levels of perceived efficacy gave rise to higher performance (1982). He found that people were influenced more by how they "read" their performance's success than by the performance itself, especially in relationship to what their future behavior might entail. "Perceived self-efficacy was a better predictor of subsequent behavior than was performance attainment in treatment. The findings that perceptions of efficacy often surpass final performance as predictors of future performance received support from studies of other activities" (1982, p. 124).

Bandura (1986) described both the efficacious and inefficacious individual. Efficacious individuals were seen to set challenging yet realistic goals and were not afraid

to try new and difficult tasks. This person had a developed level of skill proficiency and belief in his or her ability to use and/or adapt those skills when needed. When performance fell short of the expected outcome, effort was intensified. The efficacious individual approached threatening situations with confidence and experienced lower levels of anxiety.

The inefficacious individual was seen in stark contrast to this description. Inefficacious individuals shied away from difficult tasks, decreased their efforts when faced with difficulties, and attributed their failures to a lack of personal skill. These individuals held low aspirations for success and externalized credit for success. They experienced high levels of anxiety and stress which continually undermined their performance (Bandura, 1986).

Bandura (1986) summarized the contrast between the efficacious and inefficacious individual: "Research shows that people who regard themselves as highly efficacious act, think, and feel differently than those who perceive themselves as inefficacious. They produce their own future rather than simply foretell it" (p. 395). He argued that the development, enhancement, and maintenance of self-efficacy was not easy and could be achieved only through long hours of work and effort. Because of the constant change that accompanied social and technological advances, the demands for the continued heavy investment of time, effort, and resources was not going to end.

Based upon this seminal research, efficacy is regarded as derived from perceptions of both individual ability and conferred support or power. Efficacy is dependent upon one's perception of his/her ability to effect valued outcomes through personal effort (Bandura, 1977,1982; Fuller et al., 1982).

The Construct of Teacher Efficacy

The concept of teacher efficacy had its beginnings in two frequently cited Rand Corporation (Armor et al., 1976) evaluation studies (Gibson & Dembo, 1984; Ashton & Webb, 1986; Guskey, 1987; Woolfolk & Hoy, 1990; Greenwood, Olejnik, & Parkay, 1990; Coladarci, 1992; Woolfolk & Hoy, 1993; Sills, 1993; Guskey & Passaro, 1994; Wilkerson, 1994). From these two studies, Armor and others (1976) reported a strong, significant relationship between teacher efficacy and student achievement.

These results showed that the more efficacious a teacher felt, the more gains were observed in students' reading achievement. Although Armour and others (1976) noted that the data did not allow them to conclude how it was possible to raise teacher's sense of efficacy, the conclusion was drawn that a high sense of efficacy was a precursor to effective teaching.

In the second study, Berman et al. (1977) investigated the factors which affect the implementation and continuation of federal programs supporting educational change. They found that the teachers' sense of efficacy was positively related to the percentage of the project goals that were achieved, the amount of teacher change observed, the continuation of both project methods and materials, and the improvement of student performance.

The scope and influence of Bandura's (1977) framework of self-efficacy has been widely influential in other significant research which has furthered the understanding of teacher efficacy (Ashton & Webb, 1982; Ashton, Webb, & Doda, 1983; Buhr, Crocker, & Ashton, 1983; Webb, 1982; Gibson & Dembo, 1984). These foundational investigations are frequently cited sources in current teacher efficacy research (Guskey, 1987; Woolfolk & Hoy, 1990; Greenwood, Olejnik, & Parkay, 1990; Colodarci, 1992; Woolfolk & Hoy, 1993; Sills, 1993; Taylor & Tashakkori, 1994; Short & Johnson, 1994; Guskey & Passaro, 1994; Wilkerson, 1994).

Teacher Efficacy and Classroom Behavior

Ashton and Webb (1982) found a significant relationship between teachers' sense of efficacy and student achievement on the Metropolitan Achievement Test in forty-eight high school basic skills classes in mathematics and language. These findings supported the results of Armour et al. (1976) and Berman et al. (1977).

Through teacher interviews, Ashton and Webb (1982) concluded that maintaining a sense of efficacy was difficult for teachers. They noted the importance of pursuing investigations of classroom behaviors to determine how teachers who possessed different levels of efficacy behaved in the classroom. Interviews conducted with both teachers and principals suggested there was a relationship between the influence of the principalship and teachers' sense of efficacy. Two dimensions of efficacy, sense of Personal Teaching Efficacy and sense of Teaching Efficacy, were found to predict achievement, with sense of Personal Teaching Efficacy found to be the greater predictor (Ashton and Webb, 1982).

Ashton et al. (1983) conceptualized teachers' sense of efficacy within a framework that captured two differing dimensions of teacher efficacy: Teaching Efficacy and Personal Teaching Efficacy. These researchers defined the first dimension, Teaching Efficacy, as the expectation that teaching (pedagogy) could influence learning. Teachers differed in the extent to which they believed teaching could affect student performance, considering the influence of external obstacles such as family background and student ability.

The second dimension of teacher efficacy, Personal Teaching Efficacy, referred to an individual's assessment of his or her personal teaching competence. Teachers' perceptions of their own abilities influenced their choices of classroom strategies of management and instruction. Teachers generally avoided situations if they doubted their ability to be successful. Ashton et al. found Personal Teaching Efficacy as the best predictor of teacher behavior (1983).

In an attempt to address the conceptualization and measurement of the construct of teacher efficacy, Gibson and Dembo (1984) conducted an investigation involving 208 elementary school teachers. The study consisted of three parts. Phase one of the study asked: "What are the dimensions of teacher efficacy? How do these dimensions relate to Bandura's theory of self-efficacy? What is the internal consistency of the teacher efficacy measure?" (p. 570). Phase two of the study addressed the questions: "Does collection of data concerning teacher efficacy from different sources in different ways converge? Can teacher efficacy be differentiated from other constructs?" (p. 570). Phase three, involving classroom observations, asked: "Do high-efficacy and low-efficacy teachers exhibit differential patterns of teacher behaviors in the classroom related to academic focus, feedback, and persistence in failure situations?" (p. 571).

Conclusions that Gibson and Dembo's (1984) derived from these three phases of the study were:

1. The factor analysis of the teacher efficacy scale yielded two factors (dimensions) that corresponded to Bandura's two–component model of efficacy. Factor one represented a teacher's sense of Personal Teaching Efficacy or belief that she or he possessed the skills and abilities to bring about student learning. Factor two represented a teacher's sense of Teaching Efficacy -- the expectation that teaching (pedagogy) could influence learning. This factor addressed the belief that any teacher's ability to bring about change was limited by external factors, such as home environment, family background, and parental influence.

2. Evidence exists supporting the convergence and discriminability of teacher efficacy. Results verified the distinction between teacher efficacy and two other constructs (verbal ability and flexibility) which past research supported as present in effective teachers.

3. In observing classroom behaviors, differences between high-efficacy and low-efficacy teachers were found. For example, differences were found in the amount of time

used in small-group instruction. High - efficacy teachers spent less time in small group instruction and more time monitoring students' work. Low-efficacy teachers tended to give feedback involving criticism and demonstrated a lack of persistence in their questioning skills. Low-efficacy teachers were ineffective at leading students to correct responses, or would continue on to another question or another student before a correct response was obtained.

Gibson and Dembo's (1984) factor analysis of responses from 208 elementary school teachers on a 30–item Teacher Efficacy Scale has become a referent basis for many efficacy survey instruments (Colardarci, 1992).

Tracz and Gibson (1986) used Gibson and Dembo's (1984) Teacher Efficacy Scale in assessing teacher efficacy and investigating its relationship to teacher use of time, student time on task, and student achievement. By means of classroom observations, teacher allocation of time, student engagement, and student achievement were measured.

These researchers' findings supported the argument that a teacher's sense of efficacy was significantly related to classroom grouping of students and to student achievement outcomes. They found Personal Teaching Efficacy correlated positively with reading achievement and whole-class instruction and negatively with small-group instruction. Teaching Efficacy correlated significantly with language and mathematics achievement (Tracz and Gibson, 1986).

Guskey (1987) investigated the influence of specific classroom context variables and their affect on measures of teacher efficacy. His evidence demonstrated that teachers' perceptions of efficacy were complicated by the context of the interactions. These perceptions varied depending upon whether the performance outcome demonstrated student success or failure, whether the students involved were of high or low ability, and the extent of the teachers' scope of influence.

Efficacy Summary

Based on Bandura's framework, self-efficacy is a two-dimensional construct reflected in a person's estimate that a given behavior will lead to certain outcomes and the conviction that the individual can successfully execute the behavior required to produce the outcomes. Evidence suggests that teacher efficacy is conceptualized within a framework that similarly captures these two differing characteristics.

Teacher efficacy focuses on the general relationship between teaching and learning within two dimensions: Teaching Efficacy and Personal Teaching Efficacy. Teaching Efficacy can be characterized by a teacher's belief that certain pedagogical behaviors will indeed positively influence student learning regardless of external factors, such as home environment, family background, and parental influence. Personal Teaching Efficacy is reflected in the teacher's belief that he or she has the knowledge and skills to successfully execute those pedagogical behaviors.

Theoretical Perspective: Power

Power has been defined as "the ability of one party to change or control the behavior, attitudes, opinions, objectives, needs, and values of another party" (Rahim, 1992). Power is determined by the extent to which the leader can influence subordinates (Dahl, 1957; French and Raven, 1959).

The power bases that leaders use are critical to the influence they acquire. French and Raven (1959) framed one of the best known, and widely used, conceptualizations of power. They identified and defined five major types, or bases, of power: Legitimate Power, Coercive Power, Reward Power, Expert Power, and Referent Power.

This conceptualization has been formulated with the focus on the person upon whom power is exerted. Power is defined in terms of its influence. These authors defined power as "potential influence" (Raven, 1993, p. 232) and they examined the resources an individual might possibly use in exercising influence. They defined power in terms of five bases:

1. Expert power relies upon special knowledge or expertise, or the perception of knowledge or expertise, that an individual attributes to a social agent (French and Raven, 1959).

2. Coercive power includes the individual's perception of the social agent's ability to manipulate penalties and/or punishments.

3. Legitimate power originates from internalized values in the individual which charge the social agent with the valid right to influence that individual.

4. Referent power is based on the identification of the individual with the social agent.

5. Reward power is power based on the individual's perception of the social agent's ability to mediate rewards for him or her.

Following the lead of this seminal research, Raven, collaborating with Kruglanski (1970) added Information Power as a sixth base. This power base was defined as the ability to control behavior based on the leader's possession of or access to information (Hersey & Blanchard, 1982). Hersey and Natemeyer (1979) proposed a seventh base of power, identified as Connection Power.

Research implies that leadership involves influence, that is, the process of influencing staff to strive to achieve group intentions (Koontz, O'Donnel and Weihrich, 1980). The leader's power is determined partly by the perception of the subordinates; they allow the leader to influence their behavior. By defining leadership in terms of attempts to influence the behavior of others, and power as the means by which the leader actually gains

the compliance of followers, it becomes difficult to separate the two concepts. Leaders cannot automatically influence other people; they must use power to succeed in any influence attempt (Hersey, et al., 1976).

Hersey, et al., (1976) found that it was the perception others hold about a leader's power that gave that leader the ability to induce compliance or to influence their behavior. Thus, an individual's power base has to be known to others before it can be effectively used. If leaders are to increase their probability of influencing the behavior of others, they need information about the sources of power they are perceived to possess to have by other people. As such, it can be important for leaders to communicate the power they actually possess.

The interactions between leaders and subordinates may have positive or negative consequences in an organization. Positive, constructive consequences occur when members of the organization feel competent as professionals and as human beings. Negative, destructive consequences can occur when members feel powerless, alienated, and oppressed. Subordinates can become passive or combative and express dissatisfaction with the leadership. The organizational climate resulting from this leadership reflects mistrust, low morale, and chronic lack of motivation (Krausz, 1986).

The Principal and Power

The school principalship is a position of power, and the ways in which principals use that power can make a difference in achieving a setting where students have access to quality education (Porter & Lemon, 1988). These presuppositions suggest that the ways principals use power and influence teachers is an important topic of study.

Power, although frequently given negative or manipulative connotations, has positive aspects to be considered by principals. McClelland (1971) characterized power as

an element in achieving group goals, finding goals that would motivate the group, and providing group members with the resources, confidence, and competence needed to achieve these goals. Maccoby (1983) argued that leaders who used this positive kind of power to empower their subordinates would, as a consequence, have more power conferred on them by their subordinates to accomplish organizational goals.

Short and Johnson (1994) found that the school leader typically used one or more of the power bases to accomplish the goals and objectives adopted for the school. The power base or bases of the leader potentially positively or negatively affected such psycho-social dimensions as conflict, trust, and influence.

In a study of 300 Alabama teachers, Short and Johnson (1994) found that principals were seen by teachers to be using their legitimate power base most frequently and the reward base the least frequently. Reward in this study was the lowest rated power base. The researchers attributed this finding to the limited tangible or monetary rewards available to the administrator.

Personal and Position Power.

Bass (1960) argued for a framing of power bases in terms of power of position and personal power. Each of the power bases was framed as either a personal or a position-based source of power. Etzioni (1961) further elaborated on this distinction. He argued that power was either derived from organizational office, personal influence, or a combination of both.

Personal bases of power included referent and expert power because they originated from the individual, regardless of their position in the organization. Position-based sources of power included reward, legitimate, and coercive power bases since they were typically associated with position or title (Nesler, Aguinis, Quigley, & Tedeschi, 1993).

Hersey, Blanchard, and Natemeyer (1976) described a model of seven bases of power. This model encompassed the five power bases of French and Raven (1959), the Information base of power (Raven and Kruglanski,1970), and Connection power, the ability to control behavior based on a leaders connections with influential or important persons inside or outside the organization (Hersey & Blanchard, 1982).

Stimson and Applebaum (1988) argued that four of these bases were framed within the power of position. These included the power to dispense rewards (Reward Power), the power to sanction or punish (Coercive Power), the power of the office (Legitimate Power), and the power based on knowing influential people (Connection Power). Three bases resided within personal sources of power: the power of expertise (Expert Power), the power of information (Information Power), and the power of personality (Referent Power).

Stimson and Applebaum found that teachers were overwhelmingly more satisfied with principals who relied on personal sources of power rather than on positional sources. Teacher satisfaction negatively correlated with all four types of positional power, whereas a positive relationship existed between the use of personal power and higher levels of teacher professionalism. Further elaborating upon this positive relationship (Stimson & Applebaum, 1988), Hersey, Blanchard, and Natemeyer (1976) found that the more mature (that is, experienced, willing, competent) a follower was, the less he or she was influenced by the use of position power.

Porter and Lemon (1988) described position sources of power and personal sources of power as two categories of power used by organizational leaders to influence followers. They found position power to be an important element in accomplishing school goals, as it was based on the legitimate right of the leader to make decisions and initiate action. In facing numerous school problems, principals used their position power to control

resources and the flow of information. Principals used position power to establish school rules and procedures and to reward and punish staff members (Porter and Lemon, 1988).

The principal's personal power influenced teachers to try new teaching methods and to improve curricula by providing justification and information. Further, by putting significant personal time and effort into staff supervision, the principal could influence staff members to greater efforts (Porter and Lemon, 1988).

In a study of 800 teachers' perceptions, Blase and Kirby (1992) found that few teachers volunteered that they were influenced out of respect for their principal's position alone. Teachers and principals reported that the exclusive reliance of principals on the power of their position, or formal authority, was considered degrading and condescending. This contrasted to Argyris (1957) who stated that workers were often expected to concede to formal authority because supervisors assumed that workers, like infants, were incapable of self-direction and self-discipline. Given this, there was no need for collaborative planning; empowerment would surely lead to immature decisions. Workers preferred to be told what to do; the exercise of formal authority was necessary for organizational survival.

Blase and Kirby (1992) further related that teachers qualified their responses as to the impact of position power or formal authority. Teachers reported that open and effective principals used the authority of their office to influence behavior, but did so equitably and respectfully. In several cases, teachers rationalized that principals needed to rely on the power of their position in order to influence other, less competent teachers. This was consistent with Hersey et al.'s (1976) theory that less mature followers (less competent teachers) responded more readily to the use of position power.

The principal's use of position power in the assignment of specific duties, formation of teacher committees, developing new instructional objectives or school policies, the enforcement of rules, or mandating actions, was viewed positively by teachers when they believed it was used fairly to achieve positive outcomes for <u>others</u>, and if it was

not viewed as a manipulative tactic for the principal's own personal gain (Blase and Kirby, 1992). The results of this study did not suggest that the negative obstacles associated with the "proper" use of position or authority, were overcome by principals simply because that principal recognized its appropriate uses. Of the teachers that reported authority (position) as one means of influence used by their principals, 40% also identified negative outcomes such as resentment, anger, guilt, depression, intimidation, as a result of its use (Blase and Kirby, 1992).

Leadership can be partly defined as involving the way power is used in the process of influencing the actions of others (Krausz, 1986, p. 86). Certainly the leadership of the principal in building a positive organizational climate involves a significant use of both personal and position power. In studying effective principals, Blase and Kirby (1992) indicated that these principals positively used a combination of position and personal influence strategies. These principals were recognized by teachers as honest, optimistic, considerate, and highly visible in their schools. Teachers reported that these strategies had a positive impact on their thinking, attitudes, and behavior (Blase and Kirby, 1992).

Principals are in a position of leadership that affords them the opportunity to shape the climate of a school, and to change the attitudes, behaviors, goals, needs and even the values of staff. The perceptions teachers hold regarding the strategies their principal uses in influencing them toward those ends can affect their behavior in the organization. Consequently, how principals choose to use their power influences the quality of the teaching and learning climates existing in schools (Porter and Lemon, 1988).

Principal Behavior: Impact on Teachers

Hoy, Tarter, & Kottkamp (1991) found the leadership of the principal not only facilitated a climate of commitment and change within an organization but increased the

degree of trust within the school. Although not defined in terms of power, Tarter, Hoy and Bliss (1989) studied leadership characteristics of high school principals that facilitated teacher commitment to the school. They found that when principals were successful in matching the needs of the school with the needs of teachers, the teachers felt a sense of belonging to the school and were more likely to expend greater effort. They contended that the principal's leadership must create conditions such that teachers could achieve their personal goals best by directing their efforts toward the success of the enterprise.

Tarter, Hoy, and Bliss (1989) defined commitment in terms of attitude; not simply loyalty or compliance, but rather a whole-hearted support of organizational ventures and values. The manifestation of teacher commitment was seen in doing extra work, sharing the goals of the school, and developing pride in the school (Tarter, Hoy and Bliss, 1989).

In drawing from the research, Tarter, Hoy, and Bliss (1989) found there had been little systematic investigation of organizational commitment in schools. They pointed to research from organizations other than education in highlighting the importance of the concept. For example, in some organizations, highly committed individuals were found to perform better than less committed ones (Mowday, Porter & Dubin, 1974), and commitment was often more important than job satisfaction in predicting employee turnover (Koch and Steers, 1976; Porter et al., 1974; Angle & Perry, 1981). Both Schein (1970) and Steers (1975) proposed that commitment was an indicator of organizational effectiveness.

In studying teachers' perceptions of their principals' behavior, Tarter, Hoy and Bliss (1989) selected six important dimensions of school leadership research which could be contrasted as the manifestation of power bases. Supportive principal behavior: behavior that motivated teachers through constructive criticism and the example of hard work, and showed genuine concern for the professional welfare of teachers; Directive principal behavior: behavior that closely controlled teachers and rigidly dominated school activities

down to the smallest detail; Principal influence: behavior that demonstrated the principal's ability to deliver for subordinates while remaining relatively independent from superiors; Resource support: behavior that insured teachers could obtain sufficient classroom supplies; Initiating structure: behavior that was task and achievement oriented, standards of performance and expectations were clear; Consideration: behavior that was friendly, open, and collegial; genuine concern for harmonious interpersonal relations.

The results of this study supported the hypothesis that schools that were led by principals who provided structure, resources, consideration, useful influence, and professional support in an even-handed, non-controlling manner were places that elicited teacher commitment (Tarter, Hoy and Bliss, 1989). Principals who initiated structure (position power) as well as those who demonstrated consideration (personal power) in their behavior had committed faculties. Similarly, principals who provided supportive social relations and furnished resource support had committed faculties, but those who exhibited directive principal behavior (alone) did not (Tarter, Hoy and Bliss, 1989).

The Tarter, Hoy and Bliss (1989) findings that close supervision and rigid domination of subordinates were negatively related to commitment offers support for McGregor's (1957) argument that individuals could and would take greater responsibility toward organizational goals if organizational conditions encouraged such behavior.

Summary of Principals' Use of Power

In terms of the power bases principals use, research illustrates that principals exercise their power by influencing teachers' behavior in ways such as: positively affecting teacher satisfaction as a measure of school climate (Johnson, 1985); influencing teachers to greater efforts (Porter and Lemon, 1988); positively affecting the thinking, attitudes, self-

esteem, job satisfaction, commitment, and increased morale of teachers (Blase and Kirby, 1992); using praise as a strategy linking teachers to the principal's goal of promoting and reinforcing classroom performance (Blase and Kirby, 1992); increasing commitment as defined in terms of being whole-heartedly supportive of organizational venture and values (Tarter, Hoy and Bliss, 1989); doing extra work, sharing goals, and developing pride (Tarter, Hoy and Bliss, 1989).

Research on the principalship has widely described the characteristics principals display, or should display, in the role of instructional leader for the organization as a whole (Edmonds, 1979; Sergiovanni, 1984; Sizer, 1984; Arnn & Mangieri, 1988; and Roberts, 1989). Studies have examined the attitudes and traits of principals without paying attention to how they influence the outcome of schooling (Bridges, 1982). Bidwell (1965) and Weick (1976) stated that organizational research had suggested that schools were loosely linked organizations that provided limited means for principals to influence teachers' work.

Summary

Efficacy is generally defined as a person's belief or estimate that a given behavior will lead to certain outcomes and the conviction that he/she can successfully execute the behavior required to produce the outcomes (Bandura, 1977). Teacher efficacy is the way in which teachers view the general relationship between teaching and learning.

Principals, as leaders, hold positions of power in which they can influence their subordinates from a variety of perspectives, and according to Hillman (1986), self-efficacy can be learned. Some of the conditions surrounding teachers which principals' power bases can influence and which have been found to promote self-efficacy include: help individuals experience success, create opportunities (for teachers) to observe others experiencing success, use verbal persuasion and influence paired with support and modeling, provide

incentives for significant performances that enhance self-efficacy, provide meaningful inservice and evaluation (Bandura, 1977).

As instructional leaders, principals are in a position to use their power to promote teacher efficacy, a critical use of power since teacher efficacy is related to student learning (Armour, et al., 1976). The role the principal can play in influencing teachers' sense of efficacy is significant; it is here where a principal's influence on student learning may be apparent. The observation and exploration of any relationships between the perceived power bases of principals and teachers' perceived sense of efficacy, particularly at the high school level, calls for and is worthy of further investigation.

Chapter III

Research Methodology

Chapter three begins with a restatement of the purposes. Further, it describes the methodology the study encompassed in terms of population, instrumentation, data collection, and data analysis.

Restatement of Purposes

The purposes of this study were: to examine the sense of Personal Teaching Efficacy and Teaching Efficacy as perceived by high school teachers; to examine and describe the power bases used by high school principals as perceived by their teaching staff; and to investigate the relationships between the high school teachers' perceived sense of Personal Teaching Efficacy and Teaching Efficacy, and the teachers' perceptions of their principals' power bases. Figure 1 graphically depicts the relationships among the study's questions, variables, methods of data collection, and indicators.

RESEARCH QUESTION	VARIABLES	DATA COLLECTION METHOD	INDICATORS
1. Are there statistically significant and substantive relationships between the Personal Teaching Efficacy and Teaching Efficacy scores of high school teachers, as measured by high school teachers' responses to the Teacher Efficacy Scale, and controlling for the teacher variables of Gender, Years of Experience, and Education?	Perceived levels of Personal Teaching Efficacy and Teaching Efficacy of high school teachers in the Metropolitan Omaha Educational Consortium. Plus: Teacher Gender Teacher Experience Teacher level of Education	Survey of the certified teaching staff.	Teacher responses as scored on the Teacher Efficacy Scale.

Figure 1.

Relationships among questions, variables, data collection methods, and indicators

RESEARCH QUESTION	VARIABLES	DATA COLLECTION METHOD	INDICATORS
2. What are the configurations of the seven power bases used by principals: expert, informational, referent, coercive, legitimate, connection and reward, as measured by high school teachers' responses to the Power Perception Profile - Perception of Others?	Teacher perceptions of principals' use of the seven power bases: expert informational referent coercive legitimate connection reward	Survey of certified teaching staff.	Teacher responses as scored on the Power Perception Profile - Perception of Others.

(Relationships Continued)

RESEARCH QUESTION	VARIABLES	DATA COLLECTION METHOD	INDICATORS
3. Are there statistically significant and substantive differences in the seven power bases used by male and female principals: expert, informational, referent, coercive, legitimate, connection and reward, as measured by high school teachers' responses to the Power Perception Profile - Perception of Others?	Teacher perceptions of principals' use of the seven power bases: expert informational referent coercive legitimate connection reward	Survey of the certified teaching staff.	Teacher responses as scored on the Power Perception Profile - Perception of Others.

(Relationships Continued)

RESEARCH QUESTION	VARIABLES	DATA COLLECTION METHOD	INDICATORS
4. Are there statistically significant and substantive relationships between the Personal Teaching Efficacy and Teaching Efficacy scores of high school teachers, and the seven power bases principals are perceived to use: expert, informational, referent, coercive, legitimate, connection and reward, controlling for the teacher variables of Gender, Years of Experience, and Education?	A combination of Research Question 1 variables and Research Question 3 variables.	Survey of certified teaching staff.	Teacher responses as scored on the Teacher Efficacy Scale and the Power Perception Profile - Perception of Others.

(Relationships Continued)

Research Design

The design of this study encompassed a survey methodology and was cross-sectional as opposed to longitudinal. This design provided for the distribution of a set of questions to the sample population which provided data to the researcher from which generalizations could be formed and inferences could be made about the population (Fink & Kosecoff, 1985).

Central to this study was the question: Are there relationships between the two dimensions of teacher efficacy -- teacher perceived levels of Personal Teaching Efficacy and Teaching (pedagogical) Efficacy -- and the power bases teachers perceive principals use? The perceptions high school teachers had of principals' use of the seven power bases served as the independent variables. Teacher perceptions of Personal Teaching Efficacy and Teaching Efficacy were the dependent variables, with Teacher Gender, Teacher Years of Experience, and Teacher Level of Education serving as mediating variables. Figure 2 graphically represents the research design.

DEPENDENT VARIABLE =	INDEPENDENT VARIABLES +	MEDIATING VARIABLES
Teacher perceived sense of efficacy: Personal Teaching Efficacy Teaching Efficacy	Teachers' perception of Principals' use of seven power bases: expert informational referent coercive legitimate connection reward	Teacher: Gender Years experience Level of education

Figure 2.

A visual model of teachers' perception of principals' power bases: Connections to teacher sense of efficacy

Population

The sample population for this study was drawn from the high school teaching staffs of seven Midwestern public school districts collectively forming a network referred to as the Metropolitan Omaha Educational Consortium (M.O.E.C.). The purpose of this group is to collectively address the common strengths and concerns they share as metropolitan school districts.

An electronic search of the Nebraska Department of Education Web Site was conducted to compile a listing of addresses, telephone numbers, and names of principals and certified teaching staff in each building in the district high schools. This procedure provided a sample population of 17 high school principals and 500 certified teaching staff drawn from the M.O.E.C. high schools.

In order to obtain a representative sample, a stratified random sampling design was employed. Sixteen public high schools with certified teaching staffs numbering from 71 to 143 teachers per building made up the population from which the sample was drawn. A population sample of 32% of each high school, or 500 total teachers, including similar numbers of males and females, were surveyed. This design ensured that all districts were included and that similar numbers of male and females were represented in the sample.

Instrumentation

In order to investigate and analyze data bearing on the research questions, a supplemental demographic survey (Appendix A) has been included in the study. The teacher respondents provided information that allowed for the control of the following variables: Principal Gender, Teacher Gender, Teacher Years of Experience, and Teacher Level of Education.

According to Fink & Kosecoff (1985), when surveying theoretical concepts, it is often best to use an existing and tested survey form. Appendix B and C contain two survey instruments that formed the foundation for this study: Appendix B, The Teacher Efficacy Scale (Gibson & Dembo, 1984), and Appendix C, the Power Perception Profile - Perception of Others (PPP), developed by Hersey and Natemeyer (1979). Permission was obtained from Sherri Gibson for the use of the Teacher Efficacy Scale (Appendix D) in the study. Copies of the Power Perception Profile - Perception of Others were purchased from the Center for Leadership Studies, Escondido, California (Appendix E).

Teacher Efficacy Scale.

The Teacher Efficacy Scale in its original form (Gibson & Dembo, 1984) consisted of 30 items in Likert format. Each teacher respondent selected a number corresponding to his or her level of agreement (1 = strongly disagree to 6 = strongly agree) with each of the 30 statements.

Based upon factor analysis of the responses of teachers to these 30 questions, Gibson and Dembo (1984) found two distinguishable factors. Factor one described teachers' belief that they had the skills and abilities to bring about student learning. This factor was characterized by Gibson and Dembo as a teacher's sense of Personal Teaching Efficacy and was found to conform to Bandura's (1982) dimension of self-efficacy.

Factor two was described as representative of a teacher's sense of Teaching Efficacy. This factor referred to pedagogy and represented the general belief the teacher held about the relationship between teaching and learning. It included the belief that any teacher's ability to improve student learning was limited by such external factors as students' home environment, family background, and parental influence (Gibson and Dembo, 1984). Gibson and Dembo (1984) found this factor clearly corresponding to Bandura's (1977) outcome expectancy dimension.

Validity and reliability.

Sixteen of the original 30 items significantly loaded on the two factors emerging from the analysis. Within their validation, Gibson and Dembo (1984) found acceptable Cronbach's alpha coefficients of .78 for Factor one, .75 for Factor two, and .79 for the entire set of 16 items.

Teacher efficacy research has employed typically some combination of the 30 item teacher efficacy scale developed by Gibson and Dembo (1984) or the two items derived from the Rand (Berman & McLaughlin, 1977) study (Coladarci, 1992). The sixteen highest loading items resulting from Gibson and Dembo's (1984) factor analysis comprised the form of the Teacher Efficacy Scale that has been used to measure teacher efficacy in a number of studies at the elementary, middle, and high school levels. In providing further justification for use of this form of the instrument in the current study, Colardarci (1992) posits that much of what was known about teacher efficacy and its correlates has been derived from research based on the Rand items or Gibson and Dembo's (1984) Teacher Efficacy Scale.

Power Perception Profile - Perception of Self/Others.

The Power Perception Profile - Perception of Self/Others (PPP) was designed by Hersey and Natemeyer (1979) based upon French and Raven's (1959) taxonomy of five power bases: Expert, Referent, Legitimate, Reward, and Coercive power. To this foundation, Hersey and Natemeyer added two additional power bases in formulating their instrument: Information power, identified by Raven and Kruglanski (1970) and Connection power, which they identified.

The authors conceptualized power as a resource of influence to gain compliance of subordinates in order to achieve organizational goals. Hersey and Natemeyer designed the PPP to gather information about the uses of various types of power (1979).

Hersey and Natemeyer (1979) argued that "The purpose of the Power Perception Profile is to provide leaders with feedback on their power bases. The Power Perception Profile can be used to gather data in actual organizational settings or any learning environment" (p. 6). Hersey and Natemeyer characterized each of the seven power bases as follows:

1. Expert Power was based on the leader's possession of expertise, skill, and knowledge, which gained the respect of others. A leader who scored high on expert power was seen as possessing the expertise to facilitate the work behavior of others. Respect for the leader enabled him or her to influence the behavior of others.

2. Referent Power was based on a leader's personal traits. A leader that scored high in referent power was generally liked and admired by others because of personality. This liking for and identification with the leader influenced others.

3. Legitimate Power was based on the position held by the leader. The higher the position, the higher the legitimate power tended to be. A leader who scored high in legitimate power induced compliance from or influenced others because those influenced felt this person had the right, by virtue of position in the organization, to expect suggestions to be followed.

4. Reward Power was based on a leader's ability to provide rewards for other people. They believed their compliance would lead to gaining positive incentives such as pay, promotion, or recognition.

5. Coercive Power was based on fear. A leader that scored high in coercive power was seen as inducing compliance because failure to comply could lead to punishments such as undesirable work assignments, reprimands, or dismissals.

6. Connection Power was based on a leader's connections with influential or important persons inside or outside the organization. A leader who scored high on

connection power induced compliance because others aimed at gaining the favor or avoiding the disfavor of the powerful connection.

7. Information Power was based on a leader's possession of or access to information that was perceived as valuable to others. This power base influenced others because they needed this information or wanted to be "in on things."

The Power Perception Profile is divided into two parts, each with 21 questions: Part I Power Perception Profile - Perception of Self; Part II Power Perception Profile - Perception of Others. For the purposes of this study, only Part II Power Perception Profile - Perception of Others is pertinent because teachers' perceptions of their principals' power bases was the focus of this study.

The 21 questions on the Power Perception Profile - Perception of Others, have a forced choice format in which the respondents assigned three points within 21 pairs of statements identifying their reasons for compliance with the leader's requests. The statements reflected one of each of the seven power bases. The respondent allocated points for each alternative, based on their rank-ordered perception of why compliance was achieved

In the doctoral study A Validity and Reliability Study of the Power Perception Profile Instrument, Delaney (1980) outlined the following results:
Validity: A panel of experts was used to ascertain the content validity; the extent to which the test items covered a representative sample of behaviors. Overall the content was judged to be of moderate validity.

The content validity of each of the seven power bases was rated: Legitimate Power, very high; Expert Power, moderately high; Information Power, moderately high; Coercive Power, moderate; Connection Power, moderate; Reward Power, moderate; and Referent Power, low.

Reliability: Utilizing a test-retest procedure and employing the Spearman Brown Formula, Delaney (1980) found an overall reliability coefficient of .52 at the .001 significance level. Individual reliability measures included: Expert, $\underline{r}$ = .71; Connection, $\underline{r}$ = .56; Coercive, $\underline{r}$ = .53; Information, $\underline{r}$ = .34; Reward, $\underline{r}$ = .28; Legitimate, $\underline{r}$ = -.04; Referent, $\underline{r}$ = -.28.

Coercive, Connection, and Expert Power appeared to be reliable. Legitimate and Referent did not. Delaney argued that in terms of the level of acceptance for a human relations training instrument "The overall reliability coefficient of .52 and the trends suggested by five of the seven power base descriptors indicate the instrument is of value" (1980, p. 73). However, findings related to referent, legitimate, reward, and information base should be viewed with caution.

The Power Perception Profile has been extensively used in business and educational settings with consistent results. This consistency, paired with acceptable levels of reliability and validity, led to the choice of this instrument.

Data Collection

Prior to the distribution of the survey to the intended high schools, the researcher investigated each district's procedures for the administration of surveys to staff. Following an investigative phone call to ascertain each district's protocol, specific requirements to conduct research were met, and a letter requesting permission to conduct the study was sent to each of the superintendents or appropriate district personnel, describing the study, its purposes, and its design (Appendix F). Anonymity was assured.

As required by the University of Nebraska, Application for Non-Therapeutic Research was submitted by the researcher to the University's Institutional Review Board for the Protection of Human Research Subjects on November 4, 1996 (Appendix G).

Following expedited review, approval from the Institutional Review Board was received on November 11, 1996 (Appendix H).

Upon receipt of written approval at the district level, a letter was sent to each high school principal (Appendix I) providing documentation of approval from the district administration. This letter included district approval to conduct the study, a description of the purposes and design of the study, provisions for anonymity, and communication of the time frame and procedures for the administration of the instrument.

Following a telephone conversation or personal meeting with the building principal, at which time the researcher obtained building level approval for the study and ascertained the principal's preference for the distribution of the survey, the surveys were hand delivered by the researcher to each of the high schools. Although no special considerations of the survey's administration were requested, one of the principals volunteered to inform his or her staff about completing the survey through the faculty bulletin, one principal informed his or her staff at a faculty meeting, and another principal stated he would hand deliver the surveys to selected staff.

It should be noted that M.O.E.C. Includes 17 public high schools; this study involved 16. One high school principal declined to have the survey administered at his or her building due to an atmosphere of turmoil and disruption that had recently occurred at the school. The principal declined to have the staff subjected to "any additional external pressures the study might generate."

Self-addressed, stamped mailers were provided with each survey set to allow for the expedient return of the completed surveys. In addition, each survey set included a letter to the teacher (Appendix J) and a survey overview (Appendix K). The survey sets were hand delivered and received by a building contact person, generally the principal's secretary, who had been delegated to distribute the sets, usually through the internal mail system.

One week after the survey return date a follow-up letter (Appendix L) was sent to those teachers who had not yet returned their survey. Of the 500 teachers who had been part of the sample population, 300, or 60%, of the surveys were returned.

Data Analysis

The analysis of the data involved the following:

1. The administration of the survey was at a time that was convenient to each school within a time frame of four to six weeks. A stratified random sample of 500 male and female high school teachers in the M.O.E.C. were asked to complete the surveys. There was no survey response bias check because the staff surveys were anonymous, thus creating a condition in which it was not feasible to identify those not participating in the survey.

2. Principal Components Factor Analysis served to reduce and simplify teacher responses to the Teacher Efficacy Scale and the Power Perception Profile - Perception of Others.

3. Descriptive statistics, mean scores and standard deviations, describing the extent the seven power bases were perceived to be used by principals were calculated.

4. Cronbach's effect size estimates for alpha coefficients were performed to confirm the reliability and coherence of teacher responses to the Teacher Efficacy Scale.

5. ANCOVA tests of significance were performed with Personal Teaching Efficacy and Teaching Efficacy, to describe any significant interactions among Teacher Education, Teacher Gender, and Teacher Experience. Chi-Square and tests of discriminant analysis were performed to describe any significant interactions between these variables and three efficacy definitions.

6. T-tests were calculated in describing the relationships between the Personal Teaching Efficacy and Teaching Efficacy of defined efficacy groups, and the seven power bases principals were perceived to use by these different groups.

7. A series of multiple regression tests were conducted to further examine the relationships between the Personal Teaching Efficacy scores and Teaching Efficacy scores of groups of teachers and the power bases principals were perceived to use, controlling for Teacher Gender, Teacher Years of Experience, and Teacher Level of Education.

8. Appropriate effect size measures were applied to the analyses to assess substantive differences and relationships.

Limitations

Limitations of this study included:

1. Fink and Kosecoff (1985) noted that within the survey, one has to define the attitude, belief, or idea being measured. A limitation of this study lied in the potential lack of a common understanding of respondents to the definitions used in the survey instruments.

2. Although all of the districts in the M.O.E.C. are within the same metropolitan area, much of the communication was by telephone or mail. Personal contacts which might have resulted in providing clarification were infrequent.

3. Although Fink and Kosecoff (1985) noted that "generalizable" surveys conducted with rigor serve a useful purpose, a potential limitation in generalizing from the districts comprising the M.O.E.C. to other districts was possible.

Summary of the Methods

A sample of male and female high school teachers was drawn from the high school teaching staffs of seven Midwestern public school districts. These districts form a network referred to as the Metropolitan Omaha Educational Consortium (M.O.E.C.). This survey described teachers' perceptions of their Personal Teaching Efficacy and Teaching Efficacy, and their perceptions of the power bases their principals used in their leadership roles.

Personal Teaching Efficacy and Teaching Efficacy served as the dependent variables with the seven power bases: expert, informational, referent, coercive, legitimate, connection, and reward serving as independent variables. Other mediating variables in this study were Teacher Gender, Teacher Years of Experience, and Teacher Level of Education.

S.P.S.S. (Statistical Package for the Social Sciences) was the computer software of choice for statistical analysis. Factor analyses, analysis of covariance, t-tests, Chi-Square, tests of discriminant analysis, multiple regression, effect size estimates, and related statistics were used in the statistical analysis.

Chapter IV

Presentation And Analysis of Data

In this chapter, the findings of the study are presented, discussed, and summarized.

The purposes of this study were to assess the perceived sense of high school teacher efficacy, to assess the power bases of principals as perceived by high school teachers, and to investigate the relationships between high school teachers' perceived sense of efficacy and their perceptions of principals' use of power bases.

The study posed four research questions:

1. Are there statistically significant and substantive relationships between the Personal Teaching Efficacy and Teaching Efficacy scores of high school teachers, as measured by high school teachers' responses to the Teacher Efficacy Scale, and controlling for the teacher variables of Gender, Years of Experience, and Education?

2. What are the levels of use and configurations of the seven different power bases used by principals: expert, informational, referent, coercive, legitimate, connection, and reward, as measured by high school teachers' responses to the Power Perception Profile Perception of Others?

3. Are there statistically significant and substantive differences in the seven power bases used by male and female principals: expert, informational, referent, coercive, legitimate, connection, and reward, as measured by high school teachers' responses to the Power Perception Profile - Perception of Others?

4. Are there statistically significant and substantive relationships between the Personal Teaching Efficacy and Teaching Efficacy scores of high school teachers, and the seven power bases principals are perceived to use: expert, informational, referent, coercive,

legitimate, connection and reward, controlling for the teacher variables of Gender, Years of Experience, and Education?

The results of the investigation described the relationships between the Personal Teaching Efficacy and Teaching Efficacy scores of high school teachers, teachers' perceptions of the seven different power bases used by high school principals, and the relationships between the Personal Teaching Efficacy and Teaching Efficacy scores of high school teachers and the seven power bases that principals were perceived to use.

Subjects

The sample population for this study was drawn from the high school teaching and administrative staffs of seven Midwestern public school districts collectively forming a network referred to as the Metropolitan Omaha Educational Consortium (M.O.E.C.). A random sampling design was employed. Sixteen of the public high schools, with certified teaching staffs numbering from 71 to 143 teachers per building, made up the population from which the sample was drawn.

The sample of 32% of each high school's staff (500 total teachers) was stratified so as to represent similar numbers of males and females and to include all districts. M.O.E.C. encompasses 17 public high schools, 16 were included in this study. One high school principal declined to have the survey administered at his building.

Of the 500 high school teachers surveyed, 300 (60%) responded. The teacher respondents provided supplemental information (Appendix A) that described each teacher's Gender, Years of Experience, and Level of Education attained. As shown in Table I, the total sample included 46% males and 54% females. The mean years of teaching experience was 18.3, with 35% of the teachers holding a Bachelor's Degree and 65% a Master's Degree or higher.

Table I

Characteristics of Teacher Respondents, N=300

Gender

	n	%
Male	139	46
Female	161	54

Experience

Years	n	%
1-7	52	17.3
8-13	54	18.0
14-19	48	16.0
20-24	48	16.0
25-27	49	16.3
28 or more	49	16.3
Mean experience		18.3 years

Education Level

	n	%
Bachelor of Arts or Sciences Degree	106	35
Master of Arts or Sciences Degree or higher	194	65

The teachers provided supplemental information (Appendix A) that also identified the Gender of the principal. There were 15 male principals and 1 female within the sample high schools (see Table II).

Table II

Description of High School Principals, N=16

Gender	n	%
Male	15	94
Female	1	6

Results

The first research question examined teachers' perceived levels of Personal Teaching Efficacy and Teaching Efficacy and interactions with Teacher Gender, Teacher Experience, and Teacher Education.

Findings Describing the Relationships Between the Personal Teaching Efficacy and Teaching Efficacy Scores of High School Teachers

Are there statistically significant and substantive relationships between the Personal Teaching Efficacy and Teaching Efficacy scores of high school teachers? The initial examination of these two teacher efficacy constructs involved data reduction through factor analysis of teachers' responses to the Teacher Efficacy Scale (Appendix B). This procedure attempted to reduce the set of variables into two or three underlying factors (Kim & Mueller, 1978, p. 5).

Principal components factor analysis provided the method to examine the entire set of 16 variables obtained from the Teacher Efficacy Scale. This procedure initially extracted four factors with eigenvalues greater than or equal to 1.0. The first two of these factors, which accounted for 29% of the variance, were similar to the two found by Gibson and Dembo (1984). Following Gibson and Dembo, it was concluded that there were two different underlying dimensions of teacher efficacy and that a certain set of variables belonged to one dimension while another set belonged to the second.

As in Gibson and Dembo's analysis (1984, p. 571), both oblique and orthogonal rotations were conducted after the initial extraction to simplify item loadings and factor correlations. Upon entering all 16 items, with extraction set at two variables, an oblique rotation confirmed that the two extracted Factors had a very low negative correlation at

r = -.11. Thus the varimax rotation, as a final solution, simplified and clearly reduced the 16 items to two Factors (See Table III) similar to Gibson and Dembo's Personal Teaching Efficacy and Teaching Efficacy.

Table III

Item Factor Loadings With Varimax Rotation: Teacher Efficacy Scale

Variables	Factor 1	Factor 2
H	-.06	.64
I	-.00	.59
J	-.02	.61
N	-.03	.77
Q	.32	.48
T	.39	-.47
V	-.05	.52
G	.63	.07
K	.59	.00
L	.69	-.09
M	.52	-.34
O	.69	-.07
P	.56	-.02
R	.50	-.00
S	.52	-.07
U	.53	.05

An analysis of internal consistency reliability was also conducted with the 16 items. This analysis described the internal consistency of those items loading highest on Factor 1, now described as Personal Teaching Efficacy, those items loading highest on Factor 2,

now described as Teaching Efficacy, and all 16 items, or Overall Teacher Efficacy (see Table IV).

Table IV

Reliability Coefficients for the Teacher Efficacy Scale

Factor	Description	Items	alpha*
1	Personal teaching efficacy	G,K,L,M,O,P,R,S,U	.79
2	Teaching efficacy	H,I,J,N,Q,T,V	.55
-	Overall teacher efficacy	All 16	.63

*Note. Cronbach's effect size estimates for alpha coefficients: .79 = moderately high; .55 = moderately low; .63 = moderate.

The seven items loading highest on Factor 2, Teaching Efficacy, showed a moderately low alpha, r = .55. Recognizing that item "T" loaded at less than .40 on Factor 1 and negatively, -.47 on Factor 2, the item was removed from the analysis. A final confirmatory factor analysis with a varimax orthogonal rotation as the final solution was conducted. Table V depicts this solution.

Table V

Item Factor Loadings of 15 Items With Varimax Rotation: Teacher Efficacy Scale

Variables	Factor 1	Factor 2
G	.58	.05
K	.52	-.00
L	.66	-.09
M	.47	-.27
O	.67	-.08
P	.49	-.03
R	.42	-.01
S	.44	-.05
U	.45	.05
H	-.09	.56
I	-.02	.48
J	-.05	.52
N	-.04	.74
Q	.26	.40
V	-.07	.42

The removal of item "T" from the final solution improved the Cronbach's alpha for Teaching Efficacy from $\underline{r}$ = .55 to $\underline{r}$ = .68 and slightly improved the Cronbach's alpha from $\underline{r}$ = .63 for 16 items to $\underline{r}$ = .64 for the final 15 items used (see Table VI).

Table VI

Reliability Coefficients for 15 Items of the Teacher Efficacy Scale

Factor	Description	Items	alpha*
1	Personal teaching efficacy	G,K,L,M,O,P,R,S,U	.79
2	Teaching efficacy	H,I,J,N,Q,V	.68
-	Overall teacher efficacy	All 15	.64

*Note. Cronbach's effect size estimates for alpha coefficients: .79 = moderately high; .64 = moderate.

The item factor loadings shown in Table V (see above) provided the basis for the computing and saving of factor scores for Factor 1 and Factor 2. In addition, an Overall Teacher Efficacy score was computed as the difference between each respondent's Personal Teaching Efficacy factor score and Teaching Efficacy factor score, that is, Personal Teaching Efficacy scores minus Teaching Efficacy scores. With the exception of the one item which was not part of the solution (see above) in Table V, Factor 1 loaded highest on those items best described as Personal Teaching Efficacy (Gibson & Dembo, 1984). "This Factor corresponded to Bandura's (1977) 'self-efficacy dimension' and reflected the teacher's sense of personal responsibility in student learning; the belief that one has the skills and abilities to bring about student learning" (p. 573).

Factor 2 loaded highest on those items best described as Teaching (pedagogy) Efficacy and corresponded clearly to Bandura's (1977) "outcome expectancy dimension." This factor represented the belief that any teacher's ability to bring about change was significantly limited by factors external to the teacher, such as students' home environment, family background, and parental influences (Gibson & Dembo, 1984).

Based in part on interpretations (described above) offered by Bandura (1977) and Gibson and Dembo (1984), teacher efficacy was defined in this study as a combination of Personal Teaching Efficacy factor scores and Teaching Efficacy factor scores. Table VII summarizes the Personal Teaching Efficacy factor scores, Teaching Efficacy factor scores, and Overall Teacher Efficacy scores for the 300 respondents who provided the basis for this study.

Table VII

Sample Means and Standard Deviations of Efficacy Factor Scores, N=300

Factor score	M	SD	Min.	Max.
Personal teaching efficacy	.00	.89	-3.47	2.24
Teaching efficacy	.00	.86	-2.48	2.17
Overall teacher efficacy	.00	1.26	-4.36	4.14

Personal Teaching Efficacy factor scores represented respondents' perception that they did, or did not, possess the teaching skills and abilities required to bring about student learning (Gibson & Dembo, 1984). High Personal Teaching Efficacy scores represented a strong sense of possessing these skills and abilities.

Teaching Efficacy factor scores represented the belief that any teachers' ability to bring about change is, or is not, limited by factors external to the teacher, such as the students' home environment, family background, and parental influences (Gibson & Dembo, 1984). Low Teaching Efficacy scores were indicative of a perception that the teacher's ability to bring about a change in student learning is not limited by these factors.

ANCOVA tests of significance were performed predicting Personal Teaching Efficacy for all respondents by Teacher Education, Teacher Gender, and Teacher Experience with the covariate Teaching Efficacy. The ANCOVA demonstrated that none of the three independent variables -- Teacher Education, Teacher Gender, or Teacher Experience -- had a significant effect on Personal Teaching Efficacy. Table VIII also shows there was no significant interaction between Teacher Education and Teacher Gender, Teacher Education and Teacher Experience, or Teacher Gender and Teacher Experience in accounting for Personal Teaching Efficacy and controlling for the covariate Teaching Efficacy. There was also no significant three-way interaction between Teacher Education, Teacher Gender, and Teacher Experience in accounting for Personal Teaching Efficacy and controlling for the covariate Teaching Efficacy.

Table VIII

Summary Results of Analysis of Covariance Predicting Personal Teaching Efficacy, N = 298*

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig of F
Covariates	.112	1	.112	.140	.709
TEACHING EFFICACY	.112	1	.112	.140	.709
Main Effects	2.693	7	.385	.482	.848
TEACHER EDUCATION	.036	1	.036	.045	.833
TEACHER GENDER	.215	1	.215	.269	.604
TEACHER EXPERIENCE	2.472	5	.494	.619	.685
2-Way Interactions	6.283	11	.571	.715	.724
TCH.EDUC TCH.GEND	.036	1	.036	.045	.832
TCH.EDUC TCH.EXPER	3.189	5	.638	.799	.551
TCH.GEND TCH.EXPER	2.628	5	.526	.658	.655
3-Way Interactions	5.330	5	1.066	1.335	.250
TCH.EDUC TCH.GEND TCH.EXPER	5.330	5	1.066	1.035	.250
EXPLAINED	17.835	24	.743	.931	.560
RESIDUAL	218.006	273	.799		

*300 cases processed, 2 missing.

Table IX shows the results of ANCOVA tests of significance performed for the prediction of Teaching Efficacy for all respondents by Teacher Education, Teacher Gender, and Teacher Experience with the covariate Personal Teaching Efficacy. This ANCOVA demonstrated that there was a statistically significant interaction, $p = < .05$, between the two-way interaction of Teacher Education and Teacher Experience with regard to accounting for Teaching Efficacy.

Table IX

Summary Results of Analysis of Covariance Predicting Teaching Efficacy , N = 298*

Source of Variation	Sum of	DF	Mean Square	F	Sig	d*
Covariates	.100	1	.100	.140	.709	
PERSONAL TEACHING EFFICACY	.100	1	.100	.140	.709	-
Main Effects	4.044	7	.578	.807	.582	
TEACHER EDUCATION	1.014	1	1.014	1.415	.235	-
TEACHER GENDER	.700	1	.700	.977	.324	-
TEACHER EXPERIENCE	3.652	5	.730	1.020	.406	-
2-Way Interactions	9.942	11	.904	1.262	.247	
TCH.EDUC TCH.GEND	.005	1	.005	.007	.932	-
TCH.EDUC TCH.EXPER	8.284	5	1.657	2.313	.044	.7
TCH.GEND TCH.EXPER	2.298	5	.460	.642	.668	-
3-Way Interactions	1.730	5	.346	.483	.789	
TCH.EDUC TCH.GEND TCH.EXPER	1.730	5	.346	.483	.789	-
EXPLAINED	24.961	24	1.040	1.452	.083	
RESIDUAL	195.563	273	.716			

*Note. Cronbach's effect size estimates: .2= small; .5 = medium; .8 or more = large.
Teacher Experience: Recoded (1-6)
300 cases processed, 2 missing. Significance at < .05 or better.

Research question two examined the use and configurations of the power bases of principals.

Findings Related to the Levels of Use and Configurations of the Different Power Bases Teachers Perceive Being Used by Principals

The second research question examined the levels of use and configurations of the different power bases teachers perceived were used by high school principals. Based on the power base scores provided by the Power Perception Profile - Perception of Others (Appendix C), expert power was perceived to be the power base used most by principals. Coercive power and connection power were perceived to be least used by principals. Table X rank orders the tabulated power base scores as generated by the Power Perception Profile - Perception of Others.

Table X

Rank Ordered Means and Standard Deviations of Principal Power Base Scores, N=286

Scores	M	SD	Min.	Max.
Expert power	11.45	3.59	.00	18.00
Legitimate power	10.64	2.66	3.00	18.00
Referent power	10.20	4.42	.00	20.00
Information power	9.93	2.76	.00	16.00
Reward power	8.34	2.68	.00	17.00
Coercive power	6.35	4.33	.00	17.00
Connection power	6.08	2.84	.00	14.00

In order to reduce the number of variables, scores were factor analyzed using the principal components approach.This procedure initially extracted three Factors with eigenvalues greater than or equal to 1.0. In this initial solution, all power scores loaded heavily on three factors which accounted for 81% of the internal covariation (see Table XI).

Table XI

Factor Loadings: Power Perception Profile - Perception of Others

Scores	Factor 1	Factor 2	Factor 3
Connection power	.19	.12	.97
Coercive power	.93	-.09	-.09
Expert power	-.89	-.05	.06
Information power	-.11	.81	-.19
Legitimate power	.06	.81	-.26
Referent power	-.64	-.63	-.16
Reward power	.61	-.55	-.26

In this initial analysis, coercive and reward power loaded positively (.93 and .61 respectively) on Factor 1, and expert and referent power loaded negatively (-.89 and -.64 respectively). This led to a second factor analysis of these four power variables (that is, coercive, reward, expert, and referent) which was performed to ascertain whether the power bases could be further clarified.

The second factor analysis with coercive power, reward power, expert power, and referent power entered did not extract any additional factors. The loadings for Factor 1, described as Perceived High or Low Coercive - Reward Power/Low or High Expert - Referent Power, are shown in Table XII.

Table XII

Factor Loadings of Perceived High or Low Coercive - Reward Power/Low or High Expert - Referent Power

Variable	Factor 1*
Coercive power	.93
Reward power	.61
Expert power	-.89
Referent power	-.63

* Note: This factor primarily reflects Coercive and Expert Power, and also reflects Reward and Referent Power.

A second factor analysis of the two variables loading heaviest on Factor 2 resulted in no additional data reduction. Factor 2 was described as Perceived High or Low Legitimate-Information Power factor score (see Table XIII).

Table XIII

Factor Loadings of Perceived High or Low Legitimate Power - Information Power

Variable	Factor 2
Legitimate power	.81
Information power	.81

Connection Power scores loaded in the initial extraction at .97 on Factor 3 indicating no further data reduction could be obtained (see Table X). Based on the single item factor loading of .97, Connection Power scores were used in further analyses.

Thus, following the procedures described above, the seven power base scores (coercive power, reward power, expert power, referent power, legitimate power, information power, and connection power) were reduced to three factors which accounted for 81% of the internal covariance in responses to the Power Perception Profile - Perceptions of Others. These scores respectively involved: Perceived High or Low Coercive - Reward Power/Low or High Expert - Referent Power, Perceived High or Low Legitimate - Information Power, and Perceived Connection Power.

Research question three sought to describe any differences between male and female principals' use and configurations of power bases.

Findings Related to Observed Differences in the Levels of Use and Configurations of Power Bases Used by Male and Female Principals

The third research question in this study proposed to examine the statistically significant and substantive differences in the power bases used by male and female principals as measured by high school teachers' responses to the Power Perception Profile-Other. The results of this study included 15 male principals and only one female principal. The disparity in the number of male and female principals was too great to obtain valid comparisons.

Question four in the study described the relationships between teacher efficacy and principals' power bases.

Findings Describing the Relationships Between the Personal Teaching Efficacy and Teaching Efficacy Scores of High School Teachers, and the Power Bases Principals are Perceived to Use

Personal Teaching Efficacy factor scores represented respondents' perceptions that they did, or did not, possess the teaching skills and abilities required to bring about student learning (Gibson & Dembo, 1984). High Personal Teaching Efficacy scores represented a strong sense of possessing these skills and abilities.

Teaching Efficacy factor scores represented the belief that any teacher's ability to bring about change is, or is not, limited by factors external to the teacher, such as students' home environment, family background, and parental influences (Gibson & Dembo, 1984). Low Teaching Efficacy scores were indicative of a perception that the teacher's ability to bring about a change in student learning was not limited by these factors.

To better understand the perceived levels of teacher efficacy in the study, three definitions of efficacy scores were examined. The first, relatively broad definition of teacher efficacy was based on Personal Teaching Efficacy and Teaching Efficacy scores either above or below the group mean. Figure 3 describes this definition which includes two groups of teachers: Fully Efficacious or Fully Inefficacious.

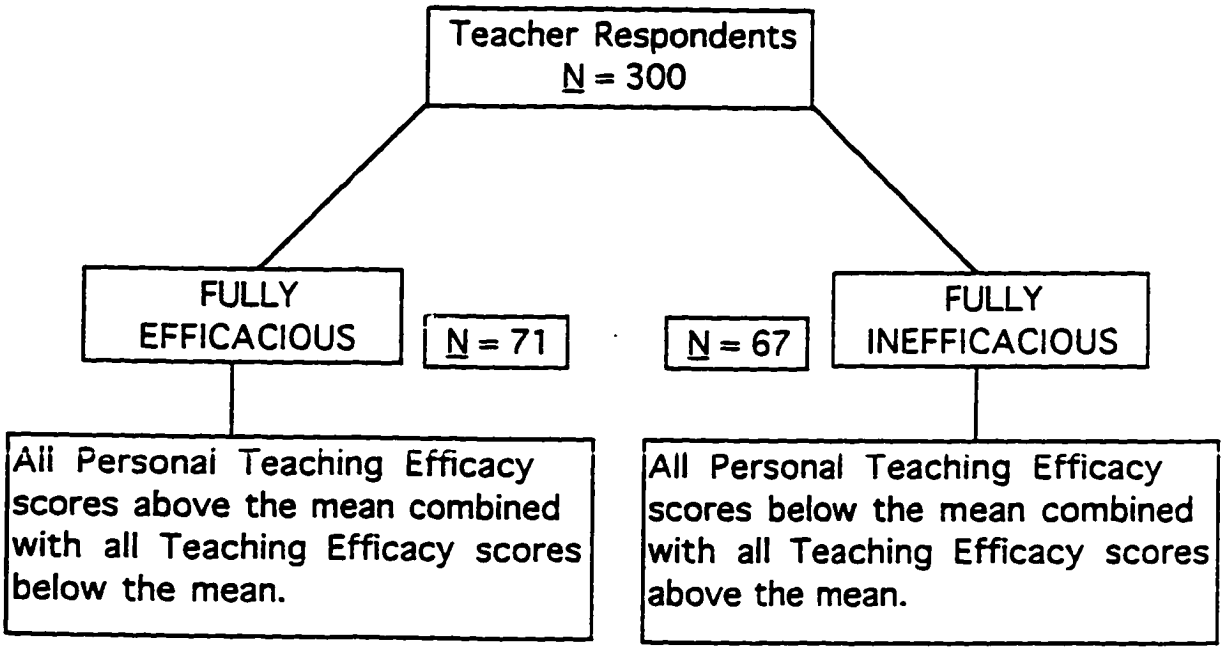

Figure 3.

Efficacy definition including all respondents: Perceived fully efficacious or fully inefficacious.

Fully Efficacious.

Personal Teaching Efficacy scores above the mean of .00 were combined with Teaching Efficacy scores below the mean of .00. From this definition, 71 of the 300 teachers responding were identified, and will be referred to herein as "Fully Efficacious." Table XIV, as an initial exploration, describes Fully Efficacious teachers.

Table XIV

Means and Standard Deviations of Fully Efficacious Teachers, N=71

Factor score	M	SD	Min.	Max.
Personal teaching efficacy	.76	.54	.01	2.24
Teaching efficacy	-.83	.51	-1.98	-.01
Overall teacher efficacy	1.58	.83	.13	4.14

Low Personal Teaching Efficacy scores were indicative of those teachers who perceived they did not possess the teaching skills and abilities to bring about student learning (Gibson & Dembo, 1984). Low Personal Teaching Efficacy scores represented a low sense of teacher efficacy. High Teaching Efficacy scores were indicative of the perception that the teacher's ability to bring about change was limited by factors external to the teacher, such as students' home environment, family background, and parental influences (Gibson & Dembo, 1984). High Teaching Efficacy scores were indicative of a teacher with a low sense of teacher efficacy.

Fully Inefficacious.

Personal Teaching Efficacy scores below the mean of .00 were combined with Teaching Efficacy scores above the mean of .00. From this definition, 67 of the 300 teachers responding were identified, and will be referred to herein as "Fully Inefficacious." Table XV describes Fully Inefficacious teachers.

Table XV

Means and Standard Deviations of Fully Inefficacious Teachers, N=67

Factor score	M	SD	Min.	Max.
Personal teaching efficacy	-.71	.55	-2.43	-.00
Teaching efficacy	.66	.48	.01	2.17
Overall teacher efficacy	-1.37	.77	-4.36	-.30

The Fully Efficacious group of teachers included 35% males and 65% females. Thirty percent held a Bachelor of Arts or Sciences degree only, with 70% holding a Master of Arts or Sciences degree or higher. The 67 teachers in the Fully Inefficacious group included 54% males and 46% females. Thirty-three percent of these teachers had a Bachelor of Arts or Sciences degree only, while 67% had attained a Master of Arts or Sciences degree or higher.

Because of the observed differences between the percentage of males and females in the Fully Efficacious and Fully Inefficacious groups, Chi-Square tests were conducted for Teacher Gender. These calculations described reliable differences ($p < .03$) between the groups for Teacher Gender and a small ($d = .3$) effect size.

The mean years of Teaching Experience for Fully Efficacious teachers was 17.8 years as compared to the mean Teaching Experience of 20.4 years for the Fully Inefficacious Sense of Efficacy group. For the 71 teachers in the high group, $\underline{M}$ = .76 and $\underline{M}$ = -.83 for Personal Teaching Efficacy and Teaching Efficacy, as compared to the 67 teachers in the low group, $\underline{M}$ = -.71 for Personal Teaching Efficacy and $\underline{M}$ = .66 for Teaching Efficacy, respectively (see Table XVI).

Table XVI

Descriptive Data for Teachers Described as Fully Inefficacious or Fully Efficacious

Efficacy Group	% Male	% Female	% BA	% MA or Higher	Years Experience		Personal Teaching Efficacy		Teaching Efficacy		Overall Teacher Efficacy		N
					M	SD	M	SD	M	SD	M	SD	
Fully Inefficacious	54	46	33	67	20.4	9.6	-.71	.55	.66	.48	-1.37	.77	67
Fully Efficacious	35	65	30	70	17.8	8.5	.76	.54	-.83	.51	1.58	.83	71

T-tests were calculated for Teacher Gender, Teacher Education, Teacher Experience, and the interaction of Teacher Education with Teacher Experience variable (Nexed), between the means of the Fully Inefficacious group and the Fully Efficacious group. Effect sizes, Cohen's d, were calculated to determine substantive differences.

Table XVII demonstrates that differences at the .05 level of significance or better were observed between the means of the interaction-term variable: Teacher Education times Teacher Experience (Nexed) for the two groups and Teacher Gender. Teacher Experience and Teacher Education were not independently significant at $p = < .05$ or better, but the interaction-term was significant at $p < .01$. Teacher Gender differences between the two groups were significant at $p = .03$, and supports the Chi-Square analysis discussed above. In terms of substantive differences, effect sizes were estimated as medium for Teacher Education times Teacher Experience (Nexed), slightly larger than small for Teacher Experience, slightly less than medium for Teacher Gender, and less than small for Teacher Education.

Table XVII

Summary of T-tests Between Fully Inefficacious or Fully Efficacious Teachers

	Inefficacious n = 67		Efficacious n = 71				
Variable	M	SD	M	SD	t	p	d*
Teacher Experience	20.4	9.6	17.8	8.5	1.68	.10	.3
Nexed	1.22	.42	1.07	.26	2.57	.01	.5
Teacher Gender	1.50	.50	1.65	.48	-2.21	.03	.4
Teacher Education	1.67	.47	1.70	.46	-.41	.68	.1

*Note. Conventional estimates of effect size magnitude for Cohen's d are as follows: .2 = small; .5 = medium; .8 or more = large. Significance at < .05 or better.

Teacher Education: 1 = Bachelors Degree; 2 = Masters or Higher.

Nexed: Experience recoded (1, 2) * Education (1, 2).

To further refine the prediction of membership in either the Fully Inefficacious group or Fully Efficacious group, tests of discriminant analysis were performed as a means of describing the predicting power of Teacher Gender, Teacher Education, Teacher Experience, and the interaction of Experience with Education variable (Nexed). Upon entering these four variables in the analysis, 66.2% of the Fully Efficacious membership and 56.7% of the Fully Inefficacious group membership was predicted. For these groups, the prediction was not appreciably improved by the subsequent entering of various combinations of the variables in the analysis.

Thus, in order to develop and refine a practical description of teacher efficacy, this study constructed a definition of teacher efficacy based on a combination of Personal Teaching Efficacy scores and Teaching Efficacy scores that were both greater or both less than the mean of .00.

High-Percentile Sense of Efficacy and Low-Percentile Sense of Efficacy groups.

Teachers with a "High - Percentile Sense of Efficacy" were described as those whose Personal Teaching Efficacy scores fell within the top forty percentile of all scores and whose Teaching Efficacy scores fell within the bottom forty percentile of all scores. Forty-nine teachers were included within the High - Percentile Sense of Efficacy group. Teachers within the group described as "Low - Percentile Sense of Efficacy," were those teachers whose Personal Teaching Efficacy scores fell within the bottom forty percentile of all scores and whose Teaching Efficacy fell within the top forty percentile of all scores. Thirty-nine teachers were included in this Low - Percentile Sense of Efficacy group. These parameters represented a second definition of perceived teacher efficacy and served as the comparison group in the study.

Figure 4 represents the identification of this second definition of teacher efficacy: High - Percentile Sense of Efficacy or Low - Percentile Sense of Efficacy. This definition of perceived efficacy was developed as a basis of comparisons from which generalizations could be formed.

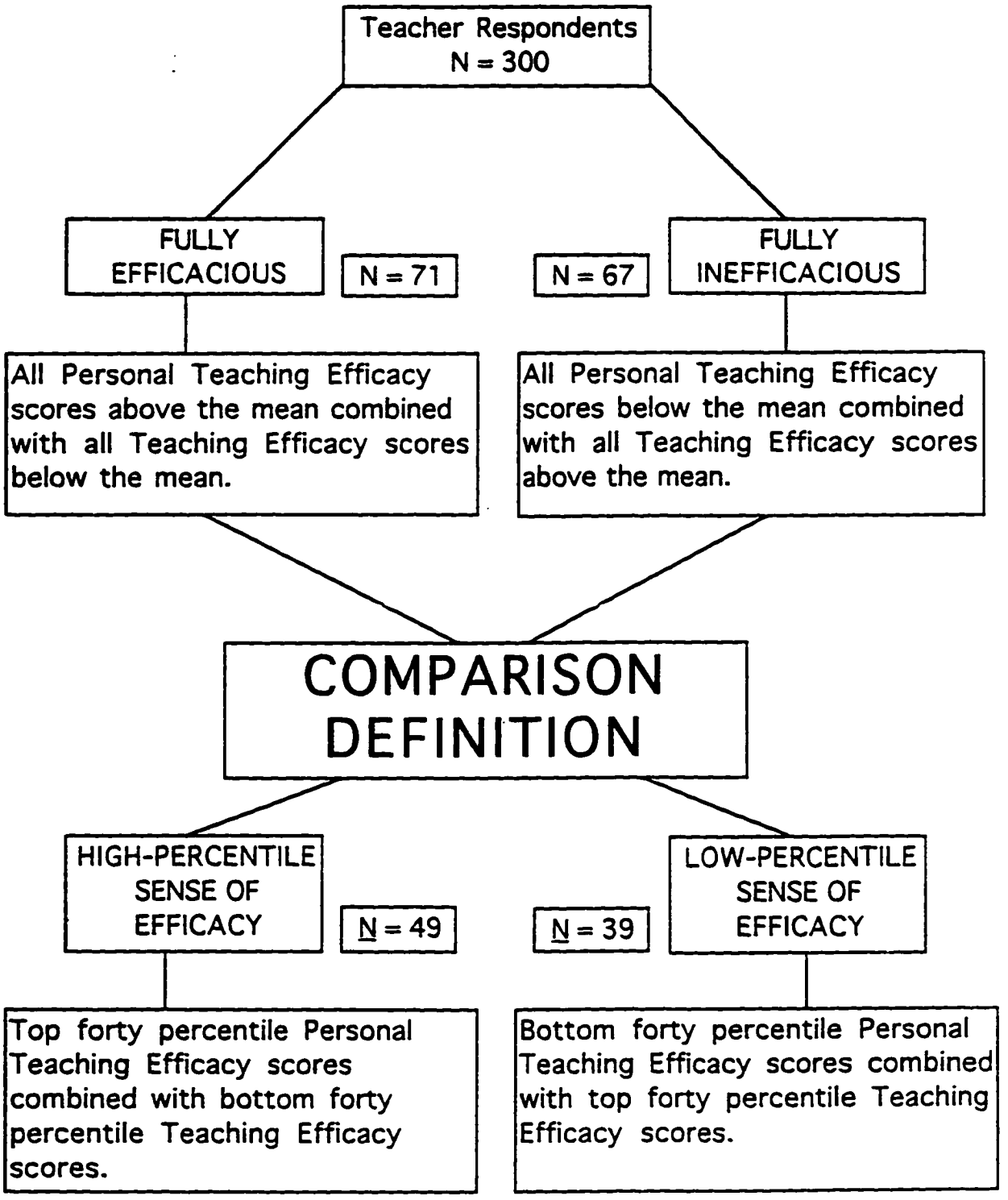

Figure 4.
Development of comparison efficacy definition: High-Percentile Sense of Efficacy group and Low-Percentile Sense of Efficacy group

The High - Percentile Sense of Efficacy group included 33% males and 67% females. Thirty-three percent of this group of teachers held a Bachelor of Arts or Sciences degree only, with 67% holding a Master of Arts or Sciences degree or higher. The 39 teachers in the Low - Percentile Sense of Efficacy group included 49% males and 51% females. Thirty-six percent of these teachers had a Bachelor of Arts or Sciences degree only, while 64% had attained a Master of Arts or Sciences degree or higher.

Because of observed differences between the percentage of males and females in the High - Percentile Sense of Efficacy group, Chi-Square tests were conducted for Teacher Gender. These calculations described no statistically reliable differences for Teacher Gender and a small ($\underline{d}$ = .3) effect size.

The mean years of Teaching Experience for those teachers with a High - Percentile Sense of Efficacy was 16.8 years as compared to the mean Teaching Experience of 19.3 years for the Low - Percentile Sense of Efficacy group. For the 49 teachers in the high group, $\underline{M}$ = .96 and $\underline{M}$ = -.94 for Personal Teaching Efficacy and Teaching Efficacy, as compared to the 39 teachers in the low group, $\underline{M}$ = -.86 for Personal Teaching Efficacy and $\underline{M}$ = .84 for Teaching Efficacy, respectively (see Table XVIII).

Table XVIII

Descriptive Data for Teachers With a Low - Percentile Sense of Efficacy or High - Percentile Sense of Efficacy

Efficacy Group	% Male	% Female	% BA	% MA or Higher	Years Experience		Personal Teaching Efficacy		Teaching Efficacy		Overall Teacher Efficacy		N
					M	SD	M	SD	M	SD	M	SD	
Low - percentile sense of efficacy	49	51	36	64	19.3	9.9	-.86	.57	.84	.45	-1.70	.80	39
High - percentile sense of efficacy	33	67	33	67	16.8	9.0	.96	.49	-.94	.45	1.90	.72	49

T-tests were calculated for Teacher Education, Teacher Experience, and the interaction of Teacher Education with Teacher Experience variable (Nexed) between the means of the Low - Percentile Sense of Efficacy group and the High - Percentile Sense of Efficacy group. Effect sizes (Cohen's d) were calculated to determine substantive differences.

Table XIX demonstrates that differences at the .05 level of significance or better were observed between the means of the interaction-term variable: Teacher Education times Teacher Experience (Nexed) for the two groups. Teacher Experience and Teacher Education were not statistically significant at p = < .05 or better. Effect sizes were estimated at slightly less than medium for Teacher Education times Teacher Experience (Nexed), slightly larger than small for Teacher Experience, and less than small for Teacher Education.

Table XIX

Summary of T-tests Between Teachers With a Low-Percentile Sense of Efficacy or High-Percentile Sense of Efficacy

	Low-Percentile n = 39		High-Percentile n = 49				
Variable	M	SD	M	SD	t	p	d*
Teacher Experience	19.3	9.9	16.8	9.0	1.24	.21	.3
Nexed	1.21	.41	1.06	.24	2.05	.04	.4
Teacher Education	1.64	.49	1.68	.48	-.31	.75	.1

*Note. Conventional estimates of effect size magnitude for Cohen's d are as follows: .2 = small; .5 = medium; .8 or more = large. Significance at < .05 or better.
Teacher Education: 1 = Bachelors Degree; 2 = Masters or Higher.
Nexed: Experience recoded (1, 2) * Education (1, 2).

To further refine the prediction of membership in either the Low - Percentile Sense of Efficacy group or High - Percentile Sense of Efficacy group, tests of discriminant analysis were performed as a means of describing the predicting power of Teacher Gender, Teacher Education, Teacher Experience, and the interaction of Experience with Education variable (Nexed). Upon entering these four variables in the analysis, 69.4% of the High - Percentile Sense of Efficacy membership and 53.8% of the Low - Percentile Sense of Efficacy group membership was predicted. For these groups, the prediction was not appreciably improved by the subsequent entering of various combinations of the variables in the analysis.

To compare the perceptions of power base use by principals for these two efficacy groups, t-tests were calculated. This provided a comparison between the means of the Low - Percentile Sense of Efficacy group and the High - Percentile Sense of Efficacy group and determined if statistically significant differences existed between the High or Low Coercive - Reward/Low or High Expert - Referent Power factor scores, the High or Low Legitimate - Information Power factor scores, and the Connection Power scores. Effect sizes using Cohen's d, were calculated to determine substantive differences.

The t-test results showed no statistically significant differences regarding perceptions of power base use by principals between groups of teachers defined as possessing a Low - Percentile Sense of Efficacy or a High - Percentile Sense of Efficacy. Effect sizes were less than small (see Table XX).

Table XX

Summary of Power Bases T-tests Between Teachers With a Low - Percentile Sense of Efficacy or High - Percentile Sense of Efficacy

	Low - percentile efficacy n = 38		High - percentile efficacy n = 49				
Power base scores	M	SD	M	SD	t	p	d*
High or low coercive - reward/ low or high expert - referent	.06	.92	-.09	1.05	.69	.50	.03
High or low legitimate - information power	-.10	.98	-.16	1.02	.30	.76	.06
Connection power	6.21**	3.00	5.92	2.58	.49	.63	.10

*Note. Conventional estimates of effect size magnitude for Cohen's d are as follows: .2 = small; .5 = medium; .8 or more = large. Significance at < .05 or better.
**Score derived from single item, Factor loading = .97.

The third definition of teacher efficacy was described as those teachers with Very High Sense of Efficacy or Very Low Sense of Efficacy.

Very High Sense of Efficacy and Very Low Sense of Efficacy groups.

A third, relatively narrow definition of teacher perceptions of efficacy, presented herein as a comparison to those teachers with perceived High - Percentile Sense of Efficacy or Low - Percentile Sense of Efficacy, described two efficacy groups that provided similar numbers of teachers that were even further above or below the mean of .00 with respect to Personal Teaching Efficacy and Teaching Efficacy scores.

Personal Teaching Efficacy scores very far above (.5 SD) the mean of .00 were combined with Teaching Efficacy scores very far (- .5 SD) below the mean of .00. From

this definition, 25 of the 300 teachers responding were identified, and will be referred to herein as teachers with a perceived "Very High Sense of Efficacy." Personal Teaching Efficacy scores very far (- .5 SD) below the mean of .00 were combined with Teaching Efficacy scores very far (.5 SD) above the mean of .00. This definition identified 25 of the 300 teachers responding, and will be herein referred to as teachers with a perceived "Very Low Sense of Efficacy." Figure 5 describes these groups in reference to the comparison definition group: High - Percentile Sense of Efficacy or Low - Percentile Sense of Efficacy.

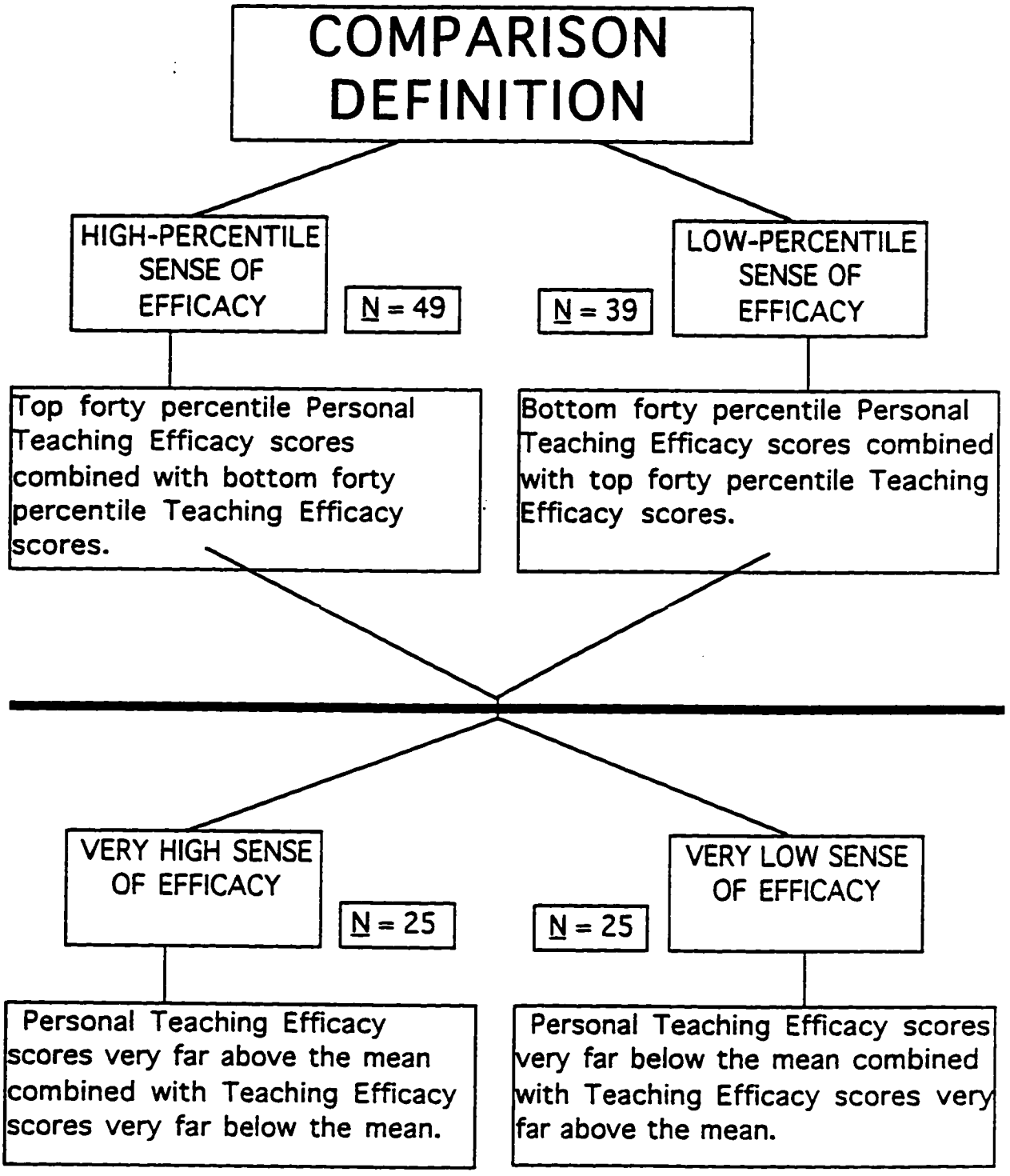

Figure 5.
Development of a third efficacy definition: Very High Sense of Efficacy and Very Low Sense of Efficacy groups

The Very High Sense of Efficacy group included 40% males and 60% females. Thirty-two percent of these teachers held a Bachelor of Arts or Sciences degree only, 68% held a Master of Arts or Sciences degree or higher. The 25 teachers in the Very Low Sense of Efficacy group also included 40% males and 60% females. Thirty-six percent of these teachers had a Bachelor of Arts or Sciences degree only, 64% had attained a Master of Arts or Sciences degree or higher. Although Gender differences were observed, t-tests indicated there were no statistically reliable ($p = < .05$) gender differences between the two groups.

The mean years of teaching experience for those teachers with a Very High Sense of Efficacy was 15.5 years as compared to 21.0 years of Teaching Experience for the Very Low Sense of Efficacy group. For the 25 teachers in the very high group, $\underline{M} = 1.10$ for Personal Teaching Efficacy and $\underline{M} = -1.20$ for Teaching Efficacy, as compared to the 25 teachers in the very low group with $\underline{M} = -1.03$ and $\underline{M} = .98$, respectively (see Table XXI).

Table XXI

Descriptive Data for Teachers With a Very Low Sense of Efficacy or Very High Sense of Efficacy

Efficacy Group	% Male	% Female	% BA	% MA or Higher	Years Experience		Personal Teaching Efficacy		Teaching Efficacy		Overall Teacher Efficacy		N
					M	SD	M	SD	M	SD	M	SD	
Very Low Sense of Efficacy	40	60	36	64	21.0	10.1	-1.03	.60	.98	.45	-2.0	.82	25
Very High Sense of Efficacy	40	60	32	68	15.5	8.3	1.10	.42	-1.2	.36	2.3	.64	27

T-tests were calculated for Teacher Education, Teacher Experience, and the interaction of Teacher Education with Teacher Experience (Nexed) examining the means of the Very Low Sense of Efficacy group and the Very High Sense of Efficacy group. Effect sizes (Cohen's d) were calculated to determine substantive differences.

Table XXII demonstrates that differences at the .05 level of significance or better were observed between the means of Teacher Experience for the two groups. The interaction of Teacher Experience with Teacher Education (Nexed) approached statistical significance at $p < .07$. Teacher Education was not significant at $p = < .05$ or better. Effect sizes were estimated at medium to large for Teacher Experience, medium for the interaction of Teacher Experience with Teacher Education (Nexed), and less than small for Teacher Education.

Table XXII

Summary of T-tests Between Teachers With a Very Low Sense of Efficacy or Very High Sense of Efficacy

	Very low efficacy n = 25		Very high efficacy n = 25				
Variable	M	SD	M	SD	t	p	d*
Teacher Experience	21.0	10.1	15.5	8.3	2.1	.04	.6
Nexed	1.3	.46	1.08	.28	1.87	.07	.5
Teacher Education	1.64	.49	1.68	.48	-.29	.77	.1

*Note. Conventional estimates of effect size magnitude for Cohen's d are as follows: .2 = small; .5 = medium; .8 or more = large. Significance at < .05 or better.

Teacher Education: 1 = Bachelors Degree; 2 = Masters or Higher.

Nexed: Experience recoded (1, 2) * Education (1, 2).

To further refine the prediction of membership in either the Very Low Sense of Efficacy group or Very High Sense of Efficacy group, tests of discriminant analysis were performed as a means of describing the predicting power of Teacher Gender, Teacher Education, Teacher Experience, and the interaction of Experience with Education (Nexed). Teacher Gender, Teacher Education, and the interaction of Experience with Education (Nexed) did not improve the prediction of group membership but Teacher Experience did.

Table XXIII describes the extent to which Teacher Experience correctly predicted membership in the two groups of teachers. Seventy-two percent of the Very High Sense of Efficacy group were predicted correctly and 68% of the Very Low Sense of Efficacy group.

Table XXIII

Summary of Discriminant Analysis: Teacher Experience Predicting Membership in Either Very High Sense of Efficacy Group or Very Low Sense of Efficacy Group

Actual Group	N	Group Membership 1	Group Membership 2
Group 1	25	17	8
Very Low Sense of Efficacy		68.0%	32.0%
Group 2	25	7	18
Very High Sense of Efficacy		28.0%	72.0%

Note: Percent of "grouped" cases correctly classified: 70.0%.

T-tests were also calculated between the power base scores of the Very Low Sense of Efficacy group and the Very High Sense of Efficacy group. These calculations were performed as a method of determining what statistically significant differences, if any, existed between the High or Low Coercive - Reward/Low or High Expert - Referent Power scores, the High or Low Legitimate - Information Power scores, and the Connection Power scores for this narrowly defined group in comparison to those teachers with a perceived Low - Percentile Sense of Efficacy or High - Percentile Sense of Efficacy (described above). Effect sizes, by means of Cohen's d, were again calculated to determine substantive differences.

The t-test results demonstrated there were no differences at the .05 level of significance regarding perceptions of power base use by principals between groups of

teachers defined as possessing a Very Low Sense of Efficacy or a Very High Sense of Efficacy, (see Table XXIV). In comparison to the Low - Percentile Sense of Efficacy or High - Percentile Sense of Efficacy groups (Table XX), the effect sizes for High or Low Legitimate -Information Power and Connection Power were still less than small. The effect size for High Coercive - High Reward/Low Expert - Low Referent Power scores increased to .3, described as small to medium, for the Very Low Sense of Efficacy or Very High Sense of Efficacy groups.

Table XXIV

Summary of Power Base T-tests Between Teachers With a Very Low Sense of Efficacy or Very High Sense of Efficacy

	Very low efficacy n = 25		Very high efficacy n = 25				
Power base scores	M	SD	M	SD	t	p	d*
High or low coercive - reward/ low or high expert - referent	-.05	.90	-.34	1.01	1.07	.29	.3
High or low legitimate - information power	-.22	1.02	-.26	.99	.13	.89	.0
Connection power	6.21	2.99	5.76	2.62	.56	.58	.2

*Note. Conventional estimates of effect size magnitude for Cohen's d are as follows: .2 = small; .5 = medium; .8 or more = large. Significance at < .05 or better.

Relationships between Personal Teaching Efficacy scores and Teaching Efficacy scores and the power bases principals were perceived to use, controlling for mediating variables.

A series of multiple regression tests were conducted to further examine the relationships between the Personal Teaching Efficacy scores and Teaching Efficacy scores of teachers and the power bases principals were perceived to use, controlling for Teacher Gender, Teacher Years of Experience, and Teacher Level of Education. These regressions were calculated for the comparison definition of teacher efficacy, described as groups of

teachers possessing a perceived Low - Percentile Sense of Efficacy or High - Percentile Sense of Efficacy, and the narrowly defined definition of teachers, groups of teachers possessing a perceived Very Low Sense of Efficacy or Very High Sense of Efficacy (described above).

In the regressions, Personal Teaching Efficacy and Teaching Efficacy were entered as the dependent variables in separate calculations. Teacher Gender, Teacher Experience, and Teacher Education were entered first in the equations as independent variables. In order to observe any unique contributions, High or Low Coercive - Reward/Low or High Expert - Referent Power scores, High or Low Legitimate - Information Power scores, and Connection Power scores were each independently entered second in the series of regressions.

These regressions showed that after entering Teacher Gender, Experience, and Education, none of the Personal Teaching Efficacy scores of the two efficacy definitions: Low - Percentile Sense of Efficacy or High - Percentile Sense of Efficacy; Very Low Sense of Efficacy or Very High Sense of Efficacy, were predicted by the three power base scores: perceived High or Low Coercive - Reward/Low or High Expert - Referent Power, High or Low Legitimate - Information Power, or Connection Power scores, at the $< .05$ level of significance.

In the prediction of Teaching Efficacy for the High - Percentile Sense of Efficacy group, after entering Teacher Gender, Teacher Experience, and Teacher Education, High or Low Coercive - Reward/Low or High Expert - Referent Power was significant at $p < .002$. Table XXV describes the multiple regression predicting Teaching Efficacy for the High - Percentile Sense of Efficacy group of teachers ($N = 49$). This analysis initially entered the variables: Teacher Education, Teacher Experience, and Teacher Gender. The Adjusted R Square for this regression was = -.01, with none of the three variables (Teacher Education, Teacher Experience, or Teacher Gender) significant at the $< .05$ level.

Upon entering High or Low Coercive - Reward/Low or High Expert - Referent Power in the regression, the Adjusted R Square increased to .17, reflecting the improvement in the prediction of Teaching Efficacy contributed by High or Low Coercive - Reward/Low or High Expert - Referent Power, after the other three variables. This was supported by the part correlation scores which, at .43, indicated High or Low Coercive - Reward/Low or High Expert - Referent Power was the best independent predictor, considering the other three variables.

The standardized Beta for High or Low Coercive - Reward/Low or High Expert - Referent Power was .44. This indicated that for the teachers with a perceived High - Percentile Sense of Efficacy as the Teaching Efficacy scores increased one standardized unit, perceptions that principals stress High or Low Coercive - Reward/Low or High Expert - Referent Power scores increased .44 standardized units.

In describing substantive relationships, effect size estimates (Cohen's d) were calculated. The effect size for High or Low Coercive - Reward/Low or High Expert - Referent Power was d = .26, slightly less than large. (see Table XXV).

Table XXV

Summary of Multiple Regression Analysis for Variables Predicting the Teaching Efficacy of Teachers With a High - Percentile Sense of Efficacy, (N = 49)

Variable	R^2	b	SE B	Beta	Part Cor	p	d*
Teacher education	-.02	-.11	.13	-.12	-.11	.40	.01
Teacher experience	-.01	.01	.01	.15	.14	.29	.01
Teacher gender	-.01	.12	.13	.13	.13	.33	.01
High or low coercive-reward/ low or high expert-referent	.17	.19	.06	.44	.43	.00	.26

*Note. Conventional estimates of effect size magnitude for Cohen's d are as follows: .02 = small; .15 = medium; .35 = large. $p < .05$.

Summary of the Findings

This study posed four research questions based on teachers' perceptions of the power bases used by high school principals and teachers' perceived levels of efficacy. Data were analyzed using the Statistical Package for the Social Sciences (SPSS).

Research Question One

Are there statistically significant and substantive relationships between the Personal Teaching Efficacy and Teaching Efficacy scores of high school teachers, as measured by high school teachers' responses to the Teacher Efficacy Scale and controlling for the teacher variables of Gender, Years of Experience, and Education?

Data reduction by means of principal components factor analysis provided for the simplification of the variables obtained from the Teacher Efficacy Scale. This procedure described two Factors which accounted for 29% of the variance. Following Gibson and Dembo (1984) it was concluded that the data were supportive of describing two different underlying dimensions of teacher efficacy and that a certain set of variables belonged to one dimension while another set belonged to the second.

Cronbach's alpha was calculated as an analysis of internal consistency reliability with the efficacy items. This analysis described the internal consistency of those items loading highest on Factor 1, described as Personal Teaching Efficacy, as moderately high; items loading highest on Factor 2, described as Teaching Efficacy, moderate; and all 15 items, or Overall Teacher Efficacy, moderate.

ANCOVA tests of significance were performed predicting Personal Teaching Efficacy for all respondents by Teacher Education, Teacher Gender, and Teacher Experience with the covariate Teaching Efficacy. The ANCOVA demonstrated that none of the three independent variables: Teacher Education, Teacher Gender, or Teacher

Experience, had a statistically significant and substantive affect on Personal Teaching Efficacy or Teaching Efficacy.

ANCOVA tests of significance were also performed predicting Teaching Efficacy for all respondents by Teacher Education, Teacher Gender, and Teacher Experience with the covariate Personal Teaching Efficacy. This analysis demonstrated that there was a statistically significant interaction, $p = < .05$, between the two-way interaction of Teacher Education and Teacher Experience with regard to Teaching Efficacy. Effect size (Cohen's d) was estimated at .7, indicating a slightly less than large meaningful difference.

Research Question Two

What are the levels of use and configurations of the different power bases teachers perceived being used by principals: expert, informational, referent, coercive, legitimate, connection, and reward, as measured by high school teachers' responses to the Power Perception Profile - Perception of Others?

Based on the power base scores provided by the Power Perception Profile - Perception of Others, mean scores indicated that expert power was perceived to be the power base used most by principals. Coercive power and connection power were perceived to be least used by principals.

The Power Base scores were factor analyzed using the principal components approach. This procedure extracted three Factors which accounted for 81% of the internal covariation. These factor scores encompassed all seven power base scores and were described as Perceived High or Low Coercive - Reward Power/Low or High Expert - Referent Power, High or Low Legitimate - Information Power, and Connection Power.

Research Question Three

Are there statistically significant and substantive differences in the levels of use and configurations of the power bases used by male and female principals: expert, informational, referent, coercive, legitimate, connection, and reward, as measured by high school teachers' responses to the Power Perception Profile - Perception of Others?

This study included 15 male principals and only one female principal. The disparity in the number of male and female principals was such that neither statistically significant and substantive comparisons, nor valid generalizations could be made.

Research Question Four

Are there statistically significant and substantive relationships between the Personal Teaching Efficacy and Teaching Efficacy scores of high school teachers, and the power bases principals are perceived to use: expert, informational, referent, coercive, legitimate, connection and reward, as measured by high school teachers' responses to the Power Perception Profile - Perception of Others and controlling for the teacher variables of Teacher Gender, Teacher Years of Experience, and Teacher Level of Education?

In describing teacher efficacy, this study examined a combination of Personal Teaching Efficacy and Teaching Efficacy. Personal Teaching Efficacy factor scores represented respondents' perception that they did, or did not, possess the teaching skills and abilities required to bring about student learning (Gibson & Dembo, 1984). High Personal Teaching Efficacy scores represented a strong sense of possessing these skills and abilities.

Teaching Efficacy factor scores represented the belief that any teacher's ability to bring about change is, or is not, limited by factors external to the teacher, such as students' home environment, family background, and parental influences (Gibson & Dembo, 1984).

Low Teaching Efficacy scores were indicative of the perception that the teacher's ability to bring about a change in student learning was not limited by these factors.

Based on a definition of teacher efficacy described as a combination of Personal Teaching Efficacy scores and Teaching Efficacy scores, three definitions of efficacy groups were examined.

The first definition identified Fully Efficacious or Fully Inefficacious groups of teachers. Fully Efficacious teachers were described as those 71 teachers whose Personal Teaching Efficacy scores were above the mean of .00 and whose Teaching Efficacy scores were below the mean of .00. Fully Inefficacious described those teachers whose Personal Teaching Efficacy scores were below the mean of .00 and whose Teaching Efficacy scores were above the mean score of .00. Sixty-seven teachers fit this description.

Because of the observed differences between the percentage of males and females in the Fully Efficacious and Fully Inefficacious groups, Chi-Square tests were conducted for Teacher Gender. These calculations described reliable differences ($p < .03$) between the groups for Teacher Gender and a small ($d = .29$) effect size.

T-tests were also calculated for Teacher Gender, Teacher Education, Teacher Experience, and the interaction of Teacher Education with Teacher Experience variable (Nexed), between the means of the Fully Inefficacious group and the Fully Efficacious group. Effect sizes, Cohen's d, were calculated to determine substantive differences.

Differences at the .05 level of significance or better were observed between the means of the interaction-term variable: Teacher Education times Teacher Experience (Nexed) for the two groups and Teacher Gender. Teacher Experience and Teacher Education were not independently significant at $p = < .05$ or better, but the interaction-term was significant at $p < .04$. Effect sizes were estimated at medium for Teacher Education times Teacher Experience (Nexed), slightly larger than small for Teacher Experience, slightly less than medium for Teacher Gender, and less than small for Teacher Education.

Tests of discriminant analysis were performed as a means of describing the predicting power of Teacher Gender, Teacher Education, Teacher Experience, and the interaction of Experience with Education variable (Nexed). Upon entering these four variables in the analysis, 66.2% of the Fully Efficacious membership and 56.7% of the Fully Inefficacious group membership was predicted. For these groups, the prediction was not appreciably improved by the subsequent entering of various combinations of the variables in the analysis.

A second definition of groups of perceived teacher efficacy, used as the basis of comparison in the study, described teachers with a High - Percentile Sense of Efficacy as those whose Personal Teaching Efficacy scores fell within the top forty percentile of all scores and whose Teaching Efficacy scores fell within the bottom forty percentile of all scores. Forty-nine teachers were included within the High - Percentile Sense of Efficacy group. Teachers within the group described as Low - Percentile Sense of Efficacy, were those teachers whose Personal Teaching Efficacy scores fell within the bottom forty percentile of all scores and whose Teaching Efficacy fell within the top forty percentile of all scores. Thirty-nine teachers were included in this Low - Percentile Sense of Efficacy group. A description of Teacher Gender, Level of Education, Years of Teaching Experience, Personal Teaching Efficacy, Teaching Efficacy, and Overall Teacher Efficacy was presented for these groups.

To analyze the observed differences between the percentage of males and females in the High - Percentile Sense of Efficacy group, Chi-Square tests were conducted for Teacher Gender. These calculations described no reliable differences for Teacher Gender and a small ($\underline{d} = .3$) effect size.

T-tests were calculated for Teacher Education, Teacher Experience, and the interaction of Teacher Education with Teacher Experience variable (Nexed) between the means of the Low - Percentile Sense of Efficacy group and the High - Percentile Sense of

Efficacy group. Effect sizes (Cohen's d) were calculated to determine substantive differences.

Differences at the .05 level of significance or better were observed between the means of the interaction-term variable: Teacher Education times Teacher Experience (Nexed) for the two groups. Teacher Experience and Teacher Education were not statistically significant at $p = < .05$ or better. Effect sizes were estimated at slightly less than medium for Teacher Education times Teacher Experience (Nexed), slightly larger than small for Teacher Experience, and less than small for Teacher Education.

To further refine the prediction of membership in either the Low - Percentile Sense of Efficacy group or High - Percentile Sense of Efficacy group, tests of discriminant analysis were performed as a means of describing the predicting power of Teacher Gender, Teacher Education, Teacher Experience, and the interaction of Experience with Education variable (Nexed). Upon entering these four variables in the analysis, 69.4% of the High - Percentile Sense of Efficacy membership and 53.8% of the Low - Percentile Sense of Efficacy group membership was predicted. For these groups the prediction was not appreciably improved by the subsequent entering of various combinations of the variables in the analysis.

In comparing the perceptions of power base use by principals for teachers with perceived Low - Percentile Sense of Efficacy or High - Percentile Sense of Efficacy t-tests and effect sizes were calculated. The t-test results showed no significant differences regarding perceptions of power base use by principals between groups of teachers defined as possessing a Low - Percentile Sense of Efficacy or a High - Percentile Sense of Efficacy at $p = < .05$ level . Effect sizes (Cohen's d) were less than small.

A third, relatively narrow definition of teacher perceptions of efficacy was presented and compared to those teachers with perceived High - Percentile Sense of Efficacy or Low - Percentile Sense of Efficacy. Personal Teaching Efficacy scores either

very far (.5 SD) above or very low below (- .5 SD) the mean of .00 were combined with Teaching Efficacy scores either very far below (- .5 SD) or very far above (.5 SD) the mean of .00. This definition provided similar numbers of teachers and described 25 teachers with a Very High Sense of Efficacy and 25 teachers with a Very Low Sense of Efficacy, respectively. A description of the Gender, Level of Education, and means for years of Teaching Experience, Personal Teaching Efficacy, Teaching Efficacy, and Overall Teacher Efficacy was presented.

T-tests were calculated for Teacher Education, Teacher Experience, and the interaction of Teacher Education with Teacher Experience (Nexed) examining the means of the Very Low Sense of Efficacy group and the Very High Sense of Efficacy group. Effect sizes (Cohen's d) were calculated to determine substantive differences.

Differences at the .05 level of significance or better were observed between the means of Teacher Experience for the two groups. The interaction of Teacher Experience with Teacher Education (Nexed) approached statistical significance at $p = .07$, Teacher Education and Teacher Gender were not significant at $p = < .05$ or better. Effect sizes were estimated at medium to large for Teacher Experience, medium for the interaction of Teacher Experience with Teacher Education (Nexed), and less than small for Teacher Education.

Tests of discriminant analysis were performed as a means of describing the predicting power of Teacher Gender, Teacher Education, Teacher Experience, and the interaction of Experience with Education (Nexed). Teacher Gender, Teacher Education, and the interaction of Experience with Education (Nexed) did not improve the prediction of group membership but Teacher Experience did. Teacher Experience correctly predicted 72% of the membership in the Very High Sense of Efficacy group and 68% of the Very Low Sense of Efficacy group.

T-tests were also calculated between the means of the Very Low Sense of Efficacy group and the Very High Sense of Efficacy group to determine what statistically significant differences, if any, existed between the High or Low Coercive - Reward/Low or High Expert - Referent Power scores, the High or Low Legitimate - Information Power scores, and the Connection Power scores for this narrowly defined group, in comparison to those teachers with a perceived Low - Percentile Sense of Efficacy or High - Percentile Sense of Efficacy. Effect sizes (Cohen's d) were calculated to determine substantive differences. The t-test results demonstrated there were no differences at the .05 level of significance regarding perceptions of power base use by principals between groups of teachers defined as possessing a Very Low Sense of Efficacy or a Very High Sense of Efficacy.

Multiple regression tests were conducted to further examine the relationships between the Personal Teaching Efficacy scores and Teaching Efficacy scores of teachers and the power bases principals were perceived to use, controlling for Teacher Gender, Teacher Years of Experience, and Teacher Level of Education. These regressions were calculated for the comparison definition of teachers (groups possessing a perceived Low - Percentile Sense of Efficacy or High - Percentile Sense of Efficacy) and for the narrowly defined definition of teachers (groups possessing a perceived Very Low Sense of Efficacy or Very High Sense of Efficacy).

After entering Teacher Gender, Experience, and Education in the regressions, none of the Personal Teaching Efficacy scores of either of the efficacy groups: Low - Percentile Sense of Efficacy or High - Percentile Sense of Efficacy and Very Low Sense of Efficacy or Very High Sense of Efficacy were predicted by the three power base scores: perceived High or Low Coercive - Reward/Low or High Expert - Referent Power, High or Low Legitimate - Information Power, or Connection Power, at the $< .05$ level of significance.

In the prediction of Teaching Efficacy for the perceived High - Percentile Sense of Efficacy group, however, after entering Teacher Gender, Experience, and Education, High

or Low Coercive - Reward/Low or High Expert - Referent Power was found to be statistically significant at $p < .002$. Upon entering High or low Coercive - Reward/Low or High Expert - Referent Power into the regression, the prediction of Teaching Efficacy was improved and as supported by the part correlation scores, High or Low Coercive - Reward/Low or High Expert - Referent Power was the best independent predictor considering the other three variables and was significant at the $p = < .05$ level.

Effect size estimates were calculated in describing substantive relationships. The effect size for High or low Coercive - Reward/Low or High Expert - Referent Power was $d = .26$, slightly less than large. The data described there were both statistically significant and substantive relationships between the Teaching Efficacy scores and perceptions of principals' use of High or Low Coercive - Reward/Low or High Expert - Referent Power for the teachers with perceived High - Percentile Sense of Efficacy.

Chapter V

Conclusions, Implications, and Recommendations

The purposes of this study were to assess the perceived sense of high school teacher efficacy, to assess the power bases of principals as perceived by high school teachers, and to investigate the relationships between high school teachers' perceived sense of efficacy and their perceptions of principals' use of power bases.

The study poses four research questions:

1. Are there statistically significant and substantive relationships between the Personal Teaching Efficacy and Teaching Efficacy scores of high school teachers, as measured by high school teachers' responses to the Teacher Efficacy Scale, and controlling for the teacher variables of Gender, Years of Experience, and Education?

2. What are the levels of use and configurations of the seven different power bases used by principals: expert, informational, referent, coercive, legitimate, connection, and reward, as measured by high school teachers' responses to the Power Perception Profile-Other?

3. Are there statistically significant and substantive differences in the levels of use and configurations of the seven power bases used by male and female principals: expert, informational, referent, coercive, legitimate, connection, and reward, as measured by high school teachers' responses to the Power Perception Profile - Perception of Others?

4. Are there statistically significant and substantive relationships between the Personal Teaching Efficacy and Teaching Efficacy scores of high school teachers, and the seven power bases principals are perceived to use: expert, informational, referent, coercive,

legitimate, connection and reward, controlling for the teacher variables of Gender, Years of Experience, and Education?

It is generally accepted that power is a deeply embedded force within organizations. McClelland (1975) defined power as "the capacity to affect organizational outcomes" (p. 4). Research has generally posited that for organizations to experience success, the leadership must be skilled in the use and acquisition of power.

The school principalship is a position of power, and how effective principals use their power can make a difference in achieving a quality education for students (Porter & Lemon, 1988; Short & Johnson, 1994). Research suggests that leaders, such as principals, influence subordinates, such as teachers, within the context of described power bases (French and Raven, 1959; Raven and Kruglanski, 1970; Hersey and Blanchard, 1982; Blumberg & Greenfield, 1991; Blase, 1991; Blase, 1993).

Short and Johnson (1994) find that the principal typically uses one or more power bases to accomplish the goals and objectives adopted for the school. They argue that the power base or bases of the principal potentially positively or negatively affect such psycho-social dimensions as conflict, trust, and influence.

Teacher efficacy focuses on the extent to which the teacher believes he or she has the capacity to affect student performance positively; sense of teacher efficacy affects the teacher's answer to the critical question, "Can I make a difference in helping students learn?" Common throughout research relating to educational organizations is the argument that a teacher with a high sense of efficacy promotes the success of the organization.

Research additionally identifies a teacher's perceived sense of efficacy as an important variable in the prediction of educational effectiveness (Ashton & Webb, 1982; Gibson & Dembo, 1984; Ashton & Webb,1986; Woolfolk & Hoy, 1990; Woolfolk & Hoy, 1993; Short & Johnson, 1994; and Taylor and Tashakkori, 1994). "Given the apparent value of teachers' sense of efficacy, it is surprising that little is known about how

to develop or support efficacy. With a few exceptions researchers have not examined teacher efficacy as a dependent variable" (Woolfolk et. Al., (1993) p. 356).

As instructional leaders, principals are in a position to use their power to promote teacher efficacy, a critical use of power since teacher efficacy has been found to positively affect student learning (Armour, et al., 1976). The principal must create a setting which allows the teachers to focus their energies on their role of helping students to learn (Hoy and Bliss, 1989; Blase, 1993). The present study poses the question: If having a high level of teacher efficacy is potentially advantageous for student learning, are there bases of power that principals operate from or can employ, that are associated with and therefore, presumably can influence the levels of efficacy in their staff?

The sample population of teachers included in this study is drawn from 16 public high schools within the seven Midwestern public school districts collectively forming a network referred to as the Metropolitan Omaha Educational Consortium (M.O.E.C.). A stratified random sampling design provides a population sample of 32% of each high school (500 total teachers) which includes similar numbers of males and females.

Two survey instruments form the foundation for this study: Appendix B, The Teacher Efficacy Scale (Gibson & Dembo, 1984), and Appendix C, the Power Perception Profile - Perception of Others (PPP), developed by Hersey and Natemeyer (1979). A supplemental demographic survey (Appendix A) provides information regarding Teacher Gender, Teacher Years of Experience, and Teacher Education.

The results of the investigation describe the relationships between the Personal Teaching Efficacy and Teaching Efficacy scores of high school teachers, teachers' perceptions of the seven different power bases principals use, and the relationships between the Personal Teaching Efficacy and Teaching Efficacy scores of high school teachers and the seven power bases that principals are perceived to use.

Conclusions

In this study 500 teachers, including similar numbers of males and females from 16 public high schools have been surveyed. Of the 500 teachers sampled, 300, or 60%, responded. The 300 respondents include 139 males and 161 females (46% and 54% respectively).

The survey indicates that the average teacher respondent has taught 18.3 years, with 65% of these teachers holding a Master of Arts or Sciences degree or higher. Teacher perceptions of the power base use of 15 male principals and one female principal are included in the study.

Research Question One

Question one examines the relationships between the perceived Personal Teaching Efficacy and Teaching Efficacy of teachers and the influences of Teacher Gender, Teacher Years of Experience, and Teacher Level of Education. Are there statistically significant and substantive relationships between the Personal Teaching Efficacy and Teaching Efficacy scores of high school teachers, as measured by high school teachers' responses to the Teacher Efficacy Scale, and controlling for the teacher variables of Gender, Years of Experience, and Education?

In examining Teacher responses to the Teacher Efficacy Scale, the data describe teacher responses as moderate to moderately high in internal consistency. As with the previous research of Gibson and Dembo (1984), the data are supportive of two underlying dimensions of teacher efficacy. This study characterizes the first dimension as Personal Teaching Efficacy, teachers' belief that they have the skills and abilities to bring about student learning. The second dimension, Teaching Efficacy, refers to pedagogy and represents the general belief teachers hold about the relationship between teaching and

learning. It includes the belief that any teacher's ability to improve student learning is limited by such external factors as students' home environment, family background, and parental influence (Gibson and Dembo, 1984).

The analysis of teacher responses, as with the interpretations of Bandura (1977) and Gibson and Dembo (1984), suggests defining a high sense of teacher efficacy as a combination of high Personal Teaching Efficacy scores with low Teaching Efficacy scores. Responses to the Teacher Efficacy Scale indicate that high school teacher respondents vary in their perceived sense of Personal Teaching Efficacy and Teaching Efficacy.

In consideration of all teacher respondents, the data indicate that Teacher Gender, Teacher Experience, and Teacher Level of Education do not significantly, nor substantively affect the perceived levels of Personal Teaching Efficacy. The data do indicate, however, in predicting Teaching Efficacy that the interaction of Teacher Experience with Teacher Education is statistically significant.

The data for all teacher respondents imply Teacher Experience in interaction with Teacher Education positively affects Teaching Efficacy scores of this group, and this influence is meaningful. As Teacher Experience and Teacher Education increase together, these variables interact to impact teacher perceptions of Teaching Efficacy. This relationship indicates that high school teacher respondents' beliefs that any teacher's ability to improve student learning is limited by the impact of external factors such as students' home environment, family background, and parental influence, increases with Teacher Experience interacting with Teacher Education.

Research Question Two

The second research question investigates the power bases from which principals are perceived to operate. What are the levels of use and configurations of the seven different power bases used by principals: expert, informational, referent, coercive,

legitimate, connection, and reward, as measured by high school teachers' responses to the Power Perception Profile-Other?

In examining the levels of use and configurations of the different power bases principals use, teachers perceive principals using Expert Power most frequently and Coercive Power and Connection Power least frequently. The analysis of these perceptions suggests that teachers perceive the seven bases of power used by principals as being within two different configurations and an additional dimension.

The first configuration of power base use shows that teachers who perceive his or her principal operating primarily from high levels of Coercive or also Reward Power perceive the principal as using primarily low levels of Expert or also Referent Power. Conversely, teachers who perceive that principals operating primarily from high levels of Expert or also Referent Power perceive the principal as primarily using low levels of Coercive or also Reward Power.

In a second configuration of power bases, principals who are perceived as operating from high or low levels of Legitimate Power are also perceived as using high or low levels of Information Power, respectively. In addition, there is an additional dimension, Connection Power, that describes teacher perceptions of principals' use of Connection Power as independent of other power base perceptions.

Research Question Three

The third research question seeks to examine differences between the perceived use of power bases of male and female principals. Are there statistically significant and substantive differences in the levels of use and configurations of the seven power bases used by male and female principals: expert, informational, referent, coercive, legitimate, connection, and reward, as measured by high school teachers' responses to the Power Perception Profile - Perception of Others?

There are 15 male and only one female principal included in the study. Because the number of female high school principals in the study is disproportionately small no conclusions can be drawn, nor can any generalizations be made about teachers' perceptions of the power bases male and female principals use.

Research Question Four

Question four examines the relationships between teacher efficacy and the power bases principals are perceived to use. Are there statistically significant and substantive relationships between the Personal Teaching Efficacy and Teaching Efficacy scores of high school teachers, and the seven power bases principals are perceived to use: expert, informational, referent, coercive, legitimate, connection and reward, controlling for the teacher variables of Gender, Years of Experience, and Education?

Relationships between personal teaching efficacy and teaching efficacy scores and perceptions of principals' power bases.

In describing the relationships between teacher perceptions of his or her Personal Teaching Efficacy and Teaching Efficacy and the perceptions of principals' power bases, this study presents three differing perspectives, or definitions of teacher efficacy based on a combination of Personal Teaching Efficacy scores with Teaching Efficacy scores (see Figure 6).

These definitions describe teacher efficacy groups as: Fully Efficacious or Fully Inefficacious, High - Percentile Sense of Efficacy or Low - Percentile Sense of Efficacy, and Very High Sense of Efficacy or Very Low Sense of Efficacy. As portrayed in Figure 6, these descriptions progress from a general, relatively broad definition of teacher efficacy (Fully Efficacious or Fully Inefficacious) to a relatively narrow definition (Very High Sense of Efficacy or Very Low Sense of Efficacy). This development of three efficacy

definitions provides for this study's examination of two groups of teacher efficacy from which comparisons can be made and conclusions drawn: High - Percentile Sense of Efficacy or Low - Percentile Sense of Efficacy.

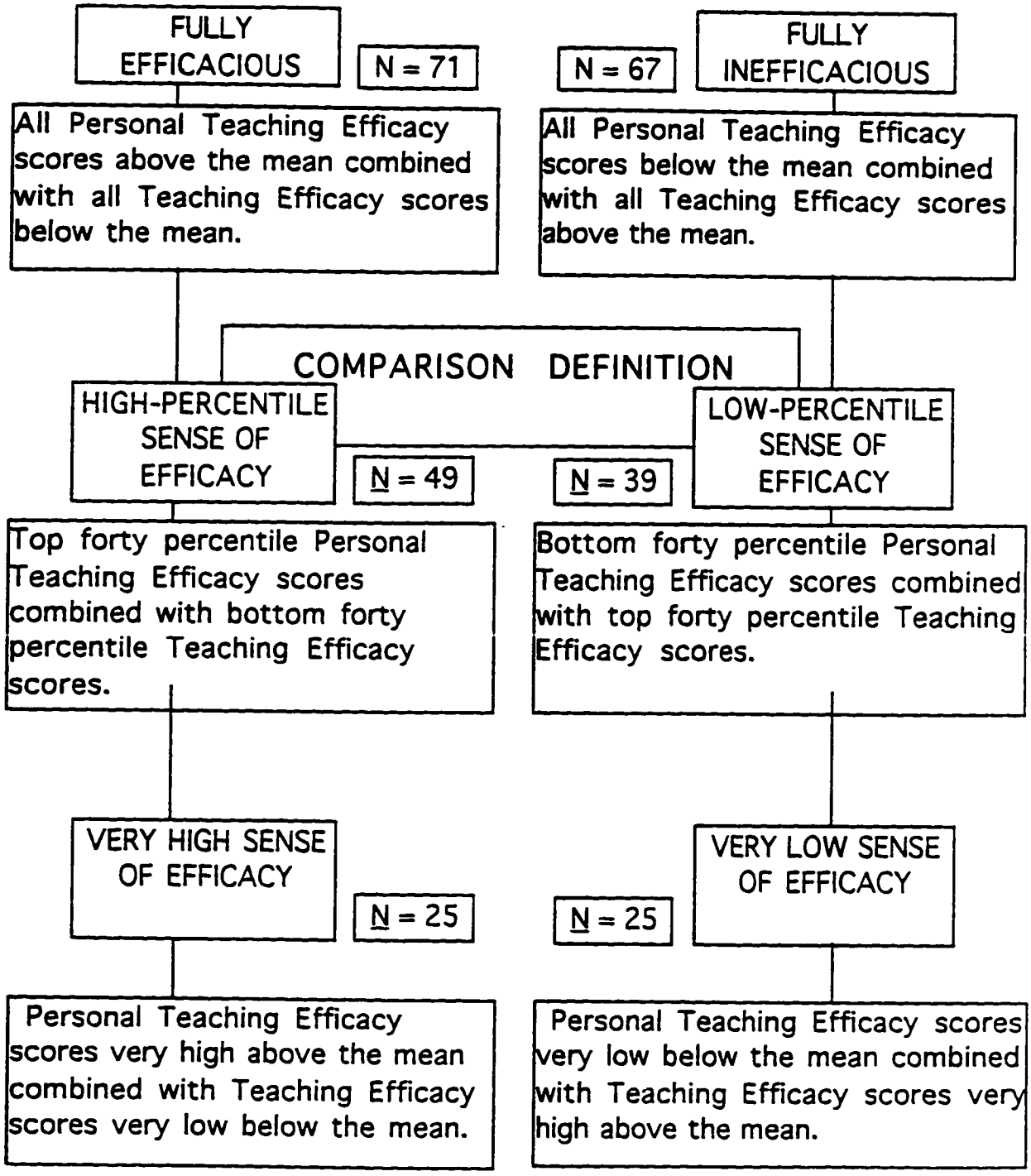

Figure 6.

Representation of the development of three efficacy definitions. High-Percentile or Low-Percentile groups used for comparisons.

As with previous research (Parkay, Olejnik, and Proller, 1986; Fink, 1988; Petrie, Hartranft, and Lutz, 1995), this study supports the existence of a continuum of teacher efficacy levels across the staff within the high school setting. The data of this study suggest that most high school teacher respondents do not perceive themselves to have a high sense of teacher efficacy. In combining "high" Personal Teaching Efficacy scores and "low" Teaching Efficacy scores, even the broadest definition used in this study (Fully Efficacious) includes only 71 teachers.

Seventy-one teachers are described as Fully Efficacious. Thirty-five percent of these teachers are males and 65% are females. Similar to previous elementary school research (Greenwood, et al., 1990) the data for this definition suggest that most efficacious teachers are females, as this study's analysis reveals that this difference is statistically significant and, although small, is meaningful.

Fully Efficacious teachers have taught an average of 17.8 years. Within the group of teachers described as Fully Inefficacious, 54% are male and 46% are females and have taught an average of 20.4 years.

In exploring the influence of other teacher variables, differences at the .05 level of significance or better are observed between the means of the interaction-term variable: Teacher Education times Teacher Experience (Nexed) for the two groups and for Teacher Gender. Effect sizes are estimated at medium for Teacher Education times Teacher Experience (Nexed), slightly larger than small for Teacher Experience, slightly less than medium for Teacher Gender, and less than small for Teacher Education.

The definition that characterizes those groups of teachers possessing a perceived High - Percentile Sense of Efficacy or Low - Percentile Sense of Efficacy represents a definition of teacher efficacy groups which this study uses as a means of comparison to other efficacy groups and as a basis for identifying relationships with the perceived power

bases of principals and Teacher Gender, Teacher Experience, and Teacher Level of Education.

Forty-nine teachers are described as possessing a perceived High - Percentile Sense of Efficacy. This group includes twice as many females as males (67% and 33% respectively), but were not statistically different. These teachers have taught an average of 16.8 years, and most, 67%, have attained a Master of Arts or Sciences degree or higher.

Within the group of 39 teachers with a Low - Percentile Sense of Efficacy gender was equitably represented, with 49% of the group being male and 51% female. The teachers within this group have taught an average of 19.3 years, and 64%, have attained a Master of Arts or Sciences degree or higher.

Differences at the .05 level of significance or better are observed between the means of the interaction-term variable: Teacher Education times Teacher Experience (Nexed) for these two groups. Teacher Experience and Teacher Education are not statistically significant at $p = < .05$ or better. Effect size estimates are slightly less than medium for Teacher Education times Teacher Experience (Nexed), slightly larger than small for Teacher Experience, and less than small for Teacher Education. Additional analyses reveal that there are no significant or substantive differences regarding perceptions of principal power base use between teachers with High - Percentile Sense of Efficacy and teachers with a Low - Percentile Sense of Efficacy.

The third, relatively narrow definition of teacher perceptions of efficacy, provides similar numbers of teachers, and describes 25 teachers with a Very High Sense of Efficacy and 25 teachers with a Very Low Sense of Efficacy. Within both groups of teachers 40% are males and 60% are females. Teachers in the Very High Sense of Efficacy group have taught an average of 15.5 years with 68% attaining a Master of Arts or Sciences degree or higher. Very Low Sense of Efficacy teachers have taught an average of 21.0 years and 64% have attained a Master of Arts or Sciences degree or higher.

Analyses reveal differences at the .05 level of significance or better between the means of Teacher Experience for the two groups. The interaction of Teacher Experience with Teacher Education (Nexed) approaches statistical significance at $p = < .07$, Teacher Education and Teacher Gender are not significant at $p = < .05$ or better. Effect size estimates are medium to large for Teacher Experience, medium for the interaction of Teacher Experience with Teacher Education (Nexed), and less than small for Teacher Education. Additional analyses reveal that Teacher Experience correctly predicts 72% of the membership in the Very High Sense of Efficacy group and 68% of the Very Low Sense of Efficacy group.

In describing the influences of principal power bases, t-test results demonstrate there are no differences at the .05 level of significance regarding perceptions of power base use by principals between groups of teachers defined as possessing a Very Low Sense of Efficacy or a Very High Sense of Efficacy.

Relationships between personal teaching efficacy scores and teaching efficacy scores and the power bases of principals, controlling for mediating variables.

When the influences of Teacher Gender, Teacher Experience, and Teacher Education on teachers' perceptions of principals' power bases are considered, the data for the comparison definition indicate that none of the perceived power bases has a significant effect on the Personal Teaching Efficacy of teachers with a High - Percentile Sense of Efficacy or Low - Percentile Sense of Efficacy. For teachers with a High - Percentile Sense of Efficacy or a Low - Percentile Sense of Efficacy, perceptions of principals' power bases do not significantly influence teachers' belief that they have the skills and abilities to bring about student learning.

The results of analyses do suggest that for teachers with a High - Percentile Sense of Efficacy, Teaching Efficacy is predicted by teacher perceptions of the High or Low Coercive - Reward/Low or High Expert - Referent Power of principals, and this prediction is meaningful. The data suggest there is a positive relationship between the Teaching Efficacy scores, or belief about teachers' ability to improve student learning being limited by external factors, and teachers' perceptions of principals primarily operating from a power base high in Coercive and also Reward Power, even after Teacher Gender, Teacher Experience, and Teacher Education are considered.

Among teachers with a High - Percentile Sense of Efficacy as beliefs about being limited by external factors increase, so do teachers' perceptions of the principal primarily using Coercive and also Reward Power. These bases are indicative of teachers' perceptions that the principal relies on administering negative consequences to those who do not cooperate and can provide rewards and support for those who do cooperate.

The data additionally indicate there is a negative relationship between Teaching Efficacy scores (that is, teachers' beliefs of being limited by external factors such as students' home environment, family background, and parental influences) and perceptions of principals' primarily using Expert and also Referent Power after considering Teacher Gender, Teacher Experience, and Teacher Education. As teachers' beliefs about their ability to bring about change or to influence student learning are perceived to be increasingly limited by external factors, their perceptions of principals primarily using Expert and also Referent Power decrease.

The data also imply that a teacher's sense of being limited by external factors decreases as perceptions of principals primarily operating from bases of Expert and also Referent Power increase. The beliefs these teachers with High - Percentile Sense of Efficacy hold about <u>not</u> being limited by external factors such as students' home environment, family background, and parental influences are indicative of an increase in

perceptions of principals primarily using Expert and also Referent Power. These bases are indicative of teachers' perceptions of having respect for the principal's understanding, knowledge, and experience, as well as a liking of the principal and a desire to please him or her.

Implications of the Findings

In attempting to increase the body of knowledge surrounding the power of the principal and its impact on student achievement, this study seeks to provide evidence supporting how high school principals can apply their bases of power to positively influence the teachers' sense of efficacy. This study assesses the perceived sense of high school teacher efficacy, the power bases of principals as perceived by high school teachers, and investigates the relationships between high school teachers' perceived sense of efficacy and their perceptions of principals' use of power bases.

This study provides evidence which suggests that within the high school setting:

1. High school teachers, overall, have a low sense of teacher efficacy.

2. With respect to defining a teacher's sense of efficacy as a combination of Personal Teaching Efficacy and Teaching Efficacy, the interaction of Teacher Experience with Teacher Education or Teacher Experience alone, predicts membership in the efficacy groups as defined by this study. Membership in low efficacy groups is characteristic of teachers with more experience - education.

3. Teacher Experience interacting with Teacher Education affects high school teachers' beliefs about external limitations on their ability to help students achieve (Teaching Efficacy). High school teachers with more experience, interacting with education, perceive they are increasingly limited in their ability to improve student achievement by external factors.

4. Principals who are perceived by teachers primarily to rely on administering negative consequences to those who do not cooperate and who provide rewards and support for those who do cooperate are accompanied by perceptions of teachers who believe they are increasingly limited by external factors in their ability to help students achieve (low sense of perceived Teaching Efficacy).

5. Principals who are primarily perceived by teachers as worthy of respect for demonstrating understanding, knowledge, and experience and also are likable, are accompanied by perceptions of teachers who believe they are not increasingly limited by external factors in their ability to help students achieve (high sense of perceived Teaching Efficacy).

Although Woolfolk and Hoy (1993) find that little is known about how to develop and support teacher efficacy, these results suggest that this current study has implications for the preparation, training, and continued professional development of principals, the selection process of aspiring principals, the improvement of the professional development of teachers and principals across all career stages, and the development of a more open school culture.

Principal Training Programs and Continued Professional Development

Many times the management practices of successful corporations frequently are viewed as "theory-providers" for school administrators. Recent developments in school leadership seek to incorporate these practices into the essential learnings of aspiring administrators. Do these practices make sense for schools?

Sergiovanni (1996) argues that the theories of management, motivation, and control used by corporations make no sense for schools. He characterizes schools as moral communities, more like families than corporate organizations. As such schools require a different approach to leadership than that typically found in corporations. Sergiovanni

challenges the notion that schools can be tightly managed into reform. The implication is that principal preparation programs should emphasize the principal's role as the school's moral leader in addition to traditional management and instructional roles.

This study provides support for the principal's use of expert power. In examining how principals in effective and other schools gain influence over their teachers, High and Achilles (1986) find expert power as the most important influence-gaining behavior. The "principal as expert" needs to become an important component in the training programs designed to prepare aspiring principals. In addition to the traditional preparation focusing on leadership, management, and legal or political issues surrounding school administration, preservice training of principals can also provide reasonable exposure to innovative school practices that will allow principals to continue to develop and enhance his or her expertise in areas valued by teachers.

This exposure to innovative programs and practices may provide the impetus for principals to develop an expertise in such areas as action research, successful reading programs, successful inclusion practices, brain theory, multiple intelligences, curriculum development, and alternative forms of assessment. In the eyes of teachers, the principal must "walk the talk." The expert principal has more to offer to teachers in the continual battle for improvement of student achievement and school culture than does the principal who is lacking in areas of instructional practice.

Principals must plan professional development in order to update and maintain their expertise continuously. This development must also include time for renewal, sharing, writing, and reflecting, much like the format of the Harvard University Principal Centers and Conversations. In many instances studies depict the teacher in a setting of isolation; so too is the principal. Principals need to avail themselves of opportunities to share and interact with other principals about educationally significant issues. Through these collegial

interactions the practicing principal will gain knowledge and insights about themselves and the issues they encounter.

As suggested by this study, principals are in positions of influence that transcend mere management. They must have an understanding of themselves and set the example for others through their professional development as active adult learners. This example will help to maintain quality in their own and others' performance.

Selection of Principals

Schools must recruit principals who understand that the improvement of student achievement depends upon increasing the capacity for others to perform rather than upon individual leadership characterized by control, manipulation, and punishment. It is imperative that potential principals possess an understanding of the importance of being recognized as leaders in terms of their contributions to the progress of the school rather than their position of power.

"School restructuring literature suggests that decisional participation leads not only to increased job satisfaction but also greater feelings of efficacy for teachers," (Taylor and Tashakkori, 1994, p. 4). A general theme in several studies has been that teacher efficacy is associated with collegial interactions and the opportunity to participate in decision making (Taylor and Tashakkori, 1994, p. 10.) A key theme in the selection process of potential principals must focus on leadership strategies that facilitate organizational transformation from a bureaucratic to a shared structure of governance. This study suggests practices employing high levels of Expert and Referent Power in contrast to Coercive and Reward Power will support this transition.

Teacher Professional Development

"It is possible that other forces are at work in directly influencing teacher efficacy. Even this possibility suggests an appropriate way to encourage teacher efficacy is to support the instructional efforts of teachers," (Woolfolk et al., 1993, p. 368). In support of instructional efforts, Sergiovanni (1996) emphasizes that principals can help teachers grow in professional competence and become less isolated, no matter what career stage they are in, through strategies such as recognizing the individual differences among teachers, encouraging teachers to reflect on their own practices, and providing for collaborative learning among teachers. Staff development structures must lend themselves to reinforcing practices to eliminate teacher isolation and support teachers' instructional efforts.

In further developing his or her expertise and in helping create a culture that diminishes teachers' feelings of external limitations, principals must realize their potential power as a staff developer within a culture where sharing ideas and caring for one another are the norm. School-based staff development will address those issues of most value and importance when it is developed in collaboration with teachers. This collaborative venture demands that teachers of all levels of experience or education leave the isolation of their classroom and, through social interaction with others, provides them with opportunities to seek help and support from other teachers.

This articulation and sharing of student-centered practices, frustrations, and beliefs, will allow teachers to reflect and receive feedback on practices with potential for improving student achievement and which positively address external factors which may limit student learning. A structure of personal and professional growth for teachers that permits teachers to share their ideas and supports the development and implementation of new practices will help alleviate inefficacious feelings of inadequacy, insecurity, and the limitations on teacher capacity for growth that have become prevalent in the current culture of isolation. More importantly, it will increase teacher sense of efficacy and encourage principal uses of power

bases which will positively effect teachers' beliefs that they have, or can acquire, the skills and abilities to bring about student learning and that teachers can positively address external factors impacting student learning.

Recommendations For Further Research

Further research to describe the connections between teacher efficacy and the principalship, particularly at the high school level would be beneficial. Specifically, the following might be considered:

1. Based on this study, it appears that Teacher Experience and Teacher Education interact together to impact Teaching Efficacy. A qualitative data component that allows teachers to elaborate on the focus and quality of their graduate coursework would be of benefit.

2. Because this study focuses on comparatively large high schools in a suburban setting, the study should be replicated so as to include school districts of other sizes and settings.

3. Studies that would include various measures of academic performance could further describe the relationships between teacher efficacy and student achievement, particularly at the high school level.

4. Because the data suggest Teaching Efficacy is affected by several power bases and by the interaction of Teacher Experience and Teacher Education, it would be of benefit to describe teacher perceptions of their school's social class and culture.

5. Previous efficacy research in elementary schools (Greenwood, et al., 1990) suggests that most efficacious teachers are female. More detailed gender comparisons at the high school may be appropriate.

6. A qualitative data component that would allow teachers to elaborate on other forces that possibly affect teacher efficacy such as the school goals and opportunities for interaction with colleagues might be beneficial.

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TEACHER PERCEPTIONS SURVEY

Part 1

A. My gender is: 1. Male 2. Female (please circle).

B. My principal's gender is: 1. Male 2. Female (please circle).

C. The highest level of education I have completed is:

1. Bachelors degree
2. Bachelor plus 15 hours
3. Masters degree
4. Specialist degree
5. Doctorate degree

D. Including the current school year, how many total years of teaching experience do you have? (please specify number of years).

_____ Years of experience.

E. Circle one of these three classifications you perceive your school to be most like:

1. Inner city 2. Working class 3. Upper middle class

PART 2

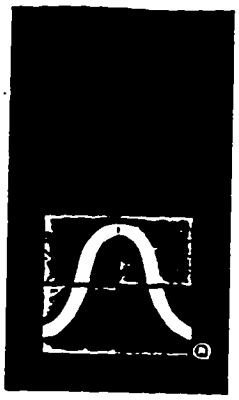
Please indicate the degree to which you agree or disagree with each statement below by circling the appropriate numeral to the right of each statement

1 = Strongly disagree
2 = Moderately disagree
3 = Disagree slightly more than agree
4 = Agree slightly more than disagree
5 = Moderately Agree
6 = Strongly Agree

		Strongly disagree	Moderately disagree	Disagree slightly more than agree	Agree slightly more than disagree	Moderately agree	Strongly agree
F.	When a student does better than usual, many times it is because I exerted a little extra effort.	1	2	3	4	5	6
G.	The hours in my class have little influence on students compared to the influence of their home environment.	1	2	3	4	5	6
H.	The amount that a student can learn is primarily related to family background.	1	2	3	4	5	6
I.	If students are not disciplined at home, they aren't likely to accept any discipline.	1	2	3	4	5	6
J.	When a student is having difficulty with an assignment, I am usually able to adjust it to his/her level.	1	2	3	4	5	6
K.	When a student gets a better grade than he/she usually gets, it is usually because I found better ways of teaching that student.	1	2	3	4	5	6
L.	When I really try, I can get through to most difficult students.	1	2	3	4	5	6

Appendix B (Continued)

		Strongly disagree	Moderately disagree	Disagree slightly more than agree	Agree slightly more than disagree	Moderately agree	Strongly agree
M.	A teacher is very limited in what he/she can achieve because a student's home environment is a large influence on his/her achievement.	1	2	3	4	5	6
N.	When the grades of my students improve it is usually because I found more effective teaching approaches.	1	2	3	4	5	6
O.	If a student masters a new concept quickly, this might be because I knew the necessary steps in teaching that concept.	1	2	3	4	5	6
P.	If parents would do more with their children, I could do more.	1	2	3	4	5	6
Q.	If a student did not remember information I gave in a previous lesson, I would know how to increase his/her retention in the next lesson.	1	2	3	4	5	6
R.	If a student in my classroom becomes disruptive and noisy, I feel assured that I know some techniques to redirect him/her quickly.	1	2	3	4	5	6
S.	The influence of a student's home experience can be overcome by good teaching.	1	2	3	4	5	6
T.	If one of my students could not do a class assignment, I would be able to accurately assess whether the assignment was at the correct level of difficulty.	1	2	3	4	5	6
U.	Even a teacher with good teaching abilities may not reach many students.	1	2	3	4	5	6



POWER PERCEPTION PROFILE

Perception of Others

Developed at Center for Leadership Studies
by Paul Hersey and Walter E. Natemeyer

Name of Leader MY BUILDING PRINCIPAL

PURPOSE

This instrument is designed to collect important information about the above named person. There are no right or wrong responses. We are collecting your perception of how you experience this person in their attempts to influence.

PART 1: Instructions for completing the profile

- Listed below are 21 pairs of reasons often given by people when they do the things the leader suggests or wants them to do.
- Allocate 3 points between the two alternative choices in each pair. Base your point allocations on your judgment of each alternative's relative importance as a reason for others' compliance.
- Allocate the points between the first item and the second item based on perceived importance as shown in the examples below, making sure that the numbers assigned to each pair add up to 3:

3 A	2 C	1 E	0 C
0 B	1 D	2 F	3 H

I respond to this leader's influence attempts because:

1.	A	I respect this person's understanding, knowledge, judgment and experience.
	B	This person possesses or has access to information that is valuable to others.
2.	C	I like this person and want to do things that will please.
	D	This person's position in the organization provides the authority to direct my work activities.
3.	E	This person can provide rewards and support to those who cooperate.
	F	I realize this person has connections with influential and important individuals.
4.	G	This person can administer negative consequences to those who do not cooperate.
	A	I respect this person's understanding, knowledge, judgment and experience.
5.	B	This person possesses or has access to information that is valuable to others.
	C	I like this person and want to do things that will please.
6.	D	This person's position in the organization provides the authority to direct my work activities.
	E	This person can provide rewards and support to those who cooperate.
7.	F	I realize this person has connections with influential and important individuals.
	G	This person can administer negative consequences to those who do not cooperate.

8.	C	I like this person and want to do things that will please.
	E	This person can provide rewards and support to those who cooperate.
9.	G	This person can administer negative consequences to those who do not cooperate.
	A	I respect this person's understanding, knowledge, judgment and experience.
10.	F	I realize this person has connections with influential and important individuals.
	B	This person possesses or has access to information that is valuable to others.
11.	A	I respect this person's understanding, knowledge, judgment and experience.
	D	This person's position in the organization provides the authority to direct my work activities.
12.	B	This person possesses or has access to information that is valuable to others.
	G	This person can administer negative consequences to those who do not cooperate.
13.	D	This person's position in the organization provides the authority to direct my work activities.
	F	I realize this person has connections with influential and important individuals.
14.	C	I like this person and want to do things that will please.
	A	I respect this person's understanding, knowledge, judgment and experience.
15.	G	This person can administer negative consequences to those who do not cooperate.
	D	This person's position in the organization provides the authority to direct my work activities.
16.	F	I realize this person has connections with influential and important individuals.
	C	I like this person and want to do things that will please.
17.	A	I respect this person's understanding, knowledge, judgment and experience.
	E	This person can provide rewards and support to those who cooperate.
18.	B	This person possesses or has access to information that is valuable to others.
	C	I like this person and want to do things that will please.
19.	D	This person's position in the organization provides the authority to direct my work activities.
	E	This person can provide rewards and support to those who cooperate.
20.	C	I like this person and want to do things that will please.
	G	This person can administer negative consequences to those who do not cooperate.
21.	B	This person possesses or has access to information that is valuable to others.
	E	This person can provide rewards and support to those who cooperate.

Read the following description of the power bases to interpret your perception of this person's influence attempts.

POWER BASES

A. **Expert Power.** The perception that the leader has relevant education, experience, and expertise.

B. **Information Power.** The perceived access to - or possession of - useful information.

C. **Referent Power.** The perceived attractiveness of interacting with the leader.

D. **Legitimate Power.** The perception that it is appropriate for the leader to make decisions due to title, role, or position in the organization..

E. **Reward Power.** The perceived ability to provide things that people would like to have.

F. **Connection Power.** The perceived association of the leader with influential persons or organizations.

G. **Coercive Power.** The perceived ability to provide sanctions, punishment or consequences for not performing.

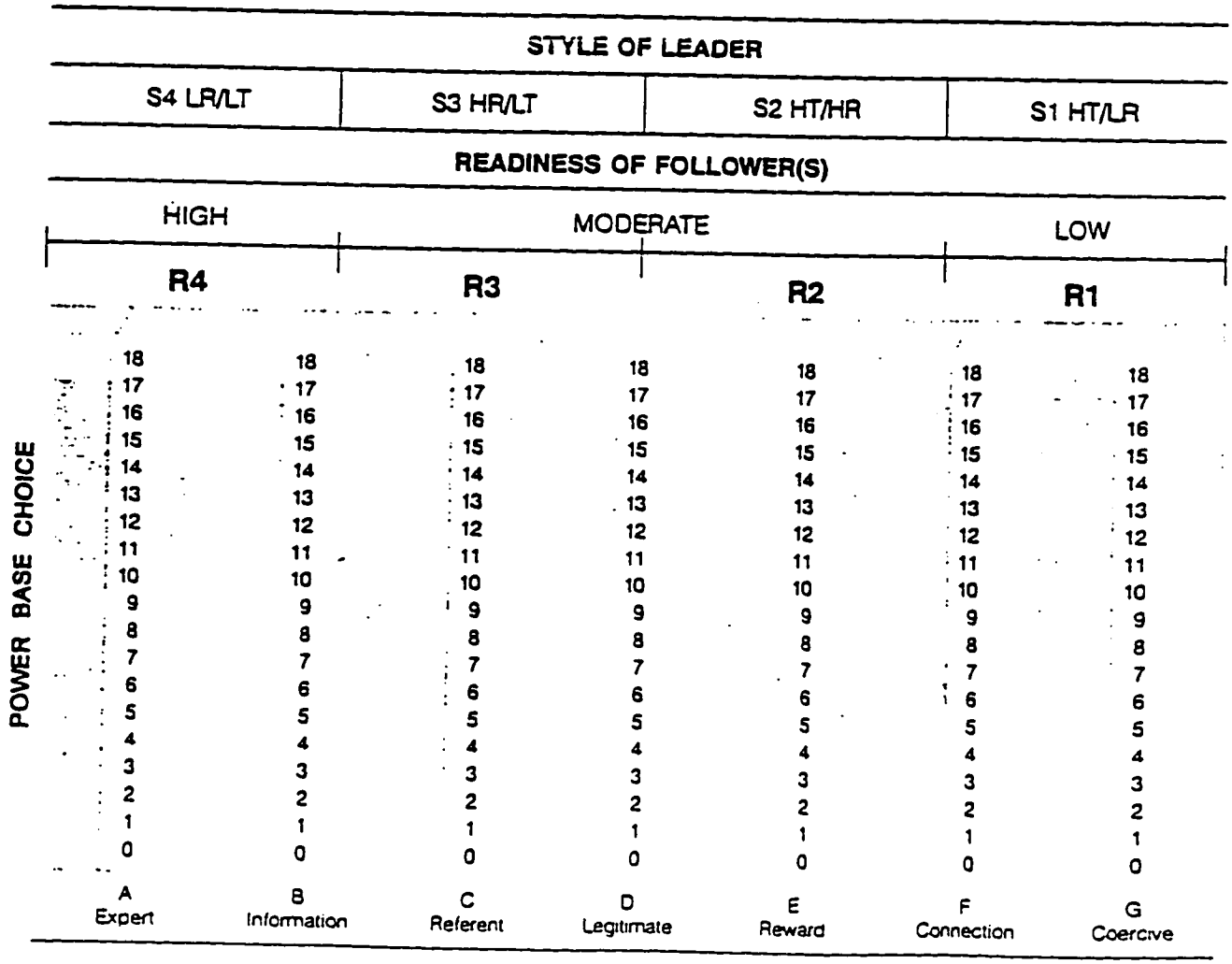
PART II: Power Choice Scoring: Reflects your perception of your uses of power

- Refer to the 21 pairs of Part I and add the points you gave to each of the A, B, C, D, E, F, and G choices.
- Enter the total points from each choice category into the boxes below. The sum of the boxes equals 63.

	A		B		C		D		E		F		G	
TOTALS:	☐	+	☐	+	☐	+	☐	+	☐	+	☐	+	☐	= 63

PART III: Power Choice Profile: Shows relative strength of the power bases you use

- Transfer your point totals from Part II onto the graph below by circling the corresponding numbers on each vertical scale.
- Draw a line to connect the circled numbers to complete the profile.
- Note the relative strength of each of your power base.



Appendix C (Continued)

PART IV: Power Comparison Scoring

- Compare this person's power bases to your perception of other leaders' use of power in similar positions or roles, circle the appropriate number from 0 to 18 on the following horizontal scales.

	Significantly less than others	Somewhat less than others	About the same as others	Somewhat more than others	Significantly more than others
A. EXPERT	0 — 2 — 4 — 6 — 8 — 10 — 12 — 14 — 16 — 18				
B. INFORMATION	0 — 2 — 4 — 6 — 8 — 10 — 12 — 14 — 16 — 18				
C. REFERENT	0 — 2 — 4 — 6 — 8 — 10 — 12 — 14 — 16 — 18				
D. LEGITIMATE	0 — 2 — 4 — 6 — 8 — 10 — 12 — 14 — 16 — 18				
E. REWARD	0 — 2 — 4 — 6 — 8 — 10 — 12 — 14 — 16 — 18				
F. CONNECTION	0 — 2 — 4 — 6 — 8 — 10 — 12 — 14 — 16 — 18				
G. COERCIVE	0 — 2 — 4 — 6 — 8 — 10 — 12 — 14 — 16 — 18				

PART V: Power Comparison Profile

- Transfer the circled numbers from Part IV to the graph below by circling the corresponding number for each vertical scale.
- Draw a straight line to connect the circled numbers to complete the profile of other leaders' use of power.

POWER BASE CHOICE

	A Expert	B Information	C Referent	D Legitimate	E Reward	F Connection	G Coercive
18	18	18	18	18	18	18	18
17	17	17	17	17	17	17	17
16	16	16	16	16	16	16	16
15	15	15	15	15	15	15	15
14	14	14	14	14	14	14	14
13	13	13	13	13	13	13	13
12	12	12	12	12	12	12	12
11	11	11	11	11	11	11	11
10	10	10	10	10	10	10	10
9	9	9	9	9	9	9	9
8	8	8	8	8	8	8	8
7	7	7	7	7	7	7	7
6	6	6	6	6	6	6	6
5	5	5	5	5	5	5	5
4	4	4	4	4	4	4	4
3	3	3	3	3	3	3	3
2	2	2	2	2	2	2	2
1	1	1	1	1	1	1	1
0	0	0	0	0	0	0	0

For more information on Situational Leadership® instruments, publications, training programs, video resources, and related materials, consult the **Situational Leadership® Resource Guide.**

Address inquires or orders to:

Center for Leadership Studies
230 W. Third Avenue
Escondido, CA 92025
Phone: (619) 741-6595 • Fax: (619) 747-9384

Sherri Gibson
5740 North Palm, Suite 105
Fresno, California 93704

August 28, 1996

Mr. Stephen Hardiman
111 Surrey Avenue
Council Bluffs, IA 51503

Dear Mr. Hardiman:

You have my permission to administer the Teacher Efficacy Scale as part of your doctoral research.

Sincerely,

Sherri Gibson

Sherri Gibson

University of Nebraska at Omaha
College of Education

Educational Administration and Supervison
Omaha, Nebraska 68182-0162
(402) 554-2721
FAX: (402) 554-2722

Center For Leadership Studies
230 W. Third Avenue
Escondido, CA 92025

Attention Orders:

As per our phone conversation of October 18, 1996, my name is Steve Hardiman and am a doctoral student at the University of Nebraska at Omaha doing research involving the administration of the "Power Perception Profile: Others."

Please ship to my business address, listed below, 500 copies of the Instrument: "Power Perception Profile: Others."

My understanding is that my cost will be $.95 for the use of these 500 instruments. Please charge $475. plus shipping to Visa card expiration 1/97.

Please ship this order to:

Steve Hardiman
Harmon Tucker Center for Vocational Education
815 North 18th. Street
Council Bluffs, IA 51501

I appreciate your willingness to expedite this order.

Sincerely,

Steve Hardiman

University of Nebraska at Omaha
College of Education

Educational Administration
and Supervison
Omaha, Nebraska 68182-0162
(402) 554-2721
FAX: (402) 554-2722

Dear Dr.(Name Omitted):

My name is Steve Hardiman and I am currently a doctoral student at the University of Nebraska at Omaha in the joint U.N.O./U.N.L. Program in Educational Administration. As per my phone conversation of October 10, 1996 with (Omitted), I am sending you this letter as a request to conduct a survey of a sample number of your high school teachers.

My research proposal focuses on the principal and staff at the high school level. The question it poses is: "What can principals do, in terms of their base of power, that will help their teachers feel that they are making a difference in their students' achievement?"

The title of my proposal is: "Teachers' Perceived Sense of Efficacy: Connections to Teacher Perceptions Of Principals' Power Bases." To analyze any potential relationship, I am administering the enclosed 37 item survey to a sample population drawn from all the high schools in M.O.E.C. This survey will require five to ten minutes to complete and is designed to be confidential without identifying any individual, school, or District.

Upon your approval of this research, my intent is to work through the principal at (Omitted) to facilitate conducting the survey.

University of Nebraska at Omaha
College of Education

Educational Administration
and Supervison
Omaha, Nebraska 68182-0162
(402) 554-2721
FAX: (402) 554-2722

I would like to send out my initial run during the first week of November.

As a high school administrator of 14 years, I realize that my request places an imposition on your valuable time and the principal's . However, the contribution the input your staff can make to the success of this research, and its implications to current research on the principalship, cannot be over-stated.

I anticipate that this research will be of both interest and value to you and would be happy to send you a copy, if you so desire. Your consideration of this proposal is appreciated. I have enclosed a self-addressed stamped envelope for your convenience in replying.

Sincerely,

Steve Hardiman
Doctoral Student

University of Nebraska Medical Center

INSTITUTIONAL REVIEW BOARD (IRB)
Eppley Science Hall
600 South 42nd Street
Box 986810
Omaha, NE 68198-6810
402/559-6463
Fax 402/559-7845

IRB APPLICATION FOR NON-THERAPEUTIC RESEARCH

SECTION I

1. APPLICATION DATA

TITLE OF PROTOCOL: Teachers' Perceived Sense of Efficacy: Connections to Teacher Perceptions of Principals' Power Bases

PRINCIPAL INVESTIGATOR: Stephen Hardiman

SECONDARY INVESTIGATOR(S): None

PARTICIPATING PERSONNEL: None

DEPARTMENT: Educational Administration TELEPHONE: 554-2721

ADDRESS: University of Nebraska At Omaha CAMPUS ZIP CODE: 68182-0162

FUNDING SOURCE: Self

ANTICIPATED ACTIVATION DATE: 11-15-96

STUDY SITE(S): School Districts: Council Bluffs, Omaha, Millard, Bellevue, Papillion, Ralston, Omaha District 66

2. CERTIFICATION OF PRINCIPAL INVESTIGATOR

Signature certifies that all listed investigators have reviewed the proposal and the IRB Guidelines for the Protection of Human Subjects and that the research will be conducted in full compliance with the HHS Regulations and UNMC policies governing human subjects research as stated in the IRB Guidelines. It is understood that IRB approval is valid for a period of 5 years. Continuing review is required in order to maintain the approval status and any changes in the study/methodology which affect the subjects must be approved by the IRB prior to implementation.

Stephen C Hardiman — Student — 11-4-96

SIGNATURE OF PRINCIPAL INVESTIGATOR | POSITION | DATE

3. CERTIFICATION OF PEER REVIEW

The Chairperson, authorized delegate, or appointed peer review committee of the principal investigator's department/division is responsible for peer review of the research proposal. Signature of approval certifies the proposed investigation has been approved and is recommended for submission to the IRB.

[signature] — Chair — Oct 17/96

NAME OF PEER REVIEWER | POSITION | DATE

Jack McKay

SIGNATURE OF PEER REVIEWER

University of Nebraska
Nebraska's Health Science Center
Institutional Review Board
For the Protection of
Human Subjects

University of Nebraska Medical Center
Eppley Science Hall 3018
600 South 42nd Street
Box 986810
Omaha, NE 68198-6810
(402) 559-6463
Fax (402) 559-7845

November 11, 1996

Stephen Hardiman
Educational Administration
UNO 0162

IRB # 146-97

TITLE OF APPLICATION/PROTOCOL: Teachers' Perceived Sense of Efficacy: Connections to Teacher Perceptions of Principals' Power Bases

DATE OF FULL BOARD REVIEW _____ DATE OF EXPEDITED REVIEW 11/06/96

DATE OF FINAL APPROVAL 11/11/96 VALID UNTIL 11/06/97

The Institutional Review Board (IRB) for the Protection of Human Subjects has completed its review of the above-titled protocol and informed consent document(s), including any revised material submitted in response to the IRB's review. The Board has expressed it as their opinion that you are in compliance with HHS Regulations (45 CFR 46) and applicable FDA regulations (21 CFR 50.56) and you have provided adequate safeguards for protecting the rights and welfare of the subjects to be involved in this study. The IRB has, therefore, granted unconditional approval of your research project. This letter constitutes official notification of the final approval and release of your project by the IRB, and you are authorized to implement this study as of the above date of final approval.

We wish to remind you that, under the provisions of this institution's Multiple Project Assurance for compliance with DHHS Regulations for the Protection of Human Subjects (MPA #1509), the principal investigator is directly responsible for submitting to the IRB any proposed change in the research or the consent document(s). In addition, any unanticipated adverse events involving risk to the subject or others must be reported to the IRB. This project is subject to periodic review and surveillance by the IRB and, as part of their surveillance, the IRB may request periodic reports of progress and results. For projects which continue beyond one year from the starting date, it is the responsibility of the principal investigator to initiate a request to the IRB for continuing review and update of the research project.

Sincerely,

E Prentice/lc

Ernest D. Prentice, Ph.D.
Vice Chair, IRB

EDP/lmc

University of Nebraska at Omaha
College of Education

Educational Administration
and Supervison
Omaha, Nebraska 68182-0162
(402) 554-2721
FAX: (402) 554-2722

Mr. (Name Omitted):

My name is Steve Hardiman and I am currently a doctoral student at the University of Nebraska at Omaha in the joint U.N.O./U.N.L. Program in Educational Administration. As per the enclosed, I have received District permission to conduct a survey of a sample number of your high school teachers.

My research proposal focuses on the principalship and staff at the high school level. The question it poses is: "What can principals do, in terms of their base of power, that will help their teachers feel that they are making a difference in their students' achievement?"

I am administering the enclosed 42 item survey to a sample population drawn from all the high schools in M.O.E.C. This survey will require ten to fifteen minutes to complete and is designed to be confidential without identifying any individual, school, or District.

I have randomly established which of your teachers will receive a survey. It will come to them in an individually addressed envelope which contains a copy of the enclosed letter, and survey, along with a self-addressed, stamped, return envelope. Their choice to respond is voluntary.

I would like to send out my initial run before the end of November. I will be contacting you prior to this to determine your preference for my distribution of the survey to your staff. As a high school administrator of 14 years, and teacher for 10, I realize that my request places an imposition on your valuable time and your staff's. However, the contribution the input you and your staff can make to the success of my research, and its implications to current research on the principalship, cannot be over-stated.

Sincerely,

Steve Hardiman, Doctoral Student

University of Nebraska at Omaha
College of Education

Educational Administration and Supervison
Omaha, Nebraska 68182-0162
(402) 554-2721
FAX: (402) 554-2722

Dear Teacher:

You have been randomly selected to participate in a doctoral research study being conducted by Steve Hardiman, who is completing his Ed. D. in Educational Administration through the University of Nebraska at Omaha/University of Nebraska, Lincoln Joint Doctoral Program.

This study: "Teachers' Perceived Sense of Efficacy: Connections to Teachers' Perceptions of Principals' Power Bases," has been approved for distribution by your District and focuses on high school teachers and principals.

The purpose of this study centers on what high school principals can do, in terms of their bases of power, that will promote high levels of teacher efficacy; their feelings of making a difference in students' achievement.

The research design is such that everyone's anonymity is protected. Seventeen high schools in the Metropolitan Omaha Educational Consortium (M.O.E.C.) will be sampled. No reference will be made to any individual, school, or District.

As one of the teachers selected to contribute to this project, you are asked to complete the enclosed survey. Although your District has approved your receiving this survey, your participation is entirely voluntary. The completion of the survey should take less than fifteen minutes of your time. Write directly on the survey, following the given instructions. When completed, place the survey in the pre-addressed stamped envelope, and mail the survey by November 29, 1996.

Your contribution to this research, through the completion of the attached survey, is important to the body of research describing principal-teacher relationships. Your participation will hopefully improve these relationships and student achievement. I thank you for your willingness to make a contribution through your completion of this survey.

Sincerely,

Steve Hardiman
Ed. D. Candidate

University of Nebraska at Omaha
College of Education

Educational Administration and Supervison
Omaha, Nebraska 68182-0162
(402) 554-2721
FAX: (402) 554-2722

Survey Overview

The following two-part survey is designed to describe the perceptions teachers have regarding teacher efficacy and how they perceive their principal's influence strategies.

The first part of the survey contains five general demographic questions. Part two contains 16 questions and comprises a well-known instrument known as the "Teacher Efficacy Scale." It describes "teachers' perceptions" about the effectiveness of good teaching strategies and their expertise in implementing them.

The third part of the survey, Power Perception Profile/Other, is made up of 21 questions related to the power bases teachers perceive "their building principal" utilizes in influencing others.

There are no right or wrong answers. The data represents your perceptions. In addition, each of the three parts of the surveys is numbered so as to keep the sets together as one unit. Be assured that this is not for the identification of any person, school, or District.

THANK YOU

Two weeks ago, you received a survey from Steve Hardiman, doctoral student at the University of Nebraska at Omaha, studying the relationships between Teacher Efficacy and Principal Power Bases. Thank you, if you have already completed and returned the survey.

PLEASE REPLY

If you have not returned the survey, please take a few minutes and return the survey in its self-addressed, stamped envelope. Please do so by December 10, 1996.

Your input is valued. If your survey has been misplaced, please call Steve at work (328-6408) or leave a message at his home (322-1809) for another copy.

Your contribution is greatly appreciated!!!