EXPLORING THE RELATIONSHIP OF ORGANIZATIONAL HEALTH AND ROBUSTNESS ON STUDENT ACHIEVEMENT AND ATTENDANCE

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CHAPTER I

Introduction

When earth science teachers in a middle school refer to the atmosphere of a particular planet, one aspect of the discussion might focus on the mix of oxygen, hydrogen, nitrogen, carbon and sunlight necessary for sustaining life. When geographers and travel agents speak of the climate, they are probably discussing average temperatures, rainfall and the like, of a particular location. Whereas atmosphere and climate usually apply to the study of selected characteristics and properties of planets and regions, it is noteworthy that the same terms are used as metaphors in the social sciences including political science or in applied fields of study like education. For instance, political scientists may reference the atmosphere of international negotiations or the climate of collective bargaining in labor relations. In education, one can observe claims in the literature that school climate is associated with school effectiveness (Baylor, 1988; Hunter, 1983; Lebert, 1993; Montgomery, 1990).

For educational administration, the study of school climate has resulted in the creation of additional metaphors. Each metaphor, in its own way and from its own perspective strives to capture, through the collective perceptions of teachers, the enduring quality

of the school environment which educators sometimes refer to as school climate (Hoy & Miskel, 1991). Among these metaphors for climate are organizational health (Hoy & Tarter, 1992; Miles, 1979) and environmental robustness (Anderson, 1982; Licata & Johnson, 1989; Licata & Willower, 1978; Willower & Licata, 1975).

Definitions

Climate

1. Conceptual definition: climate is the extent to which organizational members share the perception that the organizational behavior is supportive of personal needs and role expectations (Hoy & Miskel, 1991).

Environmental Robustness

1. Conceptual definition: teachers perceptions of the dramatic content of school structure (Willower & Licata, 1975).
2. Operational definition: 10 item Robustness Semantic Differential (RSD) for three concepts. Scores range from 10-70 for each concept. The higher the score the more robust is the concept (Licata & Willower, 1978).

Organizational Health

1. Conceptual definition: a healthy organization is one in which the technical, managerial, and institutional levels are in harmony (Hoy & Tarter, 1990).
2. Operational definition: Organization Health Inventory (OHI), secondary form, 44 items for teachers, seven subscales and one composite score measuring overall health. The higher the

score the more health (Hoy, Tarter & Kottkamp, 1991).

Social System

1. Conceptual definition: the context of administration as the hierarchy of relationships within a social system (Getzels & Guba 1957).

Socioeconomic status (SES)

1. definition: based on a factor composed of social variables, such as school free lunch and number of students per house hold.

Student Achievement

1. Conceptual definition: refers to student learning, a primary goal of school organization (Guba & Getzels, 1958, Parsons 1967).

2. Operational definition: Iowa Test Of Basic Skills (ITBS), and Average Daily Attendance (ADA).

Theoretical Framework

Social Systems

Getzels and Guba (1957) suggest social relationships were the focus for allocating and integrating roles to achieve the goals of the social system. Getzels and Guba (1957) described administration as a social process directed toward two dimensions, which are at once conceptually independent, and phenomenally interactive. Administrators' abilities to control, predict and understand observed behavior is considered dependent on the relationship between two

dimensions: the idiographic and the nomothetic. The nomothetic dimension, according to Getzels and Guba (1958), is composed of institutional roles defined by respective role expectations. The personality of particular role incumbents, defined by their needs dispositions, was the idiographic dimension. Thus, in their equation, B is observed behavior, R is the institutional role, and P is the personality of a particular individual taking a role. They claimed that behavior is the function of the interaction between efforts to accomplish role expectations and satisfy personal needs, equated:

$$B=f(R \times P).$$

The model is reminiscent of Lewin's (1951) well-known equation, $B=f(P \times E)$ relating observed behavior as a function of person and environment. In the Getzels and Guba (1958) framework, institutional role expectations applied to an individual's behavior is probably a more specific aspect of Lewin's more general notion of environmental influence.

In this context, the explanation of Getzels and Guba (1958) can be understood as the process of focusing role expectations and needs dispositions of organizational members on goal attainment. When individuals collectively believe that organizational norms and routines help them accomplish their role expectations and personal needs, they tend to experience a sense of belonging. Of course, when this collective interaction of virtually all role expectations and needs disposition is characterized by conflict (between expectations and needs), members are likely to experience a sense of alienation (Getzels & Guba, 1958).

For the purposes of this study, "climate is the extent to which organizational members share the perception that the organizational behavior is supportive of personal needs and role expectations". More specifically, we might note that in school organizations, goals are accomplished primarily by teachers working in classrooms with students. When the teacher group experiences a supportive school climate, through observations of the typical behavior of their colleagues, administrators, parents and others, the work with students is likely to be more effective. On the other hand, negative perceptions of their school climate are more likely to be associated with diminished effectiveness in helping students accomplish school goals. Put another way, the following modification of Getzels and Guba's (1958) serves as the theoretical grounds for this study. Student academic achievement (behavior) is in part a function of teachers' perceptions of school climate (the collective interaction of personal needs and role expectations). Whereas this study and it's modified theoretical framework focuses solely on the teacher group in school organization, the author recognizes that other organizational influences exist on student achievement, for example socioeconomic status (SES). Hoy, Tarter, and Kottkamp (1991) state that the negative correlation between institutional integrity and academic achievement suggests that teachers perceive more pressure and intrusion from the community, in schools with higher student achievement levels.

Whereas health and robustness are associated with inquiry on schools as social systems, the internal logic of both exhibit different conceptual origins. Health comes from Parson's (1953,

1967) notion of harmony among institutional, managerial and technical subsystems of school organization. Robustness draws heavily on Goffman's (1959) dramaturgical sociology and Durkhiem's (1947) description of the "ripple effect" of social structure (emphasizing the consequences of social structure for the audience rather than for particular actors). In more specific terms, health seems to be concerned with how often "the principal can procure from central office necessary site needs," or "the principal treats all faculty members as his or her equals" or "the school is vulnerable to outside pressures." (Hoy, Tarter, Kottkamp, 1991, Hoy & Miskel, 1991) On the other hand, robustness focuses on teacher reactions to a concept such as "my principal is..." If teachers believe they have a robust principal, they might respond that their principal is unusual, challenging, interesting, powerful, or active rather than usual, dull, boring, weak or passive (Licata & Willower, 1978).

Climate probably is associated with the school's ability to influence student choices about attendance or continuance (Morris & Ellett, 1987). Stated another way, with decreased student absenteeism or increased student graduation rates, either is likely to be associated with positive school climate. School average daily attendance serves as a proxy measure of school holding power in this study.

Problem Statement

After years of considerable empirical research, no widely accepted definition of school climate exists (Anderson 1982, Miskel

and Ogawa 1988, Tagiuri's 1967). Further, Hoy and Hannum (1997) believe the problem may be solved by focusing needs on the relationship of school climate to achievement in the middle school. Morris and Ellett (1987) alluded to a concurrent problem: what is the degree to which health and robustness predict the school's holding power?

Some evidence exists, gathered from teachers and principals, that shows robustness and health are associated with school-level student achievement (Hoy, Tarter and Kottkamp, 1991; Logan, Ellett and Licata, 1993). Little is known, however, about the relationship of teacher perceptions of school health, robustness, and SES on student academic achievement. This is the problem that this study proposes to address. Further, with the above stated problems in mind, this research attempts to contribute to theoretically grounded works on school climate generally.

Purpose of The Study

Given no clear rationale for predicting the combined or cumulative relationship of two climate constructs, health and robustness and SES on achievement and attendance, this study employed four research questions rather than hypotheses as guides to inquiry. The purpose of this study then, was to respond to these four questions in the form of tentative propositions that might be useful in better conceptualizing school climate as a predictor of student outcomes. Stated another way, this project's purpose is an attempt to explore the strength of organizational health and

environmental robustness as relational elements to student academic achievement. Because only one other study (Hoy and Hannum, 1996) has been the focus of an OHI middle school study and such a sample would provide an opportunity to assess further the OHI structure with middle school students, another purpose of this study then was to provide another sample for study.

Research Questions

Even though previous research shows a relationship between student achievement and organizational health (Hoy, Tarter, & Kottkamp, 1991) or student achievement and environmental robustness (Licata & Willower, 1978), respectively, we know little about the combined influence of organizational health and environmental robustness, on student achievement SES, or student attendance. In an attempt to help with this problem and find if:

1. Routine or frequent performance (perceived healthy conduct) may be enhanced when it is associated with empathy, creative improvisation and involvement (perceived drama or robustness), with the teacher's audience.
2. Rather than mixed metaphors, health and robustness may be complementary constructs.

four research questions, focusing on school-level analysis, are presented below.

RQ1: To what extent can variation in student achievement among schools be accounted for by the relationship between OHI and RSD variables?

RQ2: To what extent can variation in student achievement among schools be accounted for by socioeconomic status?

RQ3: To what extent can variation in average daily attendance among schools be accounted for by the relationship between OHI and RSD variables?

RQ4: To what extent can variation in average daily attendance among schools be accounted for by socioeconomic status?

Viewing school as a social system, the combination of the relationship of the constructs health, robustness, and SES on student achievement and attendance raises the possibility of improved definition, and measurement of school climate.

Limitations of the Study

The limitations of this study were:

1. This study was limited to certified public 47 public middle schools and the certified teacher and administrators within as designated by the Oklahoma State Department of Education, 1995-1996.
2. No private or parochial school schools or personnel were included.
3. The sample was limited to schools inside the geographical area 50 miles from the center of metropolitan Tulsa, Oklahoma.

Assumptions of the Study

The assumption of this study were:

1. It was assumed that the sample was representative of the target population and that the respondents from the sample were representative of the sample.

2. It was assumed that the Organizational Health Inventory accurately categorized the respondents perceptions.

3. It was assumed that the Environmental Semantic Differential accurately categorized the respondents perceptions.

3. It was assumed that the Iowa Test of Basic Skills accurately measured student achievement.

4. It was assumed that the Average Daily Attendance was accurately computed by each respondent

Summary

This chapter has provided the theoretical framework for the study and defined and measured school organizational climate. This framework included an introduction, and descriptions of social system. Included was definitions, purpose of the study, problem statement, and research questions that guide the study. The chapter concludes with limitations, and assumptions.

Chapter II will review selected related literature, chapter III will present the methodology of the study, chapter IV will show the results of the study, and chapter V will discuss the results of the study and suggest recommendations.

CHAPTER II

REVIEW OF LITERATURE

Introduction

This chapter will review research discussing, (1) school as social systems, (2) school climates, (3) health, (4) robustness (5) student achievement and (6) school outcomes and effectiveness.

Specific topics to be reviewed in this chapter include; social systems, school climate, motivation and climate, open climate, conceptual and organizational health and conceptual and organizational robustness, correlates of robustness, and teamwork and effectiveness, a summary will conclude the chapter.

Some organizational theorists, Getzels and Guba (1958) Hoy and Miskel (1991), Lebert (1993) have emphasized schools as social systems and view social interactions as a key to principals' influence in what happens in their schools. Lebert (1993) believes formalized rules, rewards, procedures, and authority relations may control the behavior of teachers, but specific emphasis on issues ignores the activity in organizations, that influences how individuals interact and behave (Lebert, 1993).

Social Systems

Underhill, (1992) found that theorists interested in exploring organizational behavior from a natural or social systems orientation gradually began to investigate the how and why of group members'

behavior under given conditions. Parsons (1976) state that schools control needs and services through technical, managerial and institutional control, schools mediate between the teachers and those receiving the services, the students and parents, and it procures the necessary resources for effective teaching. Hoy and Miskel (1991) feel that Getzels was a leading contributor to this line of research and attempted to formulate a general theory of administration to guide both theory and practice. Creating their view of school as a social system from the Getzels model, Hoy and Miskel describe leadership as a social process, structured hierarchically, to allocate resources and integrate roles and facilities to achieve the goals of the system (Hoy & Miskel, 1991).

Getzels and Guba (1958) perceived administration structurally as the hierarchy of subordinate-superordinate relationships within a social system (Hoy & Miskel, 1991). Hoy and Miskel believe that these interpersonal, or social relationships were functionally the locus for allocating and integrating roles and facilities in order to achieve the goals of the social system.

Getzels and Guba (1958) describe administration as a social system of two dimensions which are at once conceptually independent and phenomenally interactive. The ability to control, predict and understand observed behavior was dependent upon the relationship between the two dimensions (Hoy & Miskel, 1991).

Getzels and Guba (1958) wrote the general equation:

$$B = f(RXP)$$

where B is observed behavior, R is a given institutional role defined by the expectations attaching to it, and P is the particular role

incumbent defined by the need disposition (Getzels & Guba, 1958). As Patterson (1993) said, a system is a collection of parts that interact to function purposefully as a whole.

Hanson (1979) described the first Getzels and Guba (1958) model, organizational behavior, as a function of the normative or organizational dimension of role expectation and prescription and the personal dimension of individual personality and needs. Leadership was seen as less a function of coercive power than of influence and creating followership Hanson (1979). Getzels and Guba (1957) distinguished between administration, with the source of authority arising from a status position, and leadership, whose source lay in the entrusted authority extended by the followers. Hanson (1979) believes this cooperation with the superordinate rather than domination was what distinguished real leadership from bureaucratic management. Patterson (1993) stated that leaders will realize the power of employee freedom unencumbered by ridged hierarchies but bound by core values. Hyerle (1996) believes that human are social beings having a compulsive craving to engage with others. Intelligence gets shaped through interaction with others, justifying reasons, resolving differences, actively listening to another persons point of view, achieving consensus, and receiving feedback (Hyerle, 1996).

Getzels and Thelen (1960) expanded the first model to include group, cultural, and organic factors in the interactions between dimensions. Getzels, Lipham, and Campbell (1968) changed the model by giving importance to cultural factors and deleting group

factors. Later, Getzels (1978) gave more weight to the communities factor.

Mcpherson, Crowson, & Pitner, (1986) concluded that the Getzels and Guba (1958) model moved from closed to open and has become a predominate and useful approach for educational practitioners. Joyce, Wolf, and Calhoun (1993) believe that schools evolve as a cadre of scholars, drawn from all role groups and spheres, provide leadership on content ranging from community development, curriculum, instruction, to technology.

Hersey and Blanchard (1982) believe in this behavioral approach to power and leadership, the leader matching strategy to the situation to achieve a given goal. This concept formed the basis of situational leadership theory. Hersey and Blanchard (1982) reported that the leader initiated, more or less, behavioral control or structure depending upon the maturity level of the employee. Kegan (1995) called it transformational, leaders creating contexts for adults to change through new discourse forms in the organization, meaning changing the rules by which ones talks about. Passive, dependent subordinates needed direction and managerial monitoring, high task, low touch. Self-actualized, motivated people were left alone to structure their own jobs and seek personal fulfillment through task accomplishment, low task, low touch (warmth) (Hersey & Blanchard, 1982).

Underhill (1992) believes the maturity of the follower not only dictated leadership behavior it also determined the power base from which the leader would operate in order to generate compliance or influence behavior.

Some researchers Berman & McLaughlin, (1976), and Baylor (1989) believe the implications for change vary with the style of decision making. Hierarchical, top-down change started with changes in the organization then moved to changes in knowledge and attitudes of subordinate, much of the contemporary research indicated.

Miles (1982) believes this style leads to nonfunctional kinds of implementation and a failure to institutionalize the reforms. Hersey and Blanchard, (1982) believe participative change begins at the knowledge level and moved to the organizational level. Blanchard, Zigmari and Zigmari (1990) indicated this was a more effective means of overcoming resistance and short circuiting restraining forces.

Goodlad and Oaks (1988) implemented their model and found the hierarchical organization of high schools and the simultaneous difficulty of the staff in accessing knowledge, may conflict with Hersey and Blanchard's (1982) triadic model. Wojciehowski & Burton, (1989) found the model implied a shared responsibility, team ownership, and group problem solving modes appropriate to the collaborative consultation paradigm.

Blau and Scott (1962) and Blau (1964) also studied organizational influence, from a social system interaction perspective. Specifically, Blau (1992) claims to have focused on exchange processes in social relationships. Blau theorized that effectiveness in leadership is dependent on the social compliance of those being led (Blau, 1992). Blau's (1964) theory was used by Blumberg (1986) in describing how principals may gain affective

teachers strategies through an exchange where the principals offer something the teachers discern as valuable. Lebert (1993) believes that although Blau (1964) did not focus on school organizations specifically, his conceptual framework which considers social interactions and normative authority as keys to organizational influence, could be useful in understanding principal influence on instructional matters in schools. Kanter (1990) suggested the willingness of teachers to give energy and loyalty to a system is an important normative compliance mechanism. As Blau (1992) suggests, the obedience to demands becomes the normative necessity.

Hoy and Miskel (1991) found that formal power is legitimized through a process of individual approval, and strengthened by the establishment of social norms governing compliance. Also, they purposed that this could focus on the principals basic abilities to contribute to the group, and transform the contribution into group obligations where his potential for influence is maximized.

Etzioni (1975) said that reliance on institutionalized or normative group identification processes are necessary to enhance compliance with norms, regulations, suggestions, and orders. Etzioni (1975) believes a climate created, in that way, creates peer groups that can provide assurance that the organization's mission will be carried out. Etzioni (1993) states that attention should be focused on group norms and collective approval so these processes replace primary individual exchanges.

Hoy and Miskel (1991) believe that exchange theory centers on

the legitimation of power of the principal in his quest to gain compliance. Collective teacher approval allows the principal to set goals, implement programs and expect compliance whether or not all members agree or see immediate benefit. This important because Senge (O'Neal, 1995) believes, one characteristic of an organization with low ability to learn is that people at all levels see themselves as disempowered to make any change. Hoy and Miskel (1991) further believed authority is dependent on interaction rather than being a quality of an individual. The focus is on relationships as strong, relatively permanent, and definite influences of what a principal can or cannot do.

Hoy and Miskel (1991) believe that a social interaction standpoint examines how principals influence instructional programs and practices. Formal power is limited, as concrete rewards become relatively important. Organizational climate and normative support for influencing teaching practices are weak, attention should be directed toward the principal's ability to gain compliance informally (Hoy & Miskel, 1991). Hoy and Miskel (1991) believe exchange theory suggests a way of approaching the issue of principal leadership. It provides the chance to examine a part of leadership from an interaction perspective, how principals influence teachers to comply. Senge (O'Neal, 1995) believes principals with the greatest impact tend to see their job as creating an environment where teachers can continually learn.

School Climate

The problem with obtaining a specific definition of school climate is complicated because, as Levine (1986) states, a definition includes everything that takes place in school, climate includes the physical, financial resources, characteristics of people and groups...social systems, patterns of interaction...organizational structure...culture or beliefs...and values about what is important. However, Hoy, Tarter and Clover (1986) believe climate is a set of measurable properties of the work environment of teachers and administrators based on their collective perceptions. Anderson (1982) believes climate includes the total environmental quality within a given school, particularly as it pertains to the social interactions, the moral, sense of belonging, and the culture ambiance. Johnson, Dixon, and Johnson (1991) have defined climate as attributes specific to a particular organization that may be induced from the way an organization deals with its members and its environment. Within an organization the climate for each person takes the form of a set of attitudes and expectancies which describe the organization about both static characteristics and behavior outcomes (Johnson, Dixon, & Johnson, 1991). Hoy Tarter and Kottkamp (1991) state that school climate has also been identified with Edmond's (1979) model of effective schools in which he argues that strong administrative leadership, high expectations, a safe and orderly environment, an emphasis on basic skills, and a system of monitoring student progress constitutes a school climate that promotes academic achievement (Hoy, Tarter, & Kottkamp, 1991).

The beginning of studies on school climate is most often credited to the work of Halpin and Croft (1963). Their work today remains the base some referred to (Anderson, 1982; Hoy and Tarter, 1992; Kottkamp, Mulhern, & Hoy, 1987; Montgomery, 1991; Shrewsberry, 1990). Anderson (1982) suggests, in her review of research related to school climate, that definitions of climate in the literature tend to be verifiable intuitively rather then empirical.

Snyder and Anderson (1987) concluded that the qualify of life within a corporation (school) is an important measuring stick of excellence and the word will get around about which companies have nourishing environments for personal growth. Johnson, Dixon, and Johnson (1991) defined organizational climate as attributes specific to a particular organization that may be induced from the way an organization deals with its members and its environment. Also, they stated that within an organization the climate for each person takes the form of a set of attitudes and expectancies which describe the organization about both static characteristics and behavior outcomes (Johnson, Dixon, & Johnson, 1991).

Baylor (1989) investigated the relationship between leadership effectiveness of administrators and school climate in elementary schools in the District of Columbia. The investigation indicate that school administrators need to communicate their view about the instructional programs of a school. Baylor concluded that in doing so teachers are empowered and take an operative role in planning of instruction for the school (Baylor, 1989). Meier (1996) insists that good teaching is fostered by small schools, autonomy

over the critical dimensions of teaching and learning, lots of time for building relationships.

Strong (1990) considered school climate to include standards of achievement of a school, set expectations, provide orderly atmospheres, productive working environment, instructional improvement, and continued staff development. Despite the leadership orientation, or the awareness of one's power over teachers the quality of the climate of a school is the administrator's responsibility. Administrators need to be constantly aware of the mediating variables associated with a teacher's perception of the school environment. Montgomery-McMinn (1991) believe that a willing compliance of teachers was evident in schools where administrators established and communicated high expectations, set a good example themselves and solicited input. These variables were consistent with findings of effective schools literature school climates and investigations of authority relationships (Anderson, 1982; Boston, 1991; Brown, 1991; Connelly, 1992; Finn, 1987; Rice, 1989).

Cooper, Sieverding, and Muth (1988) believe that administrators have many opportunities to assure total understanding of the need to make school climates a healthy life sustaining place in which administers, teach, and learn. Further they believe that administrators need to provide such educational climates that keep teachers continually motivated, efforts should provide opportunities for advancement and professional growth and eliminate conditions in schools that limit the realization of deserved rewards (Cooper, Sieverding, and Muth, 1988). Senge

(O'Neal, 1995) believes that climate improved when multiple constituencies work together, teachers with bright ideas, in concert with principals with a particular view of the job, in concert with a superintendent and the people in the community who are part of the innovative process.

Engelking (1987) believes that motivation factors are collegiality, intrinsic rewards, opportunities for professional growth and advancement, increased responsibility, sharing in decision making, and recognition of a job well-done. Edwards (1995), in a Virgina school district study of teacher growth, found that collegial partnership allowed teachers to work together, to better understand teaching and learning. These factors recognize and perpetuate excellence, however, they are but a few of the avenues to be explored for opportunities of administrators to meet the separate teacher needs (Engelking, 1987).

Shrewsberry (1990) believes that are no important differences between leadership style and the climate factor of respect. However, important differences can be found within leadership styles and the remaining factors of trust, high morale, opportunity for input continuous academic and social growth, cohesiveness, school renewal, and caring. Additionally it has been Shrewsberry's (1990) opinion that there is higher percentages of teachers with positive perceptions than negative perceptions. An emphasis on high trust and high relationship behaviors for administrators who seek to improve school climate was a final conclusion (Shrewsberry, 1990).

McLaughlin et. al, (1986) believes that there are negative factors, in many educational climates that guarantee the failure of

teachers. The difference between an individual's motivation and talents and the working climate creates a situation that causes failure. McLaughlin (1996) believes that negative climate deny teachers a sense of efficacy, success and self worth. Administrators are believed to undermine teachers feelings of competency and efficacy. Teachers then complain about a lack of clear and consistent school policies, a lack of feedback from administrators, a lack of interaction with colleagues, and a lack of recognition (McLaughlin et. al, 1986).

The unique opportunity to shape the climate of a school, change behavior and gain goals is a huge responsibility. How the administrators accomplish such tasks, is how they influence teachers and decide the final outcomes of the behaviors in the school. Porter and Lemon (1988) believe that administrators can employ the seven power strategies listed:

1. Assertiveness - ordering of teacher to comply.
2. Ingratiation - ability to make teachers feel good .
3. Rationality - explaining the reasons for a request.
4. Sanctions - using administrative rewards and punishment.
5. Exchange - reciprocating benefits.
6. Upward Appeal - seeking the support of superiors.
7. Coalition - obtaining the support of a peer or subordinate group. (Porter & Lemon, 1988).

Redefer (1963) believes that good human relations skills would provide the principal with a tool for building competency and a positive perception of climate among his staff. Redefer suggested the following techniques.

1. Helping to establish a positive school climate.
2. Creating rapport with teachers.

3. Being firm but fair with discipline policy, getting tools and supplies into the hands of the teachers so they can complete tasks.
4. Seeing that teachers get the inservice training they need. (Redefer, 1963).

Porter and Lemon (1988) investigated teachers' perceptions of power strategies, in North Dakota. Principals were perceived by teachers to employ like strategies in their administrations, the results of the study concluded. Rationality was the most used strategy, although all strategies were employed. Ingratiation, upward appeal, coalitions, exchange assertiveness, and sanctions was the order in which strategies were used. The strategies most used were rationality and ingratiation. The study showed that more closed climate schools, 34%, existed than open climate schools, 22% (Porter & Lemon, 1988). Porter and Lemon (1988) also believe that closed climate schools were perceived by the teachers when they believed their administrators used assertiveness and sanctions. All teacher perceptions were based on their administrator's attempts at influencing behavior (Porter & Lemon, 1988). This is scientifically explained by Sylwester (1995) who believes that thinking of our brain as a computer engenders thoughts of an efficient economical tool, something that exists solely to serve others. We do strive to assist and cooperate, but we are also biological entities with our own intrinsic value. We are both a part of and apart from the others who share our climate (Sylwester, 1995)

Solman and Feld (1988), studying in Australia, observed the relationship between factors which cause stress in teachers. Poor

school climate was a major stress factor in the study, resulting in absenteeism. Solman and Feld (1988) concluded administrators had the power to modify and change school climate. Horerr (1996) believes that while principals can identify the constraints and roadblocks that keep us from them from exercising leadership, the task is to find ways to remove or go around the obstacle.

Kottkamp, Mulhern, and Hoy (1987) and Tarter and Hoy (1992) stated that, regardless of which system is used to analyze climate, three major questions arise:

1. Is climate to be conceptualized as an objective phenomenon or as a subjective phenomenon?
2. Is the reality upon which individuals act objective or individually and socially constructed?
3. If climate is measured by perceptions, are these perceptions basic properties of the organization or merely properties of the person perceiving it? (Kottkamp, Mulhern & Hoy, 1987; Tarter & Hoy 1992).

Kottkamp, Mulhern, & Hoy (1987) concluded that climate was identified through perceptual measures of organizational attributes, and although we assume that climate is socially constructed, it is a reflection of something out there, rather than merely idiosyncratic perceptions.

Power exercised by administrators can be designated into position power and personal power. Porter and Lemon (1988) believe that position power is the right of the administrator to make decisions and begin actions. Personal power involved a staff's willingness to agree to leadership. Also, that position power includes controlling resources, communicating information between teachers and parents, teachers and teachers, and teachers and

parents, establishing school rules and procedures, and rewarding or punishment of staff (Porter & Lemon, 1988). Hoy and Miskel (1991) believe that personal power comes from the administrator's methods of persuading and inspiring teachers to be motivated.

Hoy and Miskel (1991) considered the leadership effectiveness of administrators must involve the use of both types of power to insure a positive school climate. Some leadership studies indicated a relationship exists between leadership effectiveness and the climate of an organization (Bridges & Doyle, 1968; Gapport & Gutridge, 1980; Kunz & Hoy, 1976). Porter and Lemon (1988) believe that, according to these studies, administrators can create distinct climates by merely changing leadership style, and that the climates have a lasting effect on group behavior. Schlechty (Brandt, 1993) believes it is a systemic change, changing the system of norms, the regular and patterned way of doing things, how power is distributed, how decisions are made, and what the business is. Part of this change as Steinberg (1996) explains, is recognizing that parents and peers have more influence on student achievement than teachers and must be utilized for eventual climate improvement.

Administrators need not underestimate their power in deciding a buildings culture and the climate. Armstrong (1989) advocates that it is within the grasp of administrators to make a difference in whether a teacher feels over burdened and powerless or valued and respected. Further, Armstrong believes to accomplish this, it is crucial for administrators to listen to employees, work to reduce conflict within the school setting, and assure employees of the value of their contribution (Armstrong, 1989).

Administrative priority needs to be focused on making positive climates. Calabrese (1987) believes administrators are the agents who foster a school climate that encourages maximum performance by students and teachers. Calabrese (1987) insists that administrators must recognize that in the education process today, there is both positive and negative stress. Schlechty (Brandt, 1995) insists that it was not what the teacher does that's important, it is what the teacher gets the student to do that important. Positive stress is necessary, however, negative stress has a devastating effect on classroom instruction and school climate (Calabrese, 1987).

Educators are constantly seeking methods for improving schools. Gapport and Gutridge (1980) declared schools need a new type of leadership, but training for principals continues to emphasize managerial skills. They believed this contributes to the lack of understanding and communication between administrators and staff. What principals really need is training that will equip them with the intellectual and human relations skills necessary to manage improvement efforts in their schools (Gapport & Gutridge, l980). Schlechty (Brandt, 1995) believes that improving schools meant restructuring rules, roles, and relationships that govern the way time, people, space, knowledge, and technology are used.

The research has provided evidence to support that there are many factors to consider in assessing the elements that contribute to climate in a social system, as perceived among teachers. Rempel and Bentley (1964) maintained that what one believes and feels is more important than conditions as perceived by others.

This section has explored the basic views underlying the concept of climate. The next section will explore the importance of motivation and school climate.

Motivation and Climate

Jones (1993) concluded that outstanding school administrators must have a capability of motivating people to explore new avenues of instruction, to grow professionally, and to change. In order to be a motivator, Braun (1991) believes administrators must utilize fundamental theories of motivation. Personal regard for teachers, communication with teachers, recognition of teachers, and participation of teacher's in the total administrative process fosters and determines a school's successful climate (Braun, 1991).

Lehman (1989) stated that administrators who are visible and available to teachers develop personal relationships with teachers. The personal relationship enhances the communication process. Furthermore, he believed that the administrator can utilize the relationships to involve participation in the decision-making process. Recognition of input and recognition of jobs well done accomplish even greater enhancement of motivation and of positive school climate (Lehman. 1989). Administrators who identify teacher successes are known to be effective administrators who motivate through their involvement and reinforcement (Blase, 1986). In short, as Glickman (1991) believes, the principal should strive to be not just the instructional leader, but a leader of instructional leaders.

A survey of Illinois teachers, by Feistritzer (1986), indicated that teachers consistently list the same reasons for selecting teaching as a career. An opportunity to use their minds and skills. a chance to work with young people, and the anticipation of a job well done were primary reason's teachers opt to teach. Of the teachers surveyed, only 51% of public school teachers and 33% of private school teacher's were concerned with salaries. Loving to teach was an attribute consistent with 96% of the teachers (Feistritzer, 1986).

Mitchell and Peters (1982) believe that too few administrators nurture and support effective incentive systems. Monetary rewards are viewed as the essential incentives for good teachers by administrators who do not understand the potency of intrinsic satisfaction. Hoerr (1996) believed that if teachers are to invest their time and energy, they need to perceive a climate where they will be heard and make a difference on substantive issues.

Brandt (1993) postulates that teacher educators have yearned to be seen as professionals, and efforts by the administrator need to be made to provide mobility within the teacher ranks to achieve this. Feistritzer (1986) found that more autonomy in what and how teachers teach need consideration. Pay based on performance, seniority, and level of education could also be considerations at the administrative level. Brown (1991) states that after being motivated to the fullest extent, teachers need to be continually provided with opportunities for job satisfaction. Job satisfaction and how it relates to teachers' needs becomes an important factor in creating positive climates. Effective, positive administrator and teacher relationships are characterized by respect for one another,

participatory management, and increased productivity and efficiency (Brown, 1991).

Administrators need to develop a framework to expand existing programs and develop a continuing commitment to teacher satisfaction. Leslie (1989) states that it is valuable for administrators to seek ways to provide teachers With knowledge of their importance and expertise and their contributions to society and to the future.

Reinke (1989) believes research on factors affecting Catholic school's climate in Louisiana shows that school programs need to incorporate morale building elements to produce positive influences within the school. Helm (1989) thinks administrators should work to show climate setting behaviors by encouraging positive relationships among teachers, positive morale, cooperative instructional leadership, and collaborative decision making. With efforts to these factors, administrators should become effective and transformational leaders (Helm, 1989).

Sontegerath (1992) discovered that Catholic educators perceive that attention on identification, recruitment, and formation of Catholic school leaders should be a priority. This process he believes is considered to be critical. Research by Seymor (1990) concludes that specialized courses that explore the perceptions of leadership behavior should be offered at the university level for teachers and administrators. Additionally, site assistance in this area should be provided as necessary for school groups (Seymor, 1990).

In New York State, Connelly (1991) investigated perceptions of administrators effectiveness, school climate, and student achievement. The analysis of the findings did not find any relationship between teacher perception of school climate and student achievement. Also, noted was that the combination, of administrator effectiveness and school climate accounted for 5.4% of the variance in teachers' perceptions of student achievement (Connelly, 1991).

Hoerr (1996) believes to improve motivating techniques, administrators should base actions on basic assumptions. The first assumption is that administrators must trust their teachers (Hoerr, 1996). Rice (1986) believes that the administrator's job is to empower teachers to accomplish their best. Administrators should realize that they are not guardians watching for teacher slackness or failure. Instead, administrators should be skilled in motivating teacher growth. To accomplish motivational techniques that provide for success for teachers will do much in creating positive climates (Rice, 1986).

Power could lead to abuse, it should be tempered with maturity and a high degree of self-control. McClelland and Burnham (1976) believe the power of an effective administrator is concerned with the power to influence people to get a directed benefit, not the power to achieve personal goals. Fullan (1992) believes that the high-powered charismatic principal who transforms the school can be blinding and misleading, because so much depends on their personal strength. When the principal leaves, the school declines because the climate of change did not allow teacher participation

(Fullan, 1992). McClelland and Burnham (1976) concludes that the power exercised needs to build subordinates' responsibility and strength, reward them for good performance, and foster a strong team spirit. Fullan and Hargraves (1991) believe that power should be centered less on the egotistical needs of an administrator to increase the opportunity for principals to learn what parts of their visions are flawed and what parts of teacher visions are valid. This would offer opportunities for the total success of subordinates and the organization (Fullan & Hargraves, 1991).

Washington (1991) conducted a study in Louisiana to learn ways in which power was exercised and its influence on the school setting. One hundred and twenty-one teachers were asked, through randomly distributed questionnaires, what their perception of administrative power was and if there was a relationship to teachers' attitudes in the work environment. Administrators were asked to respond to questionnaires and personal interview. Both administrator and teachers reported the same perceptions of overuse in the utilization of power (Washington, 1991). It is interesting that female administrators were perceived to use more personal power, and male administrators were perceived to use more positional power.

Washington (1991) also found that administrators did feel empowered by their position. They understood the effective role teachers play in the decision making process. Also, administrators noted that some decisions can only be made by the principal (Washington, 1991).

The literature reviewed indicates conditions of the climate in a school, as seen by the teacher, is a variable which may effect compliance. The principal has the greatest control over the perceived quality of a school. The principals ability to manipulate the factors that determine climate may have a indefinable impact on teaching quality. This section has explored the basics of motivational climate the next section will review the open climate.

Open Climate

Halpin and Croft (1957) found in their original OCDQ studies that open climates are those in which there is reality centered leadership of the principal, a committed faculty, and no need for burdensome paperwork, close supervision, or a plethora of rules and regulations.

Hoy and Miskel (1991) found that a distinctive feature of the open climate is its high degree of drive and resolve and low disengagement. Hoy and Miskel believed this combination suggests a climate in which both the principal and faculty are genuine in their behavior (Hoy & Miskel, 1991). Hoy, Tarter, and Kottkamp (1991) believe that the principal leads through example by providing the proper blend of structure and direction as well as support and consideration, the mix dependent upon the situation. Teachers work well together and are committed to the task at hand. Hoy and Miskel (1991) believe that acts of leadership emerge easily and appropriately as they are needed. The open school is not preoccupied exclusively with either task achievement or social needs

satisfaction, but both emerge freely (Hoy & Miskel, 1991). Specifically, the behavior of both the principal and faculty is authentic.

Other features of the open climate proposed by Hoy and Miskel (1991) include the cooperation and respect that exist between the faculty and principal. Hoy and Miskel (1991) think that this combination suggested a climate in which the principal listens and is open to teacher suggestions, gives genuine and frequent praise, and respects the professional competence of the faculty, called, high supportiveness.

Hoy, Tarter, and Bliss (1989) believe principals should also give their teachers room to perform deleting unnecessary observation, which they call low directiveness, and maintain a facilitating type of leadership behavior without the standard bureaucratic trivia, which they call low restrictiveness. Also, teacher behavior supports open and professional interactions, high collegial relations among the faculty. Teachers know each other well and are close personal friends, high intimacy. They cooperate and are committed to their work, a low disengagement (Hoy, Tarter, Bliss, 1989). George et. al. (1992) believe that teachers then have high expectations for success and are optimistic about the schooling they are a part of, they seek high standards for themselves and their students. Hoy and Miskel (1991, 1997) believe the behavior of both the principal and the faculty must be open and authentic. Brandt (1996) believes that if administration wants to improve schools, they must look to the society of which they are a part. If a

development of a climate for learning is wanted, administrators cannot stop at the school house walls (Brandt, 1996).

This section has reviewed open climate, the next section will review organizational health.

Health

Conceptual Health

Parsons, Bales, and Shils (1953) believed that social systems, if they are to grow and develop, must satisfy four basic needs: (1) acquiring sufficient resources and accommodating these resources to the environments, (2) setting and achieving goals, (3) maintaining internal solidarity of organizational members, and (4) creating and preserving a unique value system. Etzioni (1975) suggests that organizations must be concerned with the instrumental needs of adaptation and goal achievement as well as the expressive needs of social and normative integration. Etzioni further suggests that healthy organizations effectively meet both sets of needs.

Miles (1969) defined a healthy organization as one that survives in its environment and continues to cope adequately over the long haul. Moreover, it continuously develops and extends its surviving and coping abilities. Implicit in this definition is the notion that healthy organizations deal successfully with disruptive outside forces while effectively directing energies toward the major goals and objectives of the organization. Parsons (1967) noted that schools control needs and services through technical

(teaching and learning), managerial (school administration and teachers), and institutional (central office and community) levels of control. Parsons (1967) said that these levels of school organization; (1) mediate between teachers and those receiving services, students and parents, (2) procure the necessary resources for effective teaching and maintain stable relationships with the external environment. For Hoy and Forsyth (1986), and Hoy and Tarter (1992, 1997), a healthy organization is one in which the technical, managerial and institutional levels are in harmony. Harmony among all levels means that the system is protected from unreasonable community and parental pressure. The school successfully resists all narrow efforts of vested interest groups, to influence policy. Hoy, Tarter and Kottkamp (1991), and Hoy and Miskel (1991) suggests that the principal should provide dynamic leadership, that is both task-oriented and relationship-oriented (leadership associated with Getzels and Guba's (1957]) two dimensions).

Hoy and Miskel (1991) suggests two dimensional behavior is supportive of teachers and yet provides direction and maintains high standards of performance. Hoy, Tarter, and Kottkamp (1991) suggests that the principal has influence with superiors and the ability to use independent thought and action. Edmonds (1979) notes that teachers in healthy climates are committed to teaching and learning, set high achievable goals for students, maintain high standards of performance, and ensure the learning environment is orderly and focused.

Consistent with their general definition of climate, organizational health is defined "as the extent of humanity in the technical, managerial, and institutional levels of a school organization" (Hoy & Miskel, 1991; Parsons, 1967). A humane system is one that is sensitive to individual needs and role expectations. In this sense, Hoy & Miskel (1991) believed specifically that a healthy school is one in which the technical, managerial, and institutional levels are in harmony; and the school meets its imperative needs as it successfully copes with disruptive external forces and directs its energy towards its mission.

The synthesis of initial inquiry by Hoy, Tarter, and Kottkamp (1991) suggests, conceptually and operationally, that the organizational health of secondary schools is defined by seven interaction patterns. These school health components meet the critical instrumental needs of the social system and represent three levels of control within the school. They are: (1) institutional: integrity, principal influence, and consideration, (2) managerial: initiating structure, resource support, morale, and (3) technical: academic emphasis.

Hoy Tarter and Kottkamp (1991) suggest health had seven dimensions, and Hoy and Miskel (1991) note that health was the variation between the dimensions, summarizing the research by noting that a healthy organization meets its instrumental expectations (role expectations) and expressive needs (need dispositions). Also, it copes with disruptive outside forces, as it directs its energies toward its mission. More specifically, Hoy and Tarter (1992) suggests that relationships are more open in a healthy

climate, teachers are more productive, and administrators more reflective. Consequently, student masteries of the curriculum, in their academic achievement and learning are at relatively high levels (Hoy, Tartar, & Bliss, 1990).

Finally, Hoy, Barnes, and Sabo (1995) and Hoy and Tarter (1997) believe that middle school climate is conceptualized as the collective perceptions of teachers about the relations in school between teachers and students, teachers and administrators, teachers with each other, and the school and the community (Hoy, Barnes & Sabo 1995; Hoy & Tarter, 1997).

Organizational Health

Hoy and Forsyth, 1986, Hoy and Feldman (1987) believe that the organizational health of a school is another framework for conceptualizing the general atmosphere of a school. Tarter and Hoy (1988) give credence to the notion of positive health in an organization is not just now calling attention to conditions that facilitate growth and development. Miles (1969) defined a healthy organization as one that not only survives in its environment, but continues to cope adequately over the long haul, and continuously develops and extends its surviving and coping abilities. Hoy and Feldman (1987) believe that implicit in this definition is the notion that healthy organizations deal successfully with disruptive outside forces while effectively directing their energies toward the major goals and objectives of the organization.

Parsons, Bales, and Shils (1953) believe operations on a given day may be effective or ineffective, but the long-term prognosis is favorable in healthy organizations. All social systems, if they are to grow and develop, must satisfy the four basic problems:

1. Acquiring sufficient resources, and accommodating these resources to their environments.
2. Setting and achieving goals.
3. Maintaining internal solidarity.
4. Creating and preserving a unique value system (Parsons, Bales, and Shils, 1953).

Etzioni (Berreth & Scherer, 1993) believe that the organization must be concerned with the instrumental needs of adaptation and goal achievements as well as the expressive needs of social and normative integration. Etzioni (1975) postulates that healthy organizations effectively meet both sets of needs. Parsons, Bales, and Shils (1953) suggest that formal organizations such as schools exhibit three distinct levels of responsibility and control over these needs, the technical, managerial, and institutional levels. Hoy, Tarter, and Kottkamp (1991) believe the technical level produces the product. In schools, the technical function is the teaching-learning process, and teachers are directly responsible. Educated students are the product of schools, and the entire technical subsystem revolves around the problems associated with effective learning and teaching (Hoy, Tarter, Kottkamp, 1991).

Hoy and Miskel (1991) believe that the managerial level mediates and controls the internal efforts of the organization. The administrative process is the managerial function, a process that is qualitatively different from teaching. Principals are the prime administrative officers in schools. They must find ways to develop

teacher loyalty and trust, motivate teacher effort, and coordinate the work (Hoy & Miskel, 1991).

George et. al. (1992) believe that teacher needs are continually a concern for the administration, freedom to create, innovate and feel the climate is open to try new ways of doing things.

Hoy and Miskel (1991) found that the district administration bridges the gap between the organization and its environment. Schools should be seen as a positive factor, and have community. Hoy and Miskel stated that it is common knowledge that administrators and teachers need support to perform their respective duties in a friendly fashion without heavy pressure from individuals and groups outside the school (Hoy & Miskel 1991).

Hoy and Tarter (1992) believe that the Parsonian framework provides an integrative scheme for conceptualizing and measuring the organizational health of a school. Hoy and Miskel (1991) specifically believe a healthy organization is one in which the technical, managerial, and institutional levels are in harmony. For Hoy and Miskel (1991) the healthy school is protected from unreasonable community and parental pressures. The board successfully resists all narrow efforts of vested interest groups to influence policy. Hoy, Tarter, and Kottkamp (1991) believe the principal of a healthy school provides dynamic leadership, leadership that is both task-oriented and relations-oriented. Such behavior is supportive of teachers and yet provides direction and maintains high standards of performance. The principal has influence with superiors and the ability to use independent thought and action (Hoy,

Tarter, & Kottkamp 1991). Hoy and Miskel (1991) believe the teachers in a healthy climates are committed to teaching and learning, set high and achievable goals for students, maintain high standards of performance, and ensure the learning environment is orderly and serious.

Hughes (1974) believe that students work hard on academic matters, are highly motivated, and respect other students who achieve academically. Classroom supplies and instructional materials are accessible. Also in a healthy school, teachers like each other, are enthusiastic about the work, are proud of their school, and as Hughes suggests, trust each other (Hughes, 1974).

Hoy has claimed that there is a correlation between the openness and health of schools, high thrust, high esprit, and low disengagement (Hoy and Tarter, 1990). Tarter, Hoy, and Bliss (1989), and Tarter, Hoy, and Kottkamp (1991) believe open schools tend to be healthy and healthy schools tend to be open. Health is also related to the organizational commitment of teachers to their schools; healthy schools have more committed teachers (Tarter, Hoy, & Bliss, 1989, Tarter, Hoy, & Kottkamp, 1991). Hoy, Tarter, Kottkamp, 1991 believe that healthy, open schools have committed teachers, but intimate schools with strong cohesive social relations do not necessarily generate teacher commitment. The relatively weak relationship of commitment to socioeconomic status (SES) suggests that commitment is more a consequence of the inner workings of the school rather than the community setting (Hoy, Tarter, Kottkamp, 1991).

Hoy, & Tarter (1992) believe that in a healthy climate the organization is meeting both its instrumental and expressive needs, coping with disruptive outside forces as it directs its energies toward its mission, relationships are more open, teachers are more productive, administrators more reflective and students achieve at higher levels.

Finally, Hoy and Hannum (1997) believe collegial principals are most likely to create school climate conductive to student achievement.

Robustness

Conceptual Robustness

Drawing on Goffman's (1959) notion that social interaction can be understood using the theater as a metaphor and identifying actors, plots, sets, and audiences, Willower and Licata (1975) defined the drama of school structure, as environmental robustness. Willower and Licata (1975) suggested those school structures, such as interscholastic sports, student-teacher conflict, final examinations, and alternative or innovative programs could be understood in terms of audience empathy for the actors and the perception of drama or environmental robustness. Willower and Licata (1975) and Licata and Johnson (1989) suggested that this type of role taking by the audience was noted in the 1940's by Durkheim (1947) who suggested that the punishment of a crime has more important "consequences" for society than for the criminal.

Licata and Johnson (1989) suggested that while evoking the

heightened mental and emotional involvement of the audience the presence of conflict within a play or novel creates within the observer a tension (cognitive dissonance) that seeks resolution . By creating and subsequently delaying its resolution, the skilled author proves adept at using conflict to sustain the emotional involvement of the audience. Theatrical performances and literature conflict, or dissonance, in general, is thought to be a central feature of any dramatic social situation, often keeping members of the audience on the edge of their seats. No matter how dramatic the school structure is thought to be, excessive repetition leads to monotony. Regularly occurring novelty, change or humor (relief structure) serve to break up monotony and sustain audience perceptions of dissonance, drama, or robustness (Licata & Johnson, 1989).

Summarizing research findings, Licata and Johnson (1989) suggest that robust school and classroom environments exhibit amiable relationships, faith in the ability of others to be self-reliant and self-governing, diverse values and activities, clear goals, and shared decision making. A friendly school with multiple interests, convictions and ideas that are free to emerge is likely to have surprising and challenging things occur. In such environments patterning and repetition may be apparent and provide a reasonable level of predictability but monotony is reduced by a healthy combination of dissonance and relief structure (Licata & Johnson, 1989).

Willower and Licata (1975) originally used a metaphor, school as theater, to describe the school structure, this gave rise to perception of drama or robustness. Licata and Johnson (1989)

suggested that new findings call for a revision of the metaphor. Robust schools and classrooms seemed to Licata and Johnson to be reminiscent of theater that employs the play within a play technique as means toward the enhanced audience role taking. They recalled Wassermann's (1965) adaptation of Cervantes' Don Quixote in the Man of La Mancha. In the play, Cervantes is imprisoned during the Spanish Inquisition. He tells the story of Don Quixote (outlines the plot) for his fellow prisoners. He encourages them to improvise their roles, as they see fit. By taking the role of both actors and audience, the prisoners tend to develop empathy for the characters they play.

In the same sense, robust environments likewise allow for student or teacher improvisation and involvement. For example participative decision making (another play within a play), can be a robust activity. Ideas can be presented and exchanged, challenges met, and problems solved without fear of being ridiculed by others. Whereas it is certainly true that not all robust environments provide for relative audience safety, one should not be surprised that robust and safe environments are often associated with effective educational practice (Licata & Wildes, 1980; Morris, 1986).
In this study, the environmental robustness concept seems to take the general definition of climate one step further.

A synthesis of robustness research indicates that when formal and informal structure support role expectations, individual needs, or the humanity of the system, people may tend to become spontaneously involved as actors (rather than audience). In this sense, robustness highlights the degree to which organizational

behavior is perceived by the group as spontaneous role taking or involvement directed toward legitimate goals. Thought of another way, once the impediments to meeting role expectations and individual needs are no longer a factor, principals, teachers or students, may experience a transition from audience to fully involved actors (Licata & Willower 1978).

Licata and Willower (1978) employed the semantic differential technique (Osgood, et. al., 1957) to measure environmental robustness. The Robustness Semantic Differential (RSD) gathers audience (students, teachers, principals) perceptions about a particular concept (My Class is.. or My School is...). Ten adjectives; interesting, fresh, meaningful, important, unusual, powerful, active, thrilling, action-packed, and challenging reflect robustness. Another ten; boring, stale, meaningless, unimportant, usual, weak, passive, quieting, uneventful, and dull reflect the absence of robustness. For instance, respondents might assess the relative robustness of the concept "My school is..." by reacting to adjective pairs that include interesting-boring, active-passive, challenging-dull or powerful-weak. The ten adjective pairs are representative of a single factor or dimension called environmental robustness (Licata & Willower, 1978).

Ellett and Licata (1982) found that the relative robustness that teachers ascribe to their role and to their principal's role are associated with positive attitudes toward opportunities for professional performance and development, and the educational effectiveness of their school. Teachers also associated principals' robustness with positive sentiments about the quality of building-

level supervision, colleague relations, and school programs for evaluating student progress. The robustness that these teachers attributed to their students was associated with their confidence in the school's effectiveness and evaluation programs. Teacher perceptions of principal robustness have been significantly correlated with their positive sentiments about school vision (Licata, Greenfield & Teddlie, 1990). Robust classrooms tend to be staffed by teachers with relatively humanistic pupil control ideology and behavior (Estep, Willower & Licata, 1980; Multhauf, Willower & Licata, 1978). Further, Logan, Ellett and Licata (1993), Morris (1986) and Morris and Ellett (1987) reported correlation's between multiple robustness concepts and school-level student achievement and attendance. Ortiz and Ellett (1988) reported positive relationships between robustness and elementary school student learning and retention in a computer assisted environment.

Organizational Robustness

Students sometimes say that school is boring, for adults a visit to the old school or memories of past school days do not always bring about the same feelings. Willower and Licata (1975) describe the drama of school life through the development of a school climate variable that they refer to as environmental robustness. A possible bases for robustness is Goffman's (1959) thought that social interaction can be understood using drama type metaphors, that identifying actors, plots, settings, and audience. Licata, Teddlie, and Greenfield (1990) suggest that school

structures such as interscholastic sports, student teacher conflict, final examinations, and alternative or innovative programs could be understood in terms of audience empathy for the actors and the perception of situational drama or environmental robustness. Willower and Licata (1975) say school and classroom life can indeed be characterized by circumstances of high drama. Further, Willower and Licata, believe variation in school and classroom structure may in fact be associated with variation in student and teacher perceptions of the drama of everyday life in schools (Willower & Licata, 1975).

Lambert (1988) had a well publicized newspaper report of school life showing some of the initial interest in environmental robustness. Licata and Johnson (1989) report that the Lambert account highlighted the work of a successful math teacher, Jaime Escalante, a 57 year-old, Bolivian native teaching math to Latino teenagers in a poverty-ridden Los Angeles barrio choking on crime, drugs and gangs. Students who make it into Escalante's courses must agree to some unusual stipulations:

1. Be willing to attend school for four hours each Saturday.
2. Be prepared to stay late after school each day.
3. Expect to complete as much as thirty hours of homework each week.
4. Agree to take ten weeks of summer school.

Licata and Johnson (1989) believe that conspicuous examples of student empathy include a multicolored plastic chain with links of different lengths used to illustrate inequalities and a faded pillow with which to swat wayward students. Lambert (1988) report that Escalante sometimes separates his classes into groups of four or

five students. Escalante then proceeds to select the weakest student in each group as leader. The group's task is to solve problems on the basis of the strategy outlined by the leader. Escalante, "What happens is, you start building the confidence of someone who is weak or doesn't have a good background. After a while, they start leading the discussion, sometimes they even borrow my toys (Lambert, 1988).

Licata and Johnson (1989) believe educators might debate the wisdom of such strategies as swatting inattentive pupils, making weak students group leaders or giving thirty hours of homework per week. On the other hand, they believe Escalante's methods might be an example of a teacher who reorganizes classroom structure as a way to excite and rouse the involvement of students through the creation of classroom drama (Licata & Johnson, 1989). Willower and Licata (1975) believe speculation regarding the presence, nature and description of this type of drama led them to identify drama as environmental robustness (Willower & Licata, 1975).
Inaugural speculation and conceptualization of environmental robustness proved to be an unanticipated research consequence for Willower and Licata (1975). While focusing on a study of student and teacher attitudes regarding student challenges to school authority, student brinkmanship, and pupil control behavior by Licata (1974), Willower and Licata (1975) note an interesting disparity which emerged from the comparison of two schools. Students from School A, a custodial oriented school, were expected to have more negative attitudes about brinkmanship and everyday classroom life than students in School B, a humanistic school, the opposite proved

to be true. Students in School A, the more custodial school, exhibited more positive attitudes about brinkmanship and everyday classroom life than students in School B, the humanistic school. While initially confounded by these findings, Willower and Licata proceeded to explain this unanticipated disparity in terms of environmental robustness (Licata, 1974; Licata & Willower 1978; Willower & Licata, 1975).

Willower and Licata (1975) define robustness as the perception of school drama produced by various tension-creating structures within the school. Willower and Licata (1975) speculate that the tension-creating structures found in School A, the traditional school, were perhaps more effective in evoking the empathetic involvement of students than those in School B. To further expand the results, Willower and Licata (1975) proceeded to identify tension creating structures within schools. In traditionally oriented schools, they suggested, student teacher conflict, and final examinations are examples of tension creating structures. It was the presence of tension creating structures in a school that accounted for its higher level of perceived robustness. Licata and Willower (1978) suggests that teachers who are humanistic in their orientation tend to reduce conflict and competition by minimizing the effects of tension creating structures functioned to create a less dramatic environment for students. The absence of these tension creating structures in the humanistic school reduced student opportunities for empathetic involvement and subsequent perceptions of robustness (Licata & Willower, 1978).

Willower and Licata (1975) and Licata, Teddlie, and Greenfield (1990) believe that from these early descriptions, the use of theatrical terminology to define and describe robustness provides an important linguistic framework for conceptualizing environmental robustness, and that Goffman's (1959) social interaction can be understood using drama type metaphors, that identifying actors, plots, settings, and audience. They suggest that school structures such as interscholastic sports, student teacher conflict, final examinations, and alternative or innovative programs could be understood in terms of audience empathy for the actors and the perception of situational drama or environmental robustness (Licata & Teddlie, & Greenfield, 1990). As Goffman (1959) applied to social situations, the theatrical analogy makes it possible to speak of social interaction in terms of actors, plots, settings and audience.

Licata and Johnson (1989) suggest that while evoking the heightened mental and emotional involvement of the audience, the presence of conflict within a play or novel creates within the observer a tension that seeks resolution. By creating and subsequently delaying its resolution, Licata, Teddlie, and Greenfield, (1990) believe the skilled writer proves adept at using conflict to sustain the emotional involvement of the audience. Generally, in theatrical performances and literature, conflict is thought to be a central feature of any dramatic social situation. This type of role taking was noted in the 1940's by Durkheim (1947), who suggests that the punishment of a crime often has a more important societal impact on the innocent than on the criminal.

The examples of tension creating situations and resultant

empathetic involvement within the context of the school were noted by Willower and Licata (1975). Licata and Willower, (1978) feel in a traditional but robust school, the student audience might, quite often, have the opportunity to take the role of a classmate who runs a risk or is embroiled in a conflict with a teacher. Other students may feel frightened, and fight symbolically in their seats during a close contest, audibly voice relief when an issue is concluded (Estep & Licata, 1980). Actual examples of tension creating or robust structures within schools as noted by Ellett and Licata (1982) included the integration of aviation lessons by a particular school into its curriculum for underachieving students. Coleman's (1961) example is inter-school intellect competition, incorporation of the Outward Bound survival by schools, and virtuoso teaching performances. Even with the dramatic involvement created by these tension-creating structures, Licata and Willower (1978) recognize the negative consequences of these same structures, they believe repetition of even the most dramatic structure would over time, become monotonous to an audience.

Most professional entertainers seem to understand the audience limitation and skillfully utilize comic relief or novelty to hold their audiences (Licata, Teddlie & Greenfield 1989). Licata (1974) found, in his studies on brinkmanship, the changing of sports seasons, the humorous ways students sometimes circumvent authority, the teachers use of holidays were examples of relief structures that reduce monotony. Willower and Licata (1975) believe the robust school is one in which, conflict, monotony, and relief structures are found in the kind of balance that promotes

variation and maintains audience involvement. Licata, Teddlie and Greenfield (1989) note that the unanticipated findings and analysis was both speculative and highly tentative. Solid empirical evidence was absent for most of the thoughts advanced. While Willower and Licata (1975) believe that the idea of environmental robustness was worthy of further inquiry, they suggested that the development of a viable operational definition for robustness might be a useful first step (Licata, Teddlie, & Greenfield, 1989).

Licata and Willower (1978), used Osgood's (1957) semantic differential for conceptualization in the development of an environmental robustness measure. Licata, Teddlie, and Greenfield (1990) report that twenty-five pairs of polar adjectives thought to be discriminators of dramatic content were selected. The sample for the initial development and testing of the instrument consisted of 136 elementary and secondary teachers, 200 high school and 136 elementary students. T-tests of individual item mean scores for the concepts dramatic and not dramatic and subsequent factor analysis of the responses to the remaining items led to the identification of a single factor accounting for 68% of the test variance. Test-retest reliability procedures resulted in a reduction of the measure to its final form, a 10 scale Robustness Semantic Deferential (RSD) (Licata & Willower 1978; Licata, Teddlie, & Greenfield, 1990). Their operational definition of environmental robustness is a respondents perception that a particular concept was:

1. Interesting, rather than boring
2. Fresh, rather than stale
3. Meaningful, rather than meaningless
4. Important, rather than unimportant

5. Unusual, rather than usual
6. Powerful, rather than weak
7. Active, rather than passive
8. Thrilling, rather than quieting
9. Action-packed, rather than uneventful
10. Challenging, rather than dull.

(Licata & Johnson, 1989)

Licata and Willower (1978) note that almost any concept, such as; my school, my role as a teacher, or this class, could be assessed using the ten RSD scales.

Licata and Willower (1978) asked eighty-four secondary students, who had participated in the reliability experiments with the measure, to evaluate their schools on a scale using the pair good-bad. As suspected, analysis revealed the mean RSD score for students holding a positive evaluation of their school was significantly higher than the mean RSD score for students holding a neutral or negative evaluation of their school (Licata and Willower, 1978).

Since the initial study, the research findings from work with the RSD suggest that environmental robustness is positively related to the humanistic pupil control behavior of teachers and principals as well as a number of classroom and school characteristics often thought to be associated with quality work environments for principals, teachers and students (Licata & Johnson, 1989). These findings are a way of describing possible themes that emerge from these studies, the following studies address three issues:

I. Rethinking the relationship between student perceptions of robustness and principal or teacher pupil control behavior.
2. Analyzing the relationships between environmental

robustness and its correlates.
3. Cautions present in the findings that bode against assuming that perceptions of robustness are necessarily associated with effective classroom or school organization. (Licata & Johnson, 1989).

Over the past years, the concept of environmental robustness has been the focus of research efforts about schools as social organizations (Ellett & Licata, 1982; Estep and Licata, 1980; Licata, Teddlie, & Greenfield, 1990; Multhauf, Willower & Licata, 1978). Multhauf, Willower and Licata (1978) found that elementary school classroom research suggests that there is a relatively strong positive correlation between student perceptions of humanistic pupil control behavior and classroom robustness. They believe this implies, that when teachers treat students with consideration, as individuals capable of controlling their own behavior, students think these classes are interesting, robust (Multhauf, Willower & Licata 1978). Estep, Willower, and Licata (1980) found in secondary classrooms, when teachers treat students with less personal consideration and impose coercive pupil control, students report that classroom life is dull, boring, meaningless or lacking in robustness.

According to Smedley and Willower (1981) there is a similar relationship between student's perceptions their principal's pupil control behavior and school robustness. Observational research by Licata and Wildes (1980) in secondary classrooms varying in student perceptions of environmental robustness provided further insight into the relationship between pupil control behavior and classroom robustness. They predicted the existence of an inverse relationship

between environmental robustness and classroom routine. Observation and comparison of classes identified as being high and low in robustness confirmed that teachers with custodial pupil control ideology and behavior regularly employed routinization in various aspects of classroom management, the delivering of instruction, caring for logistical concerns, and the enforcement of pupil control. These teachers tended to require that students sit down immediately upon entering the class and begin copying work from the blackboard or text. These routines were repeated day after day (Licata & Wildes, 1980). Listed below are the characteristics called low robustness.

Characteristics Of Low Robustness Classes

1. Student and teacher view much of task as a chore. It is doubtful that students would continue their work in the absence of the teacher.
2. Teacher establishes a stationary position or focal point in front of the class.
3. The teacher seems to dominate interaction in the class and there is very little opportunity for interaction among students.
4. Teacher dominance tends to stifle student leadership and reinforce status differentiation between student and teacher. Social distance between teacher and student is strictly enforced.
5. The class atmosphere is formal and autocratic stressing close supervision of student work by the teacher.
6. The teacher tends to hold negative expectations and attitudes about students and their work. Teacher doubts student ability to be self-motivated.
7. Students see the class as a "dull, boring routine."
8. Teachers tend to be more custodial, less humanistic, in pupil control ideology and behavior.
9. The teacher rigidly enforces rules and exceptions are rare or non existent.

10. The teacher seems to be on guard at all times, defending his domain, responding briefly or tersely to student questions.
11. The teacher's dress is often uniform-like, unvaried and colorless. It tends to suggest standardization and impersonal relationships with students.
12. Student movement is restricted. Brinkmanship, long pencil sharpening trips, yawning openly, feigned confusion over assignments, allow student movement.
13. Teacher remains expressionless, uses little humor and ignores the informal system of students.
14. Emotional inhibition seems to be encouraged in the classroom. Student empathy with each other and classroom activity is at a minimum.
15. Student misbehavior is a high risk activity. (Licata, & Johnson, 1989).

In contrast, Licata and Johnson (1989) report that the more robust the classroom, teachers tended to employ flexibility, variation, and even humor in dealing with daily instruction, classroom logistics, and pupil control. They are the high robust classrooms. Listed below are the characteristics called high robustness.

Characteristics of High Robustness Classes

1. Spontaneous student involvement in task. task activity would probably continue in the absence of the teacher.
2. The teacher seems to be a moving, dynamic focal point for the class.
3. The classroom appears to be a place for meeting with friends and where peer relationships among students are as integral a part of classroom interaction as relationships with the teacher.
4. Student leadership seems to emerge naturally from the student group resulting in reduced status differentiation between students and teacher.
5. The class atmosphere appears "shop like,-' informal with students holding a degree of autonomy over their work space. The teacher consults rather than

supervises.

6. The teacher tends to "halo" expectations and attitudes about students and their work. Students are viewed as trustworthy and predominantly self-motivated.
7. Students see the class as "fun" and look forward to attending it.
8. Teachers tend to be more humanistic, less coercive, in pupil control ideology and behavior.
9. The teacher tends to be flexible in administering classroom rules and regulations.
10. The teacher is relaxed and confident and is likely to respond openly and in depth to student questions and even pursue the students' line of thought.
11. The teacher's dress is varied, casual, sometimes colorful and appears to be a nonverbal clue of openness and the valuing of individuality.
12. Students appear to move around freely either through "brinkmanship" patterns or through flexible classroom structure.
13. Teacher displays a sense of humor, laughing, joking and badgering students; often calling students by nicknames.
14. The students seem to express empathy, not only for one another but for classroom activity. This sometimes results in students "acting out."
15. Student misbehavior is a low risk activity. (Licata & Johnson, 1989).

It is apparent to Licata and Johnson (1989) that custodial pupil control behavior is associated with rigid classroom routines often characteristic of an environment students see as boring or less robust. While Licata felt he and Willower were wrong about the relationship between pupil control and robustness, they were correct in speculation that student challenges to the teacher's authority in rigidly controlled classrooms would be relatively dramatic events, gaining sympathy from the student audience (Licata & Willower, 1978; Licata & Johnson, 1989).

Licata and Johnson (1989) feel the frequency of such events in these classrooms was overestimated, instead, every day life in these classrooms is regimented, orderly, but less robust than the classrooms of teachers with relatively humanistic pupil control behavior.

Smedley and Willower (1981) believe there is a similar relationship between principal pupil control ideology and behavior and student perceptions of school robustness. Licata and Johnson (1989) feel it is reasonable to suspect that more custodial principals have a tendency to rigidly routinize school life. Further, more humanistic principals are less likely to employ rigid routinization and subsequently have their schools perceived by students as relatively robust (Licata & Johnson, 1989). Willower and Licata (1975) were unable to explain the difference in the original two school brinkmanship study that inspired the robustness research, however their conception of environmental robustness as a dynamic balance among tension creating structure, monotony and relief structure appears to have implications for explaining the relationship between pupil control and robustness.

Licata and Johnson (1989) believe that regardless of how challenging or exciting the task facing the student tension creating structure, in classrooms with strict pupil control the apathy produced by the daily repetition of events, monotony, and the apparent dismal prospect for variation and novelty, relief structure, will combine to decrease the teacher's ability to maintain student empathy. As a result such classes are seen by students as less robust (Licata & Johnson, 1989). Clark-Jones (1992) believes that

in classrooms where the teacher emphasizes that students are responsible for their own behavior, have flexibility in procedures, and support spontaneity in student-teacher interaction, the possibility of tedium or boredom is less likely. Such an explanation is similar to the finding of Licata and Wildes (1980) characterizing robust classrooms in terms of spontaneous involvement by students in task. They claimed that students in these classes would continue their work even if the teacher were to leave the room. In low robustness classes, students viewed their tasks as chores and were unlikely to continue in the teacher's absence (Licata & Wildes, 1980).

Correlates of Robustness

Licata and Johnson (1989) believe that correlations between student, teacher or principals' perceptions of environmental robustness suggest that dramatic classroom and school environments are characterized as follows:

1. Clear goal structure.
2. Friendly and supportive relationships.
3. Diverse interests and activities.
4. Active, visible leadership.
5. Positive supervisory relationships with emphasis on opportunities for personal and professional growth.
6. Student involvement.
7. Learning and retention of learning.
8. Principal and teacher belief in students' ability to be self governing and responsible in their behavior. (Licata & Johnson, 1989).

Licata and Willower (1978) believe that the robustness theme seems to be present at the individual, classroom and school levels of

analysis, while this is a portrait of a relatively inviting social environment, it leaves the question, why are such environments robust for the student, teacher or principal audience? Possibly the relationship among tension creating structure, relief structure, and monotony have meaning in relationship to the correlational characteristics of environmental robustness mentioned by Licata and Johnson (1989). Some examples:

1. Environments characterized by friendly relationships.
2. Faith in the ability of others to be self governing and responsible diverse interests and activities.
3. Participative decision making may represent the kind of social environment that nurtures spontaneity, rather than tedium and predictability. (Licata & Johnson, 1989).

Licata and Johnson (1989) believe, when a school environment is friendly and multiple interests are free to express themselves, surprising and stimulating things are likely to occur. In such environments, patterning and repetition may be present to provide order but monotony is minimized by a healthy mix of tension producing and relief structures (Licata & Johnson, 1989).

Academic Achievement of Students

Hoy and Miskel (1991) suggested that student learning, the development of motivation, creativity, self confidence, citizenship and vocational choices are typical goals associated with school organization. Virtually all seem to be needed for student success in school and life. While schools have many goals, the centerpiece of their goal structure is student learning and academic achievement.

Schools that have a healthy, humane or robust climate for teachers are likely to be characterized by effective teaching and learning (Hoy & Miskel, 1991). Put another way, in such settings' teachers may be better able to respond to their role expectations and need dispositions in ways that enhance student learning and achievement (Logan, Ellett & Licata, 1993; or Hoy, Tartar & Kottkamp, 1991).

Academic achievement, not necessarily learning, has been measured using the Iowa Test of Basic Skills (ITBS). This standardized measure of student achievement does provide subtests for mathematics, language arts, reading, science and social studies and composite score (Hambleton, 1987).

Walberg and Ellett (1987) and Logan, Ellett and Licata (1993) have employed school-level average daily attendance of students (ADA) as a school outcome construct. Their reasoning seemed to be that schools with positive learning environments encourage relatively high levels of daily student attendance. For example, research shows a relationship between student attendance (holding power) (Morris, 1986) and the following climate constructs: positive teacher perceptions of school goals and vision, their autonomy and quality supervision as well as school robustness and effectiveness (Logan, Ellett & Licata, 1993). Further, the same study reported a significant correlation (r=.41) between student achievement and attendance, suggesting that the two are associated but not necessarily the same constructs. Partly because the data are readily available in this study, school ADA will serve as a proxy measure of school holding power.

Towards Improved Definition

Willower and Licata (1975) originally used a metaphor, school as theater, to describe the structure giving rise to perceptions of drama or robustness. Licata and Johnson (1989) felt that research findings (Ellett & Licata, 1982; Estep & Licata 1980; Licata & Wildes, 1980; Morris & Ellett, 1987), called for a revision of the metaphor. They feel robust schools and classrooms seemed to be reminiscent of theater which employs the play within a play technique as a means toward the enhanced involvement of the audience (Licata & Johnson, 1989). Licata and Johnson (1989) believe that Croyden's (1974) description of Allan Kapow's creation of "happenings" or Wassermann's (1965) adaptation of Cervantes' Don Quixote as the Man of La Mancha accent example of this kind of theater. In the Wassermann (1965) play Cervantes outlines the plot for his fellow prisoners, he encourages them to improvise their roles as they see fit. By taking the role of both actors and audience, the prisoners tended to facilitate empathic classroom environments likewise allow for safe robust student-teacher interaction. Licata and Wildes (1980) feel ideas could be presented and exchanged, challenges met, and problems solved without fear of being put down, hurt or humiliated. Licata and Wildes (1980) feel that while it is certainly true that not all robust environments provide for relative audience safety, we should not be surprised that robust and safe environments are often associated with effective educational practice. Also, Licata and Wildes (1980) feel a description of robust classroom might be understood in terms of the larger school context

as plays within a play, where the audience involvement leads to spontaneity, improvisation, and enhanced student empathy. Morris and Ellett (1987), found that teacher perception of school robustness was positively correlated to student achievement and attendance. Teacher job satisfaction was not as strongly correlated. As suggested in many studies in other organizational contexts, job satisfaction by itself may be an inadequate predictor of educational effectiveness (Morris & Ellett, 1987). Licata and Johnson (1989) state that robustness on the other hand, seems to capture both positive teachers sentiment and empathy about teacher work environment. This difference may be important in nurturing student learning schools (Licata & Johnson, 1989)

Licata and Johnson (1989) focus on definitions that are important to defining environmental robustness as the key vehicle in an attempting to further illuminate the construct of robustness. Below are listed the definitions divided into five areas.

Definitions Grounding the Conception of Environmental Robustness

1. Bold structure, the routine or typical ways organizations go about doing things.

Examples:

a. The hierarchical ordering of roles or social positions, such as principal, teacher, or student.
b. The curriculum and the processes used in teaching students.
c. The rhythm and events tied to the school calendar or extracurricular activities. (Licata & Johnson, 1989).

2. Dissonance, a state of conflict and/or disharmony. Implicit in the use of dissonance is the audience need for resolution.

Examples:

a. Seek the solution to a vexing problem.
b. Settle a dispute or contest.
c. Satisfy one's curiosity.

d. Predict an outcome. (Licata & Johnson, 1989).

3. Dissonance structures, (tension-creating structures) are the typical ways schools produce student perceptions of conflict or disharmony.

Examples:

a. Final examinations.
b. Graduation exercises.
c. Athletic contests.
d. Vocational education programs.
e. Survival training (Willower and Licata, 1975).
f. Instructional tasks that focus on student problem solving.
g. Principal leadership or vision.
h. Teacher involvement in decision making.
i. Supervision practices that present opportunities for professional growth.
j. Clear and challenging goal structure (Licata & Johnson, 1989)

4. Monotony, is a collective feeling of apathy associated with excessive patterning and repetition of school structure.

Examples:

a. Fatigue and tedium in student expressions after two weeks of repetition and drill.
b. Student are bored and look forward to holidays or summer after three months of daily regimentation with lessons and other activities (Licata & Johnson, 1989).

5. Relief Structures, the typical ways schools reduce or eliminate monotony.

Examples:

a. Teachers might occasionally change from lecture to small group instruction.
b. Use novel aids and materials or a sense of humor.
c. Exhibit flexibility in changing the pace or order of instruction as student interest begins to wane (Licata & Johnson, 1989).

Initial speculation about robustness by Willower and Licata (1975) suggests that various forms of conflict produced audience perceptions of drama and subsequent empathy. There was evidence

Jason (1987) to suggest that conflict continues to be a useful means of understanding robustness. However, Licata and Johnson (1989) believe findings that suggest that robustness can also be understood in terms of spontaneous involvement in task or open and challenging interaction may call for the use of a concept that includes conflict but with broader meaning. Licata and Johnson (1989) believe that dissonance might be that concept.

Licata and Johnson (1989) feel that at an athletic contest, the perception of dissonance among contestants often causes the spectators to sit on the edge of their seats and emotionally voice their hope for the outcome to be resolved in favor of their team. Licata and Johnson (1989) believe that uninterrupted patterning and repetition of even the most exciting activity eventually leads to student or teacher or principal perceptions of lethargy, indifference or apathy. Such belief structure tends to reduce the unanticipated negative consequences of classroom organization (Licata & Johnson, 1989). Licata and Johnson (1989) feel that environmental robustness is the perceived dramatic content of school structure and may be understood in terms of an equation:

Environmental Robustness (ER) = Dissonance Structure (D) / the ratio of Monotony (M) to Relief Structure (S) or:

$$ER = D / (M/R)$$

Licata and Johnson (1989) simply state that the level of tension due to dissonance structure tends to be diminished by feelings of monotony, feelings of monotony tend to be diminished by relief structure. Teachers in robust classrooms probably present

instruction in ways that challenge students to resolve the disparity between their present level of achievement and instructional objectives (D). The maintain student empathy by careful avoidance of classroom organization becoming an end in itself (M). They vary the schedule, use humorous or novel examples, nurture diverse points of view and emphasize application of concepts (R). Principals of robust schools may be successful in challenging faculty to resolve the disparity between their present performance and a shared vision of what the school should and ought to be (D). In accomplishing this, they are careful to organize with a light touch so that teacher flexibility, innovation and improvisation prevail (R) over rigid reliance on familiar routines (M) (Licata & Johnson, 1989).

Licata, Teddlie, and Greenfield (1990) believe robustness might at least provide a better understanding of why some students and teachers claim that the climate of a school is sometimes boring. They feel that teachers support principals with the wisdom to make schools more effective and robust places for students and professional staff alike (Licata, Teddlie, & Greenfield, 1990).

School Outcomes and Effectiveness

One problem with researching climate is voiced by Miskel and Ogawa (1988) they have lamented that much of the social systems research on climate focuses solely on the relationship dimension and ignores the other three dimensions. They argued that "school-effects" research has been more active than "organizational climate"

research in exploring all four dimensions and in applying multiple methods and theories in explaining effects (Miskel & Ogawa, 1988). Distinctions such as "organizational" versus "school-effects" inquiry, often emphasize differences over similarities. Close reading of school-effects research by Walberg and Ellett (1987) or Bossert, Dwyer, Rowan and Lee (1982) suggests that at least some of the school effects research share the typical social systems paradigm emphasizing input, mediating and output variables with those who focus on organizational climate. According to these researchers, school climate mediates the relationships between inputs (such as principal performance or district policy) and outputs (for example, student learning or graduation).

While Miskel and Ogawa (1988) might have drawn a distinction between school-effects research (not necessarily grounded in theory) and theoretically grounded research, the distinction they have drawn seems to focus on the notion that some social systems research emphasizes the association among inputs mediating relationships and outputs (school effects), and other research focuses on the dynamics of the mediating dimension (organizational climate).

On the other hand if one were to view all theoretically grounded approaches to the study of climate as a distinct body of inquiry, these approaches would collectively appear to exhibit multiple theoretical perspectives and methodologies across research and contributing information about all four dimensions of Tagiuri's (1967) taxonomy. From this perspective, the work of each

researcher has the potential to enrich and contribute to the work of others.

Thomas (1987) believes that the inclusion of employees in the process enhances school climate and greatly contributes to the concept that teachers and administrators are working as a team. Bergman (1992) believes that teamwork promises feedback regarding leadership; this is important for the administrator to remember. Input from the certified staff allows the administrator to have a wider representation and provides a solid base for evolving an effective administrative design (Bergman, 1992). Hyerle (1996), speaking on deriving meaning from experiences, says that autonomous individuals set personal goals and are self-directing, self-monitoring, and self-modifying. Because they are constantly experimenting and experiencing, they fail frequently, but they fail forward, learning from the situation (Hyerle, 1996).

Research supports the concept that the effectiveness of the administrator is the measure of the effectiveness and climate of the school (Lebert, 1993; Purkey & Smith, 1982; Queen, 1989; Shrewsberry, 1990; Strong, 1990; Willis, 1991). Evans (1987) believes that it is important to remember the importance of administrative effectiveness should not discount teacher involvement in the school for achieving a healthy climate of total school effectiveness. The ownership of the commitment to excellence needs to be continually expanded (Evans, 1987).

Troisi and Kidd (1990) believe that successful teamwork requires an effective leader, a need for existence, delineation of responsibilities, mutual respect among team members, support of

team decisions, and loyalty to the administrator and the team. Belbin (1981) said no one, administrator or teacher, has all the answers, but a team can overcome many obstacles. Hoerr (1996) believes that the general effectiveness of administration and positive educational climate sums up teamwork. Continuing that teamwork includes the community. Mathews (1996) contends that educators cannot restore confidence in education by involving people in plans already made but should take a broader approach with public forums focused on local community needs and purposes Hoerr (1996 thinks the demands on today's schools and principals make it almost impossible to do the job alone, the solution is to share the responsibility. Teamwork allows flaws with corresponding strengths (Hoerr, 1996).

Summary

This chapter has provided a selected review of the literature pertinent to social systems, climate, organizational health, and organizational robustness, and teamwork.

A variety of research was reviewed to show the kind of data available on organizational health and organizational robustness. Common to both and their various studies was the apparent importance of leadership in the successful performance of the school. The literature revealed that the climate must be positive in order to have an effective motivated, team oriented, educational program and much effort must be expended by the administration to maintain that positive atmosphere.

The research indicates that the condition of the school climate perceived by teachers is a mediating variable which may affect compliance, achievement, and attendance. The principal's knowledge of and ability to manipulate the determinants of climate may have an identifiable impact on the quality of teaching and learning.

CHAPTER III

METHODOLOGY & PROCEDURES

Introduction

The research for the study is presented in three sections. The first section describes the independent variables used in the study. The second section describes the dependent variables used in the study. All measures, dependent and independent, will be discussed regarding conceptual development, validity and reliability. The third section describes the methodology, sample, data collection and analysis procedures. The chapter concludes with a summary.

Sample

All 45 schools, and approximately fifteen hundred teachers located in a city/county 50 mile radius area in a midwestern state constituted the population for this study. Many geographers believe a geographical population is connected by such factors as agriculture, industry, social services, and transportation routes (Murphy, 1966, 1977, Wilson, 1995). Haggett (1977) simply states, in his classic study, a geographical population is a collection of objects with some geographical characteristics in common (Haggett, 1977).

Over 85% of the population, or 38 schools participated. The school principal was asked to provide data on average daily attendance, recorded from the daily attendance taken at each school site, and averaged at the end of each quarter. The characteristics of schools that participated and those that declined to participate were compared to determine possible differences between the two groups, as suggested by Nunnally (1978), to ensure these schools would not have influenced the study. An effort was made to select a population that spans a diverse group of schools (urban, suburban, small city, and rural).

Measures

Independent Variables

Organizational Health Instrument (OHI)

Development

Miles (1965) took the first step to devise an instrument to measure organizational health by making operational a 10 component framework. Miles (1969) defined a healthy organization as one that not only survives in its environment, but continues to cope adequately over the long haul, and continuously develops and extends its surviving and coping abilities. Consistent with initial attempts

to operationalized Miles's notion of school health, which produced no well established instrument (Fairman, Holmes, Hardage, and Lucas, 1979; Kimpston and Sonnabend, 1975; Miles, 1969), Hoy, Tartar and Kottkamp, (1991, p. 65) reported further disappointing results from a more recent attempt to measure Miles's ten-dimension framework with their own 113 item pilot instrument. Varimax rotation factor analysis using teachers as the units of analysis (153 secondary teachers) produced only four factors (29 of the 113 items) with reasonable alpha coefficients. Based on this pilot study, they made a decision to replace Miles' theoretical framework with one by Parsons (1967) that noted three levels of control exhibited by schools in meeting their needs: technical (teaching), managerial (principal influence on teachers), and institutional (the association and schools with the external environment). Instead of Miles' definition, Hoy, Tarter, and Kottkamp defined organizational health as harmony among Parsons' (1967) Executive, Managerial and Technical Dimensions of school organizations (Hoy, Tarter, & Kottkamp, 1991, p.68). Hoy and Feldman (1985) referred to work by Halpin and Croft (1962, 1963) to begin updating the health measure.

Items were written by these researchers to measure the technical, managerial and institutional levels of secondary school organization. Sixty-six additional items were developed to supplement the 29 items from the initial pilot (95 items). A four-point Likert scale, ranging from "rarely occurs" to "very frequently occurs", was applied to simple descriptive statements that teachers completed to describe their school. This instrument was administered to randomly selected teachers from 72 secondary

schools. Employing the school as the level of analysis, varimax factor analysis produced a 44 item, seven factor solution for the instrument (Hoy, Tartar and Kottkamp, 1991, pp. 70-1).

Validity

Each of the seven factors was associated with Parsons' three more general categories: Institutional Integrity with the Institutional Level; Principal Influence, Consideration, Initiating Structure and Resource Support with the Managerial Level; Morale and Academic Emphasis with the Technical Level. The placement of these factors or subscales within Parsons' respective levels of school organization seems to exhibit a reasonable amount of face validity. For example, items that compose the subscale of Institutional Integrity subscale express teachers' confidence that they are protected from undesirable community interference in their work. This subscale represents Parsons' institutional level of organizational control over uncertainty in the external environment.

Hoy and Feldman (1985) conducted a second study with a new sample of randomly selected teachers from the 72 secondary schools in the pilot and from an additional six schools (78 in all) to confirm the validity of the seven-factor structure. To determine eigen value, mean scores, by school, were computed for each item. After varimax rotation, seven factors with eigen values ranging from 14.28 to 1.35 emerged. These were the same item-factor structure produced in the pilot. Identified were two of the seven factors, Academic

Emphasis, and Teacher Moral (Hoy & Feldman, 1985, Hoy, Tarter, & Kottkamp, 1991).

It is not unusual for researchers to at least use two criteria for selecting a factor structure: (1) an eigenvalue greater than 1 and; (2) each factor must account for 10% or more of the cumulative variance (Licata & Willower, 1978; Underhill, 1992). The eigenvalue equals the sum of squared item loadings for a given factor. The common variance equals the total amount of unique variance in the solution explained by the factor (Ellett, 1995).

Hoy, Tarter, and Kottkamp (1991) explained in applying these criteria, the OHI is either a two subscale instrument accounting for 44% of the cumulative variance or a one general subscale accounting for 45% of the cumulative variance (Hoy, Tarter, & Kottkamp, 1991; Hoy & Miskel, 1991).

Reliability

Alpha coefficients for the 78 school sample for these subscales ranged from .87 to .95: Institutional Integrity (.91); Principal Influence (.87): Consideration (.90); Initiating Structure (.89); Resource Support (.95); Morale (.92); and Academic Emphasis (.93).

Content and Structure

The secondary, Organizational Health Inventory (OHI) is composed of 44 items scored on a four-point scale. Each item asks

teachers how frequently a particular characteristic of health occurs in their school. Teachers respond to each item by circling one of the following: rarely occurs, sometimes occurs, often occurs or very frequently occurs. Because data are skewed, very frequently the items are scored a "4"; rarely are they scored "1". Scoring is reversed, for items representing unhealthy characteristics. Scores for all 44 items are summed for a total organizational health score (the higher the score, the healthier the school). (Hoy, Tarter, & Kottkamp, 1991; Hoy & Miskel, 1991). Hoy and Miskel (1991) use the seven subscales of the OHI model listed in appendix.

Middle schools are different in concept than elementary or upper secondary schools. Whereas this research project intended to employ the secondary school version of the OHI, the nine items that define the difference between the two OHI forms were added to the secondary OHI used in this study. The addition of these nine items, not one of the objectives for this study does:

> Provide the beginning of a data base that would eventually make possible some exploratory analyses to suggest a measure that best fits the context of the middle school.

A copy of the OHI instrument for this study is found in Appendix A.

Robustness Semantic Deferential (RSD)

Development

Willower and Licata (1975) posited that school and classroom life could be described through the perceptions of students, teachers

and others as being relatively dramatic or robust. Grounding their conception of schools in Durkhiem's (1947) well known description of the "ripple effect" of social structure and Goffman's use of theater as a metaphor for everyday life, they suggested that the consequences of a social situation or variation in school structure could best be understood in terms of audience perceptions (children, parents, teacher or administrators) of the dramatic content of an event. For example, block scheduling, as a way of delivering instruction as compared to a traditional seven period day, may exhibit different perceptions of drama and goal directed behavior from the student or teacher audience. Schools with relatively high degrees of audience perceptions of drama were characterized by these investigators as exhibiting environmental robustness.

Licata and Willower (1978) developed an environmental robustness measure using Osgood's (1957) semantic differential technique. Twenty-five pairs of polar adjectives thought to be discriminators of dramatic content were selected for testing (e.g., interesting-boring, meaningful-meaningless, or challenging-dull). The semantic differential technique provided a possible way to assess the drama or robustness of numerous and different school concepts limited only by the imagination of the researchers (e.g., my school is, my teacher is, my student's parents are).

Validity

Licata and Willower (1978) used a sample for the initial development and testing of the instrument consisting of 136

elementary and secondary teachers, 200 high school students and 120 elementary students. Each of the 25 pairs used a seven-point scale. Items were scored from 1 to 7 with no regard for expected polarity. The investigators computed a paired t-test using the concepts "dramatic-not dramatic," item by item for elementary students, secondary students and teachers respectively. All adjective pairs with the exception of "superficial-profound" and "violent-peaceful" (secondary students) significantly discriminated between the two concepts "dramatic-not dramatic" (Licata & Willower, 1978).

All 18 items on the simplified elementary form discriminated between the two concepts, "dramatic-not dramatic," as did the 25 items on the teacher form. A revised 16-item form composed of the 18 items had in common (less violent-gentle and superficial-profound) was subjected to the same item by item t-tests with the three samples combined (N=456). All 16 items significantly discriminated between the concepts "dramatic- not dramatic" in the predicted direction and recorded accordingly (Licata & Willower, 1978).

Pilot principal components and varimax factor analyses were computed for each sample. The findings indicated a similar factor structure across all three samples (instruments) and resulted in a subsequent factor analysis with students and teachers combined (N=456). The researchers calculated a principal components analysis for the concept "dramatic," producing a single factor solution that accounted for 67.8% of the test variance. A varimax rotation resulted in a more definitive four-factor structure but in

subsequent reliability testing an insufficient number of adjective pairs survived to measure the four factor version. Consequently, the single factor version was adopted for further testing. The following ten pairs with robust polarity in bold type were the result of these analyses:

1. "boring-**interesting**,"
2. "**fresh**-stale,"
3. "meaningless-**meaningful**,"
4. "unimportant-**important**,"
5. "usual-**unusual**,"
6. "**powerful**-weak,"
7. "**active**-passive,"
8. "dull-**challenging**,"
9. "**action-packed**-uneventful,"
10. "quieting-**thrilling**."

These ten robustness adjectives exhibit face validity with the general meaning of drama, significantly discriminate between teacher and student perceptions of the concepts dramatic-not dramatic and provided a promising way to operationalize audience perceptions of dramatic school structure (Licata & Willower, 1978).

Before responding to the test-retest reliability instruments with a sample of 84 students, students were asked by the investigators to rate their school using the adjective pair "good-bad" on a seven point scale. Those student who rated their school positively composed one group. Those students who were neutral or negative about their school composed another group. A t-test of mean scores was significant, suggesting that students with positive evaluations of their school saw it as a relatively robust social setting. The same results were produced with the same instrumentation and sample four weeks later.

In a subsequent study with this ten-item Robustness Semantic Differential (RSD), school classes rated by students as high or low in robustness (significantly different RSD classroom mean scores) were visited by observers without knowledge of these prior ratings. These field observation reports conceptually coincided with the differences reflected in the RSD mean scores (Licata and Wildes, 1980). Regression analyses of RSD mean scores with students (Licata, Willower and Ellett, 1978), with teachers (Ellett and Licata, 1982) and principals (Smedley and Willower, 1981) produced conceptually consistent relationships between the RSD and well known measures of school environments. Morris and Ellett (1987) and Logan, Ellett and Licata (1993) found significant correlations between teacher perceptions of various school concepts and their perceptions of school effectiveness as well as student achievement and attendance.

Reliability

Based on Osgood's (1957) advice, test-retest reliability was employed with a the pool of 15 items derived from factor analysis. As noted above, Licata and Willower (1978) reported that the test/retest reliability analysis resulted in a reduction of the measure to its final form, a 10 item scale (RSD) Robustness Semantic Deferential. The final ten bi-polar RSD adjectives were scored from 1 to 7, with a total score ranging from 10 to 70. The test/retest reliability over the 4-week interval produced a Pearson

coefficient of .77 and the Spearman coefficient was .78 (Licata & Willower, 1978). (See Appendix B)

Content and Structure

Willower and Licata (1978) developed the RSD with a scale scored from 1 to 7 and a total score ranging from 10 to 70; the higher the score, the greater the perceived robustness. Licata & Willower (1978) noted that almost any concept such as: my school, my role as a teacher, or this class, could be assessed using the ten RSD scales. Operationally, environmental robustness was defined as the respondents' perceptions that a particular concept was:

1. Interesting, rather than Boring
2. Fresh, rather than Stale
3. Meaningful, rather than Meaningless
4. Important, rather than Unimportant
5. Unusual, rather than Usual
6. Powerful, rather than Weak
7. Active, rather than Passive
8. Thrilling, rather than Quieting
9. Action-packed, rather than Uneventful
10. Challenging, rather than Dull.

(Licata, & Willower, 1978).

Three concepts, used to measure school robustness as perceived by the teachers, in this study, were suggested by previous studies assessing school effectiveness (Blumberg & Greenfield 1986; Connelly, 1992; Jason, 1988,), and student achievement and attendance (Logan, Ellett, & Licata, 1993; Morris & Ellett, 1987). They are:

1. "My school environment is..." as a general focus for teacher assessment of the overall school community;
2. "My school vision is..." based on Logan and Ellett's (1989) Goal Direction and Vision subscale from their measure of school structural coupling and;
3. "My school accomplishments are..." patterned after Mott's (1972) Effectiveness scale.

Each pair of polar adjectives in each category are discriminators of dramatic and not dramatic content (Licata and Willower, 1978).

Socioeconomic Status (SES)

Hoy, Tarter, and Kottkamp (1991) recognized other organizational influences on student achievement such as socioeconomic status (SES). Hoy's study included a SES school district group comprised of 7 factors: educational level of adults in the district; the occupations of the adults; the percentage of people who have lived in the district for 10 years; the number of people per housing group; percentage of urban population in the district; average family income; and the rate of unemployment and poverty. (Hoy, Tarter, & Kottkamp, 1991)

This study did not have access to data to create a school district index, as used by Hoy, Tarter, and Kottkamp (1991). This study used a percent of free or reduced lunch variable for each school as a proxy measure of SES. This seemed appropriate because two key factors used to determine free or reduced lunch status mirror those in the school district index used by Hoy, i.e. number of people per housing group, and average family income. For example, a

high percentage of free lunches would indicate a school with a relatively low SES.

Dependent Measures

Iowa Tests of Basic Skills (ITBS)

Development

The ITBS was used to as an operational measure of student learning in this study. The state from which this sample was drawn administers the ITBS to students in the third, fifth, seventh, ninth and eleventh grades. Because this study was with middle schools, the seventh grade results for each school provided the ITBS data base.

Validity

The predictive power of ITBS Composite Scores was obtained in Grade 8 for a sample of freshmen entering the University of Iowa in 1962. These validity estimates, corrected for restrictions in range in 8th grade ITBS distributions, varied from .65 (ITBS versus 1st semester college grade point average) to .93 (ITBS versus grade 10 Iowa Test of Educational Development composite scores) (Linden & Linden, 1968).

Reliability

ITBS split-half reliability estimates adjusted by the Spearman-Brown Formula range from .89-.92 for the separate tests within the battery, and from .97-.98 for the composite scores (Linden & Linden, 1968). The estimates were based on a sample of approximately 12.5% of the answer sheets completed by the standardization group at each grade level. The sample sizes ranged from n=2,497 (8th) to n=2,803 (4th). Later reliability testing for the various subtests tended to be in the .80s and .90s (Hambleton, 1987). The high intercorrelations among the 5 tests at each grade level suggest that the skills measured by the ITBS tend to be rather homogenous from test to test (Linden & Linden, 1968).

Content and Structure

The total battery Normal Curve Equivalent (NCE) score for the composite of each school was employed as the unit of analysis for student learning, as published in the annual report by the state. The ITBS has been demonstrated to be a well established standardized achievement test, with adequate validity and reliability (Linden & Linden, 1968; Hambleton, 1987).

Average Daily Attendance (ADA)

Because this study was in a state that reflects average daily

membership (actual numbers enrolled per day) rather than average daily attendance (actual numbers present per day), the principal of each participating school provided average daily attendance for the academic quarter immediately preceding the implementation of this study, in the same semester the ITBS was administered. The data for average daily attendance were calculated as a percentage (reported ADA/Total Enrollment for the quarter). This raw ADA (mean score) served as the ADA unit of analysis for this school outcome.

Data Collection Procedure

Letters were mailed to 45 school superintendents in which they were asked for permission to use their schools in the study. With the superintendent's permission, site administrators of each school were then asked to participate in the study. A packet accompanied each site letter with copies of the Organizational Health Inventory (OHI) and the Robustness Semantic Differential (RSD) for all teachers. Each principal was asked to appoint a data collector not associated with the principal's office (e.g.., school counselor; librarian, etc.). The principal was asked to return the school's ADA, with their demographic form, by mail. (See Appendix C and D)

The data collector was responsible for distributing the instruments to all teachers in the school. Teachers that participated returned the completed instruments to the data collector in a sealed envelope. After ten days the data collector

sent all completed instruments to the researcher. After one week, the school administrator at each school that did not respond received a set of "memo" reminders for all teachers, after two weeks each received a telephone call from the researcher, as a final follow-up.

Data Analysis

The survey data were gathered from 38 of the 45 schools in the study and approximately fifteen hundred teachers located in the population for this study. A demographic profile of the sample was generated. The data analyses, using the SPSS program included:

1. central tendencies of all measured variables,
2. intercorrelations of conceptual variables,
3. standard multiple regressions with .05 as the significance level.

The regression procedures followed the form used by Hoy, Tarter and Kottkamp (1991) and Hoy and Hannum (1997) that tested a model without SES, and then added SES to the independent variables. Various models were tested for the purpose of determining a BEST Model of Student Achievement. To obtain a Best Model, significant independent variables that resulted from significant models were combined.

Summary

This chapter has developed the design of the study that included a discussion of development, validity, reliability and content and development of the independent and dependent measures.

The methodology used in sampling, data collection, and data analysis was explained.

CHAPTER IV

RESULTS OF RESEARCH

Introduction

The purpose of the study was to determine relationships among teacher perceptions of school health and school robustness and student achievement test scores. In addition to collecting data for these measures, data relating to demographic characteristics of principals, teachers and schools were collected to describe the sample. This chapter outlines the results of the data analyses. The chapter begins with a section that describes the sample, reports the central tendencies of the sample, and concludes with the analyses completed to examine/explore relationships. Tables are presented for the data analyzed throughout the chapter.

Description of the Sample

The statistical data were gathered from 38 of the 45 schools in the study. Babbie (1995) says that it is possible a sample will be representative of the population from which it has been selected if all members of the population have an equal chance to participate. Fraenkel and Wallen (1990) ask what constitutes an adequate, or sufficient, size for a sample. Their belief is that with few set guidelines regarding the minimum number needed in a experimental

and comparative study, thirty would be the number needed, and in some repetitive comparison studies as few as 15 units would be needed (Fraenkel & Wallen, 1990).

School Respondents

Of the 45 schools targeted, three schools were non-responders, and four superintendents declined to participate. Henry (1990) suggests a comparison of variables of interest to responders and non-responders that would affect test scores to estimate what possible influence the schools not responding could have had on the study. A mean score comparison of schools responding and those not responding, in several categories found in the ITBS report, is presented in Table I. Further, Henry (1990) suggests minority responders (schools in which less than 40% of the teachers responded) be compared to majority responders (schools in which 40% or more of the teachers responded) to determine if the minority would produce a significant bias. A comparison of minority responder's and majority responder's mean scores in several categories found in the ITBS report is presented in Table II. A comparison of OHI and RSD is not possible because schools not responding declined to participate. Therefore, only demographic characteristics of teachers, and schools are compared.

TABLE I

COMPARISON OF RESPONDERS AND NON RESPONDERS

Variables	Category Mean	Raw Mean Difference	Percent Difference
Daily Attendance			
Responders	544.29		
Non responders	557.43	13.14	.024
# of Students Tested			
Responders	184.34		
Non responders	184.86	00.52	.003
Teacher/Student Ratio			
Responders	6.82	00.75	.049
Non responders	16.00		
% of Minority Students			
Responders	31.65	05.78	.183
Non responders	25.87		
Teacher Advance Degrees			
Responders	34.46	02.57	.075
Non responders	31.89		
Teacher Experience			
Responders	11.87	00.57	.049
Non responders	11.30		
# of Free Lunches			
Responders	33.64	06.73	.201
Non responders	26.91		
Composite ITBS Score			
Responders	50.85	00.55	.011
Non responders	50.30		
%tile Writing Test			
Responders	65.00	01.29	.020
Non responders	63.71		
Miles from Urban Center			
Responders	16.84		
Non responders	19.43	02.59	.134

TABLE II

COMPARISON OF MINORITY RESPONDERS, LESS THAN 40%, AND MAJORITY RESPONDERS, GREATER THAN 40%

Variables	Category Mean	Raw Mean Difference	Percent Difference
Daily Attendance			
Responders >40%	455.55		
Responders <40%	614.80	159.25	.260
# of Students Tested			
Responders >40%	150.25		
Responders <40%	212.30	62.05	.293
Teacher/Student Ratio			
Responders >40%	16.50		
Responders <40%	17.00	01.50	.030
% of Minority Students			
Responders >40%	27.84		
Responders <40%	35.30	07.46	.212
Teacher Advance Degrees			
Responders >40%	31.73	00.13	.005
Responders <40%	31.60		
Teacher Experience			
Responders >40%	12.05	00.55	.046
Responders <40%	11.50		
# of Free Lunches			
Responders >40%	31.30		
Responders <40%	33.60	02.30	.069
Composite ITBS Score			
Responders >40%	50.05		
Responders <40%	51.69	01.64	.032
%tile Writing Test			
Responders >40%	63.10		
Responders <40%	67.60	04.50	.067
Miles from Urban Center			
Responders >40%	23.30	13.00	.563
Responders <40%	10.20		

Demographics

The teachers and principals in this study included only those who volunteered to participate. No teacher or principal was identified, and results are reported in statistical form only. Demographic frequencies for teachers are listed in Table III. Demographic frequencies for principals are listed in Table IV.

TABLE III

TEACHER DEMOGRAPHICS

Variables	Frequency	Percent	Cum. %	N
Ages in Years of Teachers				554
20-30	104	18.8	18.8	
31-40	152	27.4	46.2	
41-50	233	42.1	88.3	
50+	65	11.7	100.0	
Degree Level of Teachers				553
Bachelor	327	59.1	59.1	
Master	210	38.0	97.1	
Doctor	5	0.9	98.0	
Specialist	11	2.0	100.0	
Gender of Teachers				547
Female	127	23.3	23.3	
Male	420	75.8	99.1	
Race of Teachers				554
African American	41	7.4	7.4	
Asian	10	1.8	9.2	
Caucasian	476	85.9	95.1	
Hispanic	4	0.6	95.8	
Native American	23	4.2	100.0	
Years Experience In Current School for Teachers				554
0	24	4.3	4.3	
1-5	189	34.1	80.7	
16-25	94	17.0	97.7	
26+	13	1.2	100.0	
Total Teaching Experience for Teachers				554
0	23	4.2	4.2	
1-5	144	26.0	30.1	
6-15	178	32.1	62.3	
16-25	172	31.0	93.3	
28+	37	6.7	100.0	
Type School of Teachers				554
Metropolitan	335	60.5	60.5	
Non-Metropolitan	219	39.5	100.0	

TABLE IV

PRINCIPAL DEMOGRAPHICS

Variables	Frequency	Percent	Cum. %	N
Ages in Years of Principals				38
25-30	0	0	0	
31-40	5	13.2	13.2	
41-50	24	63.2	76.3	
50+	9	23.7	100.0	
Degree Level of Principals				38
Bachelor	1	2.6	2.6	
Master	30	78.9	81.6	
Specialist	2	5.3	86.8	
Doctor	5	13.2	100.0	
Gender of Principals				38
Female	12	31.6	31.6	
Male	26	68.4	100.0	
Race of Principals				38
African American	5	13.2	13.2	
Native American	2	5.3	18.4	
Asian	0	0	0	
Hispanic	3	7.9	26.3	
Caucasian	28	73.7	100.0	
Years Experience In Current School of Principals				38
0	1	2.6	2.6	
1-5	21	55.3	57.9	
6-15	5	13.2	71.1	
16-25	8	21.1	92.1	
26+	3	7.9	100.0	
Total Administrative Experience of Principals				38
0	1	2.6	2.6	
1-5	11	28.9	31.6	
6-15	16	42.1	73.7	
16-25	9	23.7	97.4	
28+	1	2.6	100.0	
Type School of Principals				38
Metropolitan	19	50.0	50.5	
Non-Metropolitan	19	50.0	100.0	

Descriptive Statistics

Descriptive statistics for the conceptual variables were generated for comparison in Table V. The subscale mean for the OHI and RSD were computed using the mean of teacher responses for each item in each school. The ITBS for each school was provided by the State Department of Education in the Oklahoma Educational Indicators Program, 1996. Demographic characteristics were also taken from the same 1996 annual report. The percent of possible was calculated by finding the total amount of points possible for each variable (number of items times the maximum points possible for each item) and dividing this figure into the mean score. For example, Academic Emphasis had 10 items, each receiving a possible of 4 maximum points (10 X 4) yielding a total possible score of 40. Since the mean for Academic Emphasis was 21.71, the percent of possible becomes 54.27 (21.71/40).

For the OHI subscales, mean scores ranged from 10.46 to 24.33. Percent of possible points also indicated a wide range among the subscales with Integrity receiving the highest possible points (83.85 percent of possible) and Consideration receiving the lowest possible points (37.45 percent of possible). Regarding the standard deviation in scores, Principal Influence had the lowest standard deviation (0.96) while Resource Support had the greatest standard deviation (2.44).

For the RSD subscales, mean scores represented a much closer range with Accomplishment posting the highest mean score (42.45) and Vision posting the lowest mean score (40.87). The range for the

percent of possible totals for all three subscales were also relatively consistent (68.11 to 70.75). The range for standard deviation (3.67 for Environment to 4.98 for Vision) was slightly less consistent.

TABLE V

DESCRIPTIVE STATISTICS FOR CONCEPTUAL VARIABLES

Variable		Mean	Standard Deviation	Variance	% of Total Possible
OHI					
	Academic Emphasis	21.71	2.43	5.92	54.27
	Consideration	14.98	1.83	3.37	37.45
	Integrity	23.40	2.21	4.90	83.85
	Morale	24.33	2.18	4.77	55.29
	Principal Influence	10.46	0.96	0.92	52.30
	Resource Support	13.14	2.44	5.93	65.70
	Initiating Structure	15.44	1.80	3.22	77.20
RSD					
	Accomplishment	42.45	4.02	16.17	70.75
	Environment	41.37	3.67	13.47	68.95
	Vision	40.87	4.98	24.83	68.11
ITBS					
	Composite	51.58	7.05	49.66	51.58

N = 38

Reliabilities

Cronbach alpha coefficients are illustrated in Table VI. The OHI Composite and subscales in this study reported coefficients ranging from .53 to .98 in contrast to Hoy's secondary reliability coefficients which ranged from .89 to .95. The RSD Composite and subscales reported reliability coefficients ranging from .87 to .95 as compared to Licata and Willower's reported Spearmenn coefficient of .78 (Licata & Willower, 1978). Nunnally (1978) and Peters (1979) note that all variable reliabilities should be listed in exploratory research to demonstrate satisfactory levels of reliability.

TABLE VI
ITEM RELIABILITY COEFFICIENTS

Variables	Alpha Coefficient in this study
OHI Total	.961
OHI ACADEMIC EMPHASIS	.989
OHI CONSIDERATION	.909
OHI INTEGRITY	.904
OHI MORALE	.797
OHI PRINCIPAL INFLUENCE	.537
OHI RESOURCE	.971
OHI STRUCTURE	.912
RSD TOTAL	.961
RSD ACCOMPLISHMENT	.925
RSD ENVIRONMENT	.872
RSD VISION	.956
ITBS COMPOSITE	.950

Associations

Table VII includes intercorrelations of OHI and RSD subscales, ADA, SES, and ITBS composite. Average Daily Attendance (ADA) was originally identified as a variable of interest, and will be discussed in Chapter V. As illustrated in Table VII, the variable ADA significantly correlated with only one variable (OHI Consideration). Therefore, the variable ADA was not included in the subsequent analysis.

TABLE VII
INTERCORRELATIONS OF TOTAL OHI, RSD, ADA, SES, AND ITBS COMPOSITE

	1. OHI	2. RSD	3. SES	4. ADA	5. ITBS
1. TOTAL OHI	1.0				
2. TOTAL RSD	-.56**	1.0			
3. SES	-.46**	-.15	1.0		
4. ADA	-.21	.06	-.04	1.0	
5. ITBS	.20	.21	-.57**	.16	1.0

** p<0.01 (2 tailed), * p,<0.05 (2 tailed)

TABLE VIII
INTERCORRELATIONS OF SUBSCALES, ADA,
SES, AND ITBS COMPOSITES

	1	2	3	4	5	6	7	8	9	10	11	12	13
1.	1												
2.	.47 *	1 **											
3.	.40 **	.52 **	1 **										
4.	.54 **	.71 **	.66 *	1 **									
5.	.48 **	.73 **	.39 *	.68 **	1 **								
6.	.52 **	.64 **	.41 **	.70 **	.71 **	1 **							
7.	.59 **	.71 *	.54	.58 *	.74 *	.64	1 *						
8.	.71 **	.35 **	.23 **	.36 **	.37 *	.25 *	.40 **	1 **					
9.	.50 **	.52 **	.43 *	.45 *	.35	.38 *	.51 **	.68 **	1 **				
10.	.48 **	.49	.41	.36 **	.34 *	.21	.42 *	.69	.73	1			
11.	- .62	-.22 *	-.11	-.45	-.40	-.37	-.38	-.31	-.16	.02	1		
12.	.03 **	-.33	.02	-.27	-.26	-.28	-.16	.16 **	.06	-.04	-.04	1	
13.	.47	.13	-.22	.17	.21	.21	.15	.44	.14	.03	-.57	.16	1
	1	2	3	4	5	6	7	8	9	10	11	12	13

(* and ** accompany the number listed above)

1 = OHI ACADEMIC EMPHASIS
2 = OHI CONSIDERATION
3 = OHI INTEGRITY
4 = OHI MORALE
5 = OHI PRINCIPAL INFLUENCE
6 = OHI RESOURCE
7 = OHI STRUCTURE
8 = RSD ACCOMPLISHMENT
9 = RSD ENVIRONMENT
10 = RSD VISION
11 = SES
12 = ADA
13 = ITBS COMPOSITE

**p,0.01(2 tailed, *p<0.05 (2 tailed)

Regression

The statistical method of Standard Multiple Regression (SMR) was used to determine the relationship of independent variables (OHI, RSD, and SES) on the ITBS score. Because of the nature of this study, exploratory, ITBS is described as a function of the relationship of variables. The following illustrates the sequence of models tested, which is similar to the sequence used by Hoy, Tarter, and Kottkamp (1991). SES was added as an independent variable after the OHI subscales were tested. For this study, the sequence was continued using the RSD subscales as well.

Model 1. ITBS Composite = f(OHI Subscales (7))

Model 2. ITBS Composite = f(OHI Subscales (7)+ SES)

Model 3. ITBS Composite = f(RSD Subscales (3))

Model 4. ITBS Composite = f(RSD Subscales + SES)

Model 5. BEST MODEL

Data for regression analysis was prepared by collapsing the independent variables to 3 levels: high, medium, and low. This was done to insure that each model was not over parameterized, (more levels than sample). The purpose of the 5 model analyses was to obtain the Best Model that would indicate which significant independent variables, at the .05 level, had a relationship to student achievement. Criterion for a BEST MODEL was to find all the significant independent variables that were produced by significant models. In other words, analysis was first examined for model significance ($p<.05$). If the model achieved significance, then the main effects (independent variables) were examined to determine

which main effects were significant at the .05 level. four models were tested and subjected to this analysis. The resulting significant independent variables that were part of significant models were then used in a Best Model regression where main effects and interactions were examined

Models

Model 1 was not significant based on F=1.51, p< 1.85. Table IX shows the results of the model. Model 2 was not significant based on F= 1.84, p< .096. Table X shows the model.

TABLE IX
MODEL 1 REGRESSION RESULTS
ITBS COMPOSITE = f(OHI Subscales (7))

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Model	879.90*	14	62.85	1.51	.185
Academic Emphasis	123.94	2	61.97	1.48	.247
Consideration	59.91	2	29.96	.72	.498
Morale	322.89	2	161.44	3.88	.035
Principal Influence	77.28	2	38.64	.93	.410
Resources	134.35	2	67.17	1.61	.221
Structure	52.25	2	26.13	.63	.543
Integrity	266.31	2	133.16	3.20	.059
Residual	957.53	23	41.63		
Total	1837.42	37	49.66		

Multiple R squared=.479, (multiple R=.692) All effects entered simultaneously. The option of interaction had to be removed in order for SPSS to have significant memory to run the model.

TABLE X
MODEL 2 REGRESSION RESULTS
ITBS = f(OHI Subscales (7) + SES)

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Model	1071.48	16	66.97	1.84	.096
Academic Emphasis	55.37	2	27.69	.76	.481
Consideration	12.86	2	6.43	.18	.840
Integrity	165.52	2	82.76	2.27	.128
Morale	153.80	2	76.90	2.10	.146
Principal Influence	59.97	2	29.98	.822	.453
Resources	151.02	2	75.51	2.07	.151
Structure	6.94	2	3.47	.10	.910
SES	191.58	2	95.79	2.63	.096
Residual	765.95	21	36.47		
Total	1837.42	37	49.66		

Multiple R squared=.583 (Multiple R=.764) All effects entered simultaneously. The option of interaction had to be removed in order for SPSS to have significant memory to run the model.

Model 3 was not significant based on F= 1.76, p< .141. Results are illustrated in Table XI. Model 4 was significant (F=3.54, p< .017, Multiple R=.703, Multiple R squared=.494) with the significant independent variable RSD Accomplishment (F= 4.38, p< .022), and SES (F= 6.89, p<.004). Illustrated results are in Table XII.

TABLE XI
MODEL 3 REGRESSION RESULTS
ITBS COMPOSITE = f(RSD Subscales (3))

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Model	465.97*	6	77.66	1.76	.141
Accomplishment	319.93	2	159.96	3.62	.039
Environment	53.32	2	26.66	.60	.554
Vision	91.32	2	45.66	1.03	.368
Residual	131.45	31	44.24		
Total	1837.42	37	49.66		

Multiple R Squared =.254 (Multiple R=.504) All effects entered simultaneously. Due to empty cells or singular matrix, SPSS has surpressed higher order interactions. When cells are empty, degrees of freedom will be reduced accordingly

TABLE XII
MODEL 4 REGRESSION RESULTS
ITBS COMPOSITE = f(RSD Subscales (3) + SES)

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Model	907.75*	8	113.47	3.54	.006
Accomplishment	1280.72	2	140.36	4.38	.022
Environment	140.13	2	71.07	2.19	.131
Vision	21.10	2	10.55	.33	.722
SES	441.78	2	220.89	6.89	.004
Residual	381.78	29	32.06		
Total	1837.42	37	49.66		

* Multiple R Squared = .494 (Multiple R= .703) All effects entered simultaneously. Due to empty cells or a singular matrix, higher order interactions have been surpressed.

Model 5, The Best Model, (illustrated in Table XIII) posted an F= 5.67, p< .000, Multiple R= .609, Multiple R squared R= .502. The significant main effects were independent variables Accomplishment (RSD) F= 4.08, p< .028 and SES F= 4.66, p< 0.18. The model also indicated a significant interaction between RSD Accomplishment and SES (F= 3.82, p,>013). In order to understand the nature of the interaction effect, the interaction was plotted, as illustrated in Figure 1.

The plot in Figure 1 has as its vertical, Y axis, the composite ITBS scores. The horizontal, X axis, represents the three levels of scores for the RSD Accomplishment and SES variables. Recall that the independent variables had to be compressed into three levels to

utilize the Standard Regression procedure. In other words, rather than use the school mean scores for the variables, RSD Accomplishment and SES, one (level one), two (level two) or three (level three) were the scores used for these variables. The two lines represent the three levels of RSD Accomplishment and SES. SES is a relatively straight line, whereas RSD Accomplishment varies in direction and magnitude at each of the three levels. This disordinal interaction indicates that the affect of RSD Accomplishment on ITBS Composite scores is moderated by SES.

TABLE XIII
MODEL 5 REGRESSION RESULTS BEST MODEL

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Model	1119.74*	8	139.96	5.66	.000
Accomplishment	201.78	2	100.89	4.08	.028
SES	230.48	2	115.24	4.66	.018
Accomplishment-SES**	377.77	4	94.44	3.82	.013
Residual	717.68	29	24.75		
Total	1837.42	37			

* R Squared =.609 (Adjusted R Squared =.502) All effects entered simultaneously
** Mean difference is significant at the .05 level.

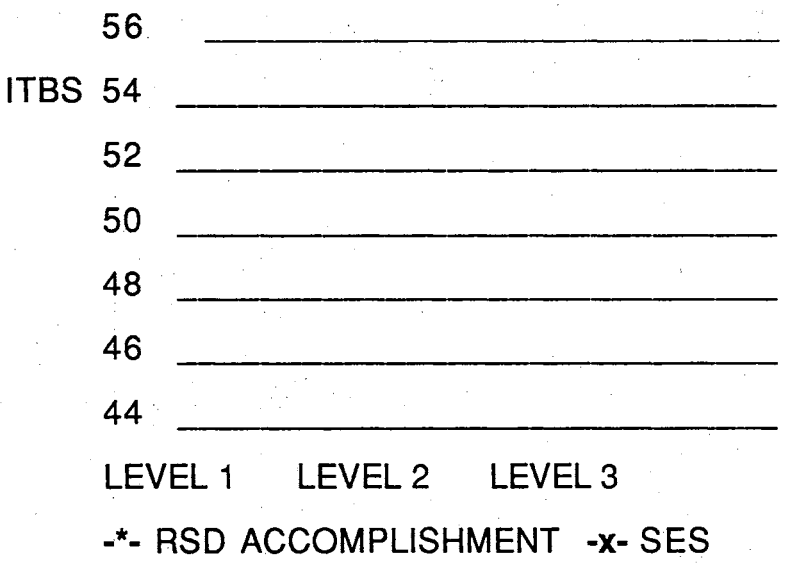


Figure 1. Interaction Effect of RSD Accomplishment and SES on ITBS Sub scores.

The regression method used for model testing was the SPSS Unique/Regression method for Simple GLM Factorial models. With this method, all effects are assessed simultaneously. In order to determine the relative effects of independent variables, the method was changed to a Hierarchical method of Simple GLM Factorial. With the Hierarchical method, main effects are assessed hierarchically, based on the order listed in the model statement. Also, main effects are adjusted for those main effects that have already been assessed. Table XVI Illustrates the results of the Hierarchical Regression with the order of entry specified as RSD Accomplishment, then SES. Table XVII illustrates the results of the Hierarchical Regression with order of entry specified as SES, then RSD Accomplishment.

Although the model, interaction statistics, residual, and total statistics are the same in Tables XIII, XIV, and XV, the F for the independent variables are different. In the Hierarchical methods, SES is a stronger main effect than RSD Accomplishment. When RSD Accomplishment is listed first, and therefore evaluated first leaving SES adjusted for RSD Accomplishment, as seen in Table XIV, SES still yields a stronger F, $F=8.13$, ($p<.002$) than RSD Accomplishment $F=.6.86$, ($p<.004$). When SES is listed first, and therefore evaluated first, as seen in Table XVI, it yields an F of 11.07, ($p<.000$) with RSD Accomplishment yielding an F of 3.92, ($p<.013$).

TABLE XIV
HIERARCHICAL BEST MODEL WITH RSD ACCOMPLISHMENT EVALUATED FIRST, AND SES EVALUATED SECOND AND ADJUSTED FOR RSD ACCOMPLISHMENT

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Model	119.74	8	139.97	5.66	.000
RSD Accomplishment	339.44	2	169.72	6.86	.004
SES	402.54	2	201.27	8.13	.002
RSD Accomplishment SES	377.77	4	94.44	3.82	.013
Residual	717.68	29	24.75		
Total	1837.42	37	49.66		

TABLE XV
HIERARCHICAL BEST MODEL WITH SES EVALUATED FIRST, AND RSD ACCOMPLISHMENT EVALUATED SECOND AND ADJUSTED FOR SES

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Model	119.74	8	139.96	5.65	.000
SES	547.99	2	274.00	11.07	.000
RSD Accomplishment	193.98	2	96.99	3.92	.031
RSD Accomplishment SES	377.77	4	94.44	3.82	.013
Residual	717.68	29	24.75		
Total	1837.42	37	49.66		

Summary

The relationship of the OHI and RSD subscales was tested on the ITBS composite. The only significant model used the RSD subscales and SES as independent variables, with only the RSD subscale Accomplishment posting significance. A Best Model was then tested using variables (RSD Accomplishment and SES) from the two significant models. Best Model results indicated that the overall model was significant with the main effects of RSD Accomplishment and SES exhibiting a relationship with the ITBS Composite and an interaction effect for RSD Accomplishment and SES. When the BEST Model was run using a Hierarchical method that

would adjust for main effects already evaluated, SES consistently posted a stronger F statistic than RSD Accomplishment

CHAPTER V

SUMMARY

Introduction

This chapter is organized into three sections: a discussion, the conclusions and the recommendations of the study. The first section presents a discussion of the problem, methods and findings of the research. The second section reports conclusions in terms of relationships to the literature and the exploratory research questions. The third section presents recommendations for further research and possible implications for practice.

Discussion

The purpose of this study was to explore the relationship of organizational health and environmental robustness on student achievement and attendance. Given no clear rationale for predicting the combined or cumulative effects of these two climate constructs on achievement and attendance, the study employed two research questions as guides to inquiry. Focusing on school-level analysis, the four research questions are:

> RQ1: To what extent can variation in student achievement among schools be accounted for by the relationship between OHI and RSD variables?

RQ2: To what extent can variation in student achievement among schools be accounted for by socioeconomic status?

RQ3: To what extent can variation in average daily attendance among schools be accounted for by the relationship between OHI and RSD variables?

RQ4: To what extent can variation in average daily attendance among schools be accounted for by socioeconomic status?

Student achievement or attendance may be enhanced when routine and frequent harmony among managerial and technical levels (teacher perceptions of healthy conduct) are associated with empathy, creative improvisation and involvement (their perceptions of drama or robustness of this conduct). Rather than mixed metaphors, the researcher explored the notion that health and robustness may be complementary constructs (even when accounting for the socioeconomic status for students).

Participants were from 38 middle schools in a metropolitan area of a midwestern state. Each participant completed the Organizational Health Inventory and the Environmental Robustness Differential instruments. The units of analysis for the study were the school mean scores for each independent variable instrument in the study, ADA, and Standard Curve Equivalents for the ITBS. The total scales and subscales for the Organizational Health Inventory and the Environmental Robustness Differential were analyzed for reliability with all independent variables providing acceptable reliabilities (.537 to .989).

Intercorrelation analyses were completed on all dependent and independent variables. Average daily attendance (ADA), though originally identified as a dependent variable, was not significantly

correlated with the ITBS Composite score and only correlated with one independent variable (OHI Consideration). Because of this low association with the variables of interest, ADA was deleted from subsequent analyses.

To explore the relationship of the independent variables (OHI, RSD, and SES) on the ITBS score, the researcher used standard multiple regression. A sequence of six regression models was tested. The sequence of model testing was similar to the sequence used by Hoy, Tarter, and Kottkamp (1991) who tested the OHI subscales relationship to achievement, then tested OHI subscales with socioeconomic status (SES) added. For this study, the analysis sequence included:

1. OHI subscales and SES on ITBS scores,
2. RSD subscales and SES on ITBS scores respectively.

The purpose of the sequence of model testing was to determine a "Best Model" that might indicate significant relationships on ITBS Composite scores.

As a criterion for model testing, the researcher established a rule stating that only significant independent variables resulting from significant standard multiple regression models were to be considered for the "Best Model." Findings indicated that of the four models tested, only one was significant. Testing RSD subscales and SES on ITBS, indicated only the RSD subscale of Accomplishment and SES was significant.

The final "Best Model," which tested the influence of SES and RSD Accomplishment on the ITBS Composite, posted a significant score ($F=5.66$, $p<.000$). Further, the model included a significant

main effect for each of the two independent variables as well as an interaction effect. The interaction effect suggests, for example, that in schools populated by relatively low socioeconomic level students and teachers who sense relatively robust school accomplishments (or visa versa), these two variables jointly enhance student achievement to a greater extent than either of the independent variables separately.

Conclusions

Based on the test of the research questions and the analysis of the data, the following conclusions are drawn:

Conclusion One: Without SES, neither the organizational health nor environmental robustness appear to be associated with student academic achievement.

Recall that organizational health as defined by Hoy and Miskel (1991) and Hoy, Tartar and Kottkamp (1991) is a perception by key organizational members that their institutional, managerial and technical needs are being met by organizational structure in a harmonious and balanced way. When this is the case in a school organization, one might logically expect that student learning would be accomplished to a higher degree than in schools where this is not the case (all other things being equal). The OHI health subscales would seem to be the best measure of this conception of health and predicting school outcomes. Hoy Tartar and Kottkamp's (1991. pp. 77-78) "second-order factor analysis", in developing the secondary form of the OHI, resulted in the claim that a single overarching

factor occurred that they called "school health" that could be measured by adding the scores on the seven subscales. Hoy and Hannum (1997), and Hoy, Tartar and Kottkamp (1991) report significant associations between selected OHI subscales and student achievement. When SES was added to the OHI subscales on ITBS, Academic Emphasis and SES were significant predictors of school ITBS. With a smaller sample than those employed by Hoy and Hannum (1997) and Hoy, Tarter, and Kottkamp (1991), in this study, OHI Academic Emphasis and Morale exhibited such relationships, but not in a significant model (with or without SES).

There have been reports in the literature describing significant relationships between various robustness concepts and student achievement (Licata & Johnson, 1989; Licata & Wildes, 1980; Logan, Ellett, & Licata, 1993). However, Morris and Ellett (1987) suggest caution in assuming that all robust classrooms and schools were effective units. For example, Licata and Johnson (1989) noted that, "It is probably important to recall that high drama or robustness can be characteristic of schools and classrooms in which formal leadership are in dispute and where there are regular student challenges to authority" (Licata & Johnson, 1989). In the present study, a significant model associating the RSD Accomplishment subscale appeared only with school SES as an independent variable. Theoretically and operationally, robustness in combination with school SES seem better able to explain student achievement than the more simplistic relationship between robustness and student achievement.

Conclusion Two: Relatively high student socioeconomic status and teacher perceptions of robust school accomplishments is significantly related to student achievement.

Those independent variables found significant in previous significant models were used to produce a Best Model with school ITBS composite scores as the dependent variable. Given this decision rule, the only independent variables chosen for the final equation were RSD Accomplishment and student SES. Because the RSD Accomplishment subscale borrowed heavily from the terminology used in Mott's (1972) effectiveness scale, the RSD Accomplishment scale, without the other two RSD scales, appears to be simply a measure of the relative robustness of school effectiveness.

Whereas these findings highlight significant relationships, they do not necessarily provide a theoretical explanation. On the other hand, the resulting significant Best Model and hierarchical models produced not only significant main effects for Accomplishment and SES but an interaction effect which may have some potential for theory building.

Conclusion Three: In schools with low SES and teachers who observe relatively robust school accomplishments (and visa versa), these two variables jointly enhance student achievement to a greater extent than either separately.

The interaction effect, for example, shows that in schools populated by relatively low socioeconomic level students and teachers who sense relatively robust school accomplishments (or visa versa), these two variables jointly enhance student

achievement to a greater extent than either of the independent variables separately. The professional staff at a school cannot do much about student SES (Hoy, Tarter, & Kottkamp, 1991). The professional staff can, however, influence how they feel about school accomplishments (Logan, Ellett, & Licata, 1993).

In high socioeconomic schools, teachers may expect students to do well by virtue of their background rather than as a result of particularly effective teaching or school programs (Brorsen and Jaques, 1997). Teachers share the credit for student success and accomplishments with external socioeconomic conditions and subsequently may experience diminished empathy about school accomplishments.

On the other hand, teachers in low SES schools may sometimes feel that their efforts are the sole or key independent variable in helping their students overcome the limitations of their background. In such cases, school accomplishments or effectiveness may be seen as more meaningful or robust. Wimpelberg, Teddlie, and Springfield (1989, 1995) believe that SES may represent a confluence of factors that conspire to work for or againist effectiveness (accomplishment).

The possible tendency of teachers in affluent settings to sense less empathy about their academic challenges and teachers in more impoverished settings to sense high degrees of empathy with the challenge that their students and school face might be understood as an "underdog interaction effect." In part, this is demonstrated in the motion picture "Stand Alone" depicting principal Joe Clark resurrecting academic accomplishments in an inner-city school. As

the main effects in this study suggest, the favorite often wins and the underdog only on occasion experiences the excitement of an upset. Low SES schools sometimes have demoralized and apathetic teachers and students. High SES schools sometimes have potent and robust instructional programs. Still, as the interaction effect suggests, underdogs producing and observing robust school accomplishments, may have a more powerful influence on student achievement than SES or robustness by themselves.

These findings are reminiscent of those by Loup (1994) who identified a heightened collective sense of teacher efficacy motivation in schools that have a history of repeated failure to accomplish an array. Important school goals such as enhanced student learning or increasing parent involvement Loup, 1994). As with the "underdog interaction effect" in this study, Loup (1994) reported the highest levels of teacher self efficacy in schools that had the highest percentages of students receiving free reduced lunches. The conception and measurement of teacher efficacy in Loup's study emphasized the motivation elements of efficacy such as continuing effort and persistence by individuals and the entire faculty. In many of Loup's lower SES schools, teacher groups viewed adversity and pervious failures as challenges (Loup, 1994). One might speculate from findings in this present study that when success did occur, these accomplishments might be viewed as relatively robust characteristics of school climate.

Recommendations For Further Research

Much of this study is speculative, because not all of the conceptual pieces are available in this data base. Based on the literature reviewed in Chapter II. and the results of this study further exploration might be fruitful in improving the theoretical explanations describing school climate and it's consequences. With this in mind the following recommendations for additional research are made:

One, there is a need to increase the sample for this study. The sample in this study was only 38 schools as compared to samples more than twice the size employed by Hoy, Tarter, and Kottkamp (1991). With a larger sample, this researcher might be better able to asses the findings in this exploratory work. Further, a larger sample would be helpful in comparison of rural, suburban, and urban schools.

Two, for a before and after middle school comparison, this study should be replicated at the elementary 5th grade level and 9th grade high school level.

Three, because only one basic method of determining SES was used in this study, the study should be replicated comparing various methods of determining SES within the same study while using the same methods of measuring achievement.

Four, efforts should be made to improve theoretical conceptions of climate and operational measurements

Five, noteworthy is a recent work by Hoy and Tarter (1997) "The Road to Open and Healthy Schools: A Handbook for Change". If

the purpose of implementing open and healthy schools is to enhance the probability of student learning while holding SES constant, their grounds for making this claim seems promising but premature. Over time, the pattern of the analyses leading to such claims by Hoy and his associates typically fail to report whether or not such relationships are part of a significant model, F values or possible interaction effects (Hoy & Tarter, 1997). When this study did so, no significant model for OHI subscales and student achievement emerged from analysis. Further, the additional step in model development, Hierarchical GLM, in this study shed some additional light on the importance of SES. Without evidence that the significant relationships are part of significant models, practitioners should exhibit caution in viewing organizational health as a finished piece of work ready for implementation in schools.

REFERENCES

Abbott, M. G., & Caracheo, F. (1988). Power, authority, and bureaucracy. In Norman J. Boyan (Ed.) Handbook of research on educational administration (pp. 240-241). New York: Longman.

Adams, B. & Bailey, G. D. (1989). School is for teachers: enhancing the school environment. NASSP Bulletin, 75(513), 44-48.

Adams, J. & Hicks, J. M. (1978, Spring). Leader sex, leader descriptions of own behavior. A paper presented at the annual meeting of the Military Testing Association.

Alvy, H. B. & Coladarci, T. (1985). Problems of the novice principal: Research in Rural Education, 3, 39-47.

American Association of School Administrators. (1983). The role of principals in effective schools. Washington D. C.: American Association of School Administrators.

Anderson, L. W. & Van Dyke, L. A. (1963). Secondary school administration, Boston: Houghton Mifflin Co.

Anderson, C. S. (1982). The search for school climate: A review of the research. Review of Educational Research, 52(8), 368-420.

Armstrong, C. (1989). How you're doing as a principal? Executive Educator, 12, 23-24.

Asher, W. J. (1976). Educational research and evaluation methods. Canada: Little Brown

Association for Supervision and Curriculum Development Working Group in the Emerging Adolescent Learner Staff (1975). The middle school we need. Washington, DC: ASCD.

Babbie, E. (1995). The practice of social research. New York: (7th ed.) Wadsworth

Barnard, C. (1938). The functions of the executives. Cambridge, Mass. Harvard University Press.

Barnard, C. (1948). The functions of the executives. Cambridge, Mass(2nd ed.) Harvard University Press.

Barnard, C. (1968). The functions of the executives. Cambridge, Mass (3rd ed). Harvard University Press.

Bass, B. N. (1981). Stogdill's handbook of leadership: A survey of theory and research. (Rev. ed.) New York: Free Press.

Baylor, V. E. (1989). The relationship between leadership effectiveness principals and school climate in elementary schools in the District of Columbia. Dissertation Abstracts International, 50, 312-A

Barth, R.S. (1988). Principals, teachers, and school leadership. Phi Delta Kappan. 69(7), 639-642.

Belbin, R. M. (1981). Management teams: Why they are succeed or fail. New York: John Wiley & Sons

Benne, K. P. (1944), A conception of authority. New York: Russell & Russell.

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

Berg, K. A. (1977). Educational leadership. The Clearing House, 50(5), 212-214.

Bergerth, R. (1970). Morale among teachers employed by rural school districts, Doctoral Dissertation presented to the University of North Dakota. In M. Fickle (1981). A study on teacher morale at a selected secondary school. Dissertation Abstracts International, 65, 2393-A.

Bergman, A. B. (1992). Lessons for principals from site-based management. Educational Leadership, 50(1), 48-49.

Berman, L. M. (1971). Supervision, staff development and leadership. Columbus, OH: Merill.

Berman, P. & McLaughlin, M. W. (1976). Implementation for educational innovation. The educational forum, 40, 345-370.

Berreth D., & Scherer, M. (1993). On transmitting Values: A conversation with Amitai Etzioni. Educational Leadership, 51(3), 12-15.

Blachard, K., Zigarmi, P. & Zigarmi, D. (1990). Leadership and the one minute manager. New York: Morrow.

Blank, R. K. (1987). The role of the principal: Analysis of variation in leadership of urban schools. Journal of Educational Research, 81, 69-80.

Blaze, J. J., Strathe, M. L. & Pajak, E. F. (1986). A theory of teacher performance: Preservice and inservice implications. Contemporary Education, 57(3), 138-143.

Blau, P. M. (1964). Exchange and power in social life. New York: John Wiley and Sons, Inc.

Blau, P. M. (1974). On the nature of organizations. New York: Wiley

Blau, P. M. (1992). The American occupational structure: Reflections after 25 years, Contemporary Sociology, 25(5), 597-598.

Blau, P. M. and Scott W. R. (1962). Formal organizations: A comparative approach. San Francisco: Chandler.

Blumberg, A. (1974). Supervisors and teachers: A private cold war. Berkley: McCutchen.

Blumberg, A. (1989). School administration. Boston: Allyn and Bacon.

Blumberg A. & Greenfield, W. D. (1986). The effective principal, (2nd ed.). Boston: Allyn and Bacon.

Boston, J. A. (1991). School leadership and global education: Global education from thought to action. ASCD Yearbook, 88-98.

Bossert, S., Dwyer, D., Rowen, B., & G. Lee. (1982). The instructional management role of the principal. Educational Administration Quarterly, 18(3), 34-64.

Bowers, D. G. & Seashore, S. E. (1969). Predicting organizational effectiveness with a four-factor theory of leadership. In L. L. Cummings & W. E. Scott, (Eds.) Readings in organizational behavior (pp. 541-543, 562-571) New York: Harwood.

Brandt, R. (1992). A different kind of leader. Educational Leadership, 45(5), 7-8

Brandt, R. (1993). What do you mean, "professional"? Educational Leadership, 50,(6), 5-6.

Brandt, R. (1993). On restructuring roles and relationships: A conversation with Phil Schlechty. Educational Leadership, 51,(2), 8-9.

Brandt, R (1996). Climate in the classroom - and in the classroom. Educational Leadership, 54,(1), 5-6.

Braun, J. B. (1989). Communicating the vision. The ATA Magazine, 69(2), 23-25.

Bruan, J. B. (1991). An analysis of principal leadership vision and its relationship to school climate. Dissertation Abstracts International, 52, 1139-A.

Bridges, E. M. (1964). Teacher participation in decision making. Administrator's Notebook, 12(5), 1-4.

Bridges, E. M. (1965). Bureaucratic Role and socialization: The influence of experience on the elementary principal. Educational Administrative Quarterly, 1(5), 19-28.

Bridges, E. M. (1967). A model for shared decision making in the school principalship. Educational Administrative Quarterly, 3(12), 41-61.

Bridges, E. M. & Doyle, W. J. (1968). The effects of hierarchical differentiation on group productivity, efficiency, and risk taking. Administrative Science Quarterly, 13(8), 305-319.

Bridges, E. M. (1986). How do administrators cope with incompetence? Education Digest, 51(7), 21-23.

Bridges, E. M. & Hallinan, M. T. (1978). Subunit size, work system interdependence, and employee absenteeism. Educational Administration Quarterly. 14(8), 24-42.

Brorson, B. & Jacques, C. (1997) Rankings of Oklahoma school districts. Current Farm Economics,

Brown, R. E. (1991). On leadership effectiveness. Phi Delta Kappan, 72 (10), 805-806.

Brubacher, D. L. & Simon, L. H. (1987). How do principals view themselves? others? NASSP Bulletin, 71, 72-78.

Burns, J. M. (1979). Two excerpts from leadership. Educational Leadership, 36(4), 380-383.

Byrnes, J. L. (1972). A study of certain relationships among perceived supervisory style, participativeness and teacher job satisfaction. Dissertation Abstracts International, 33, 5427-A

Calabrese, R. L. (1987). The principal: An agent for reducing teacher stress. NASSP Bulletin, 71(1), 45-47.

Campbell, R. (1975). The organization and control of American schools, Columbus, OH: Merrill, 226-229.

Campbell, R., Fleming, T., Newell, L., & J. Bennion (1987). A history of though and practice in educational administration. New York: Teachers College Press.

Cassel, R. & Stancik, E. (1961). Leadership ability evaluation manual, Los Angles: University of California.

Cassel, R. & Stancik, E. (1980). Leadership ability evaluation manual, Revised edition, Los Angles: University of California.

Cilo, D. (1989). Principals: Leave your office, improve your schools. NASSP Bulletin, 73(519), 111-114.

Clark, P. A. & Stefurak A. L. (1975). Leadership for change. Community Education Journal, 5(6), 18-20.

Clark-Jones, F. (1992). The examination of factors influencing teachers' compliance/noncompliance with the Illinois abuse and neglected child reporting act. Dissertation Abstracts International, 53, 3077-A

Clear, D. K., & Seagar, R. C. (1971). The legitimacy of administrative influence as perceived by selected groups. Educational Administrative Quarterly, 7(12), 61-62.

Cohen, J. (1988). Statistical power analysis for behavior scores. Hillsdale, NJ: Lawrence Erlbaum.

Coleman, J. S. (1961). The adolescent society, New York: Free Press.

Cooper, B. S., Sieverding, J. W. & Muth, R. (1988). Principals' management behavior, personality types, and physiological stress. Journal of Educational Administration, 26(2), 197-221.

Connelly, M. N. (1992). Seventh and eighth grade teachers' perceptions of principals' effectiveness, school climate, and student achievement. Dissertation Abstracts International, 52, 1142-A.

Cox, G. B. (1977). Managerial style: Implications for the utilization of program evaluation information. Evaluation Quarterly, 1(3), 499-509.

Coska, L. S. (1977). Relationship between organizational climate and situational favorableness. Journal of Applied Psychology, 60(4), 273-275.

Cronbach, L. J. (1951). Coefficient alpha and the internal structure of test. Psychometrika, 16(9), 297-332.

Croyden, M. (1974). Lunatics, lovers, and poets: The contemporary experimental theatre. NY: McGraw-Hill.

Day, D. R. (1961). Basic dimensions of leadership in a selected industrial organization. Columbus, OH: University Press.

Deitzer, B. A. Shilliff, K. A. & Becker, D. E. (1988), Contemporary management: Principals and concepts, (2nd ed.) Akron, OH: Authors.

Dewey, J. (1929). The sources of a science of education, 8-9. New York Horace Liveright.

Doggett, M. (1987). Staff development: Eight leadership behaviors for principals, NASSP Bulletin, 71, 1-10.

Dorman, M. T. (1987). The relationship between teachers' acceptance of authority and their local-cosmopolitan orientation. Unpublished doctoral dissertation, Mississippi State University, Starksville.

Doyle, D. P. & Hartle, T. W. (1985). Leadership in education: Governors, legislatures, and teachers. Phi Delta Kappan, 71(1), 21-27.

Drury, W. (1988). Entry year administrative induction: A state and local school district model. Educational Research Service Spectrum, 6 (1), 14-15.

Duke, D. L., Showers, B. K. & Imber M. (1981). Teachers and shared decision making: The cost and benefits of involvement. Educational Administrative Quarterly, 16(1) 93-106.

Durkheim, E. (1947). The division of labor in society. New York: Free Press.

Edmonds, R. R. (1979). Effective schools for the urban poor. Educational Leadership, 37 (3),15-24.

Edwards, M. A. (1995). Growth is the name of the game. Educational Leadership, 52(6), 72-74.

Ellenberg, F. C. (1972). Factors effecting teacher moral: Meaning for the principals. NASSP Bulletin, 56, 115-122.

Ellett, C. D. & Walberg, H. J. (1979). Principal competency, environment, and outcomes. In H. J. Walberg (Ed.) Educational environments and effects. (pp. 140-167). Berkley: McCutchan..

Ellett, C. D. & Licata, J. W. (1982). The perceptions of organizational roles, robustness and work environment: A regression analysis. Journal of Educational Administration, 20(1), 33-44.

Engelking, J. L. (1987). Attracting and retaining quality teachers through incentives. NASSP Bulletin, 71(500), 1-8.

Estep, L E., Willowor, D. J., & Licata, J. W. (1980). Teacher pupil control ideology and behavior as predictors of classroom robustness. The High School Journal, 63, 155-159.

Etzioni, A. (1964). Modern organizations. Englewood Cliffs, New Jersey: Prentice-Hall.

Etzioni, A. (1975). A comparative analysis of complex organizations. (rev. ed.) New York: The Free Press.

Etzioni, A (1993). Normative-affective choices. Human Relations, 46(9), 1053-1069.

Eye, G. G. (1975). Assigned power and ascribed leadership. Journal of Educational Research, 68, 230-235.

Evans, D. (1987). Leadership misconstrued: The myth of "super principal" Thrust for Educational Leadership, 3, 37-39.

Fairman, M. Holmes, M. Hardage, J. & Lucas, C. S. (1979). Manual for organizational health instrument. Fayetteville, AR: Diagnostic and Development Corporation.

Featherstone, R. L. & Romano, L. (1977). Evaluation of administrative performance. The Clearing House, 50(9), 412-415.

Feistritzer, C. E. (1986). Education vital signs: Teachers. American School Board Journal, 173(10), A12-A16.

Finn, C. E. (1987). How to spot an effective principal. Principal, 9, 20-22.

Fiorello, A. (1973). Leadership concepts for principals. NASSP Bulletin 57, 21-23.

Firestone, W. A., & Herriott, R. E. (1982). Two images of schools as organizations. Educational Administration Quarterly, 18, 39-59.

Follett, M. P. (1941). Dynamic Administration. New York: Harper

Fraenkel, J. R., & Wallen, N. E. (1990) How to design and evaluate research in education. New York: McGraw-Hill

Fullan, M. G. (1992). Visions that blind. Educational Leadership, 45(5), 19-20.

Fullan, M. G. & Hargreaves (1991) Whats worth fighting for? Working together for your school. Toronto: Ontario Public schools teachers federation.

Glass, G. V. & Stanley, J. C. (1970). Statistical methods in education and psychology. Englewood Cliffs, N. J.: Prentice Hall.

Gapport, J. & Gutridge, C. (1980). Leadership styles of behavior in selected elementary administrators. In H. S. Hunter, (1983). A study to determine the relationship between leadership effectiveness and style on teacher moral in selected urban secondary schools in the Washington area. Dissertation Abstracts International, 44, 148-A.

Gardner, J. W. (1986). Leadership papers/2: The tasks of leadership. Washington, D.C.: Independent Sector.

Geltner, B. B. (1981). Teacher perceptions of the principal's leadership behavior as related to school effectiveness. Dissertations Abstracts International, 42, 475-A.

George, P. S., Stevenson, C., Thompson, J. & Beane, J. (1992). The middle school and beyond. Alexandria, VA. ASCD.

Getzels, J. (1978). The communities of education. Teacher College Board, 79(5), 673-674.

Getzels, J. & Guba, E. (1957). Social behavior and the administrative process. School Review, 34(12), 423-444.

Getzels, J. & Guba, E. (1958). Administration as a special process. In Andrew W. Halpin (Ed.) Administrative theory in education. pp. 150-151. New York: Macmillan.

Getzels, J., Thelen, H. (1960). The classroom as a unique social system. In N. B. Henry (Ed.) The dynamics of instructional groups: Fifty ninth yearbook of the National Society for the Study of Education. pp. 81-82. Chicago: University Press.

Getzels, J., Lipham, J. & Campbell, R. (1968). Educational administration as a social process. New York: Harper & Row.

Gergopouios, B. S. & Tannenbaum, A. S. (1957), A study of organizational effectiveness. American Sociological Review, 22,(5), 26-27.

Glickman, C. (1991). Pretending not to know what we know. Educational Leadership, 48(8), 4-9.

Goffman, E. (1959). Presentation of self in everyday life. NY: Double Day.

Good, T. L. & Weinstein, R. S. (1986). Schools make a difference: Evidence criticisms and new directions, American Psychologist, 41, 1090-1092.

Goodlad, J. I. (1968). Towards the creation of satisfying work places. Los Angles, University of California.

Goodlad, J. I. & Oaks J. (1988). We must offer equal access to knowledge. Educational Leadership, 45(5), 16-22.

Gorden, B. Stockard, J. & Williford, H. (1991). The perceived and expectant roles and responsibilities of departmental chairpersons in schools of education as determined by teaching faculty. Education, 112(2) p.176-182.

Graja, R. (1991). A redefinition. Phi Delta Kappan, 72(10), 805-809.

Green, J. (1980). A summary of technical information about LEAD. San Diego: Learning Resources Corporation.

Greenfield, W. D. (1995). The moral socialization of school administrators: informal role learning outcomes. Educational Administrative Quarterly, 21 99-119.

Griffiths, D. E. (1956). Human relations in school administration. New York: Appleton-Century-Crofts.

Griffiths, D. E. (1962). Organizing schools for effective education. Danville, Ill: The Interstate Printers & Publishers.

Griffiths, D. E. (1985). Administrative theory in administration. Victoria, Australia: Deakin University Press.

Grimmett, P. P., Rostad, O. P. & Ford, B. (1992). The transformation of supervision. Supervision in transition. ASCD Yearbook, 187-188.

Guba, E. G. (1968). Diffusion of innovation. Educational Leadership, 25, 292-295.

Guba, E. G. (1978). Toward a methodology of naturalistic inquiry in educational evaluation. Los Angeles: Graduate School of Education, University of California.

Guba, E. G. (1981). Effective evaluation. San Francisco: Jossey-Bass.

Haggett, P. Cliff, A. D. & Frey, A. (1977). Locational analysis in human geography. (2nd Ed.) New York: Halsted

Halpin, A. W. (1955). The leadership ideology of aircraft commanders. Journal of Applied Psychology, 39. 82-84.

Halpin, A. W. (1957). Manual for the leader behavior description questionnaire. Columbus, OH: Bureau of Business Research, State University.

Halpin, A. W. & Croft, D. B. (1963). The organizational climate of schools. Chicago: Midwest Administrators Center.

Halpin, A.W. (1966). Theory and research in administration. New York: Macmillan.

Hambleton, R. K. (1987) Iowa test of basic skills. In D. J. Keyer & R.C. Sweetland (Eds.) Test Critiques VI. (pp.277-286). Kansas City, Test Corporation of America.

Hanson, E. M. (1979). Educational administration and organizational behaviors. Boston: Allyn and Bacon.

Hansen, J. M. (1978). The evaluation of teaching: No puppies or goldfish in my classroom. NASSP Bulletin, 62(416), 11-15.

Harris, B. M. (1975). Supervisory behavior in education. Englewood Cliffs, NJ.: Prentice-Hall.

Harris, B. M. & Hartgraves, W. (1972). Supervisor effectiveness? A research resume. Educational Leadership, 30, 73-79.

Hattrup, R. A. & Bickel, W. E. (1993). Teacher-researcher collaborations: Resolving the tensions. Educational leadership, 50(6), 38-40.

Heck, R. H. (1991). Towards the future: Rethinking the leadership role of the philosopher-king. Journal of Educational Administration, 29 (3), 67-79.

Helm, C. M. (1989). Cultural and symbolic leadership in Catholic elementary schools: An ethnographic study. Dissertation Abstracts, 50, 1156-A-1157-A.

Henry, G. T. (1990). Practical sampling. Newbury Park: Sage

Henry, M. L. (1981). What it's like in the middle. Principal, 60(3), 26-29.

Hersey, P. & Blanchard, K. (1982). Management of organizational behavior: Utilizing human resources. New Jersey: Prentice-Hall.

Herzberg, F. (1966). Work and the nature of man. Cleveland: World Press.

Hixson, J. & Lovelace, K. (1992). Total quality management's challenge to urban schools. Educational Leadership, 50(3), 26-29.

Hoerr, T. K. (1996). Collegiality. Phi Delta Kappan, 77(5), 380-381.

Howell, D. C (1987). Statistical Methods for Psychology (2nd Ed.) Boston, Duxbury Press.

Hoy, W. K. & Clover, I. R. (1986). Elementary school climate: A revision of the OCDQ. Educational Administration Quarterly, 22(12), 93-110.

Hoy W. K. & Feldman, (1987). Organizational health: The concept and its measure. Journal of Research and Development in Education, 20, 30-53.

Hoy, W. K. & Forsyth, P. B. (1986). Effective supervision: Theory into practice. New York: Random House.

Hoy, W. K. & Hannum, J. W. (1997). Middle school climate: An empirical assessment of organizational health and student achievement. Educational Administration Quarterly, 33(3), 290-311.

Hoy, W. K., & Miskel, C. G. (1978). Educational administration: Theory, research, and practice. New York: Random House.

Hoy, W. K., & Miskel, C. G. (1991). Educational administration: Theory, research, and practice. (4th ed.) New York: McGraw-Hill Inc.

Hoy, W. K., Tarter, J. C. (1992). Measuring the health of school climate: A conceptual framework. NASSP Bulletin, 76(547), 74-90.

Hoy, W. K., Tarter, J. C. (1997). The road to open and healthy schools: A handbook for change, middle and secondary school edition. Thousand Oaks, CA: Corwin Press.

Hoy, W. K., Tarter, J. C., & Bliss, J. R. (1989). School characteristics and faculty trust in secondary schools. Educational Administrative Quarterly, 25(3), 294-308.

Hoy, W. K., Tarter, J. C., & Bliss, J. R. (1990). Organizational climate, school health, and effectiveness. Educational Administrative Quarterly, 26(2), 260-279.

Hoy, W. K., Tarter, J. C. Kottkamp, R. B.(1991). Open schools/healthy school climate measuring organizational climate. Newbury Park CA: Sage.

Hue, J. K. (1993). Superstar teachers need attention, too. Educational Leadership, 50(6), 89-90.

Hunter, H. S. (1983). A study to determine the relationships between Administrative effectiveness and style on teacher moral in selected urban secondary schools in the greater Washington area. Dissertation Abstracts, 44, 30.

Hyerle, D. (1996). Visual tools for constructing knowledge. Alexandria, VA: ASCD

James, L. R. & Jones, A. D. (1974). Organizational climate: A revision of the theory and research. Psychological Bulletin, 81, 1096-1112.

Jason. M. H. (1987). Principals' and teachers' perceptions of school environmental robustness. Paper presented at the annual meeting of the Southwest Educational Research Association, Dallas, Texas.

Jason, M. H. (1988). The relationship between organizational effectiveness of schools and their environmental robustness: A study involving perceptions of principal and teachers. Paper presented at the annual meeting of the Southwest Educational Research Association, San Antonio, Texas.

Johnson, L. M. (1991). Real empowerment. Phi Delta Kappan, 72(8), 647-648.

Johnson, N. A. & Holdaway, E. A. (1992). Perceptions of effectiveness and the satisfaction of principals in elementary schools. Journal of Education, 29(1), 51-69.

Johnson W. L., Dixon, P. N. & Johnson, A. (1990-91). An investigation of the Charles F. Kettering climate scale. National Forum of Applied Educational Research Journal, 4(1), 64-71.

Jones, R. R. (1993). No principal is an island. Phi Delta Kappan, 74(9), 740- 741.

Joyce, B., Wolf, J. & Calhoun, E. (1993). The self-renewing school. Alexandria, VA: ASCD

Kaiser, H. F. (1960). The application of electronic computers to factor analysis. Educational and Psychological Measurement, 20, 141-151.

Kanter, R. (1968). Commitment and social organization: A study of commitment mechanisms in utopian communities. American Sociological Review. 33, 499-517.

Kanter, R. M. (1983). The change masters. New York: Simon & Schuster

Kanter, R. M. (1990). When giants learn to dance: Mastering the challenge of strategy, management, and careers in time 1990's. New York: Simon & Schuster.

Kegan, R. (1995). Giving voice to our hidden commitments and fears. The Harvard Educational Letter, XI(1), 3-6.

Kimball, W. & Lovell, J. T. (1975). Supervision for better schools. Englewood Cliffs, N.J.: Prentice-Hall.

Kimetz, J. T. & Willower, D. J. (1982). Elementary school principals work behavior. Educational Administration Quarterly, 18,(6), 62-78.

Kimpston, R. D. & Sonnabend, L. C. (1975). Public schools: The interrelationships between organizational health and staff characteristics. Urban Education, 10, 27-48.

Knezewich, S. J. (1969). Administration of public education. (2nd ed.) New York: Harper and Row.

Koll, P. J., Dixon, P. N., & Johnson, A. (1988-89). Continued professional development: Implications for teacher educators. Action in Teacher Education, 12, 24-31.

Kottkamp, R. B., Mulhern, J. A. & Hoy, W. K. (1987). Educational Administration Quarterly, 23(8), 8-10.

Kouzes, J. M. & Posner, B. Z. (1990). The leadership challenge: How to get extraordinary things one in organization. San Francisco: Jossey-Bass.

Krejcie, R. & Morgan, D. A. (1970) Determining sample size for research activities. Educational and Psychological Measurement. 30(6), 607-610.

Kuehl, C. R. et al. (1975). Leadership orientation as a function of interpersonal need. Journal of Applied Psychology, 60, 143-145.

Kunz, D. W., & Hoy, W. K. (1976). Leadership style of principals and the professional zone of acceptance of teachers. Educational Administration Quarterly, 12(8), 49-64.

Laidlaw, A. F. (1972). Leaders in leadership. Adult Leadership, 21, 171-172.

Lambert, M. (1988). Higher math thrives in an L.A. barrio. Baton Rouge Morning Advocate, pp. I-28.

Lebert, L. M. (1993). The relationship between teacher perception of administrative performance of leadership and teacher perception of school climate in catholic schools in Louisiana. Dissertation Abstracts International, 54, 1615.

Lehman, L. E. (1989). Practical motivational strategies for teacher performance and growth. NASSP Bulletin, 73(520), 76-80.

Leithwood, K. A. (1992). The move towards transformational leadership. Educational Leadership, 45(5), 9-12.

Leithwood, K. A. & Montgomery, D. J. (1982). Role of the elementary school principal in program improvement. Review of Educational Research, 52,(3),31-60.

Leithwood, K. A. & Montgomery, D. J. (1986). Improving principal effectiveness: the principal profile. Toronto: OISE Press.

Leithwood, K. A. & Steinbach R. (1992). Improving the problem solving expertise of school administrations: Theory and practice. Education and Urban Society, 24(3), 317-345.

Leslie, K. (1989). Administrators must consider and improve teacher satisfaction. NASSP Bulletin, 73(513), 19-20.

Levine, M. (1986). Excellence in education: Lessons from America's best-run companies and schools. Peabody Journal of Education, 63(12), 152-153.

Lewin, A. (1951). Field theory in Social Science. New York : Harper

Liberman, A. (1992). School/university collaboration: A view from the inside. Phi Delta Kappan, 74(2), 149, 154.

Libovitz, S. & Hagedorn, R. (1981) Introduction to social research (3rd Ed.). New York: McGraw-Hill.

Licata, J. W. (1974). A study of systemic functions of student brinkmanship. Unpublished doctoral dissertation, Pennsylvania State University, University Park.

Licata, J. W. & Johnson, B. L. (1989). Towards a synthesis of inquiry on environmental robustness. Planning & Changing, 20(4), 215-230.

Licata, J. W. Teddlie C. B. & Greenfield W. D. (1990). Principal vision, teacher sense of autonomy, and environmental robustness. Journal of Educational Research, 84(21). 93-99.

Licata, J . W & Wildes J. R.. (1980). Environmental robustness and classroom structure: some field observations. The High School Journal, 63, 146-154.

Licata, J. W. & Willower, D. J. (1978). Toward an operational definition for environmental robustness. Journal of Educational Research, 71(4), 218-222.

Likert R. (1961). New patterns of management. New York: McGraw-Hill.

Likert R. (1967). The human organization: Its management and value. New York: McGraw-Hill.

Likert R. (1978). The profile of a school: A resource for improving school administrators. Ann Arbor, MI: Renis Likert Associates.

Linden, J. D. & Linden, K. W. (1968). Test on trial. Boston: Houghton-Mifflin.

Lipham, J. M. (1981). Effective principal, effective school. Reston: NASSP.

Little, J. W. (1990a). The mentor phenomenon and the social organization of teaching. Review of Research in Education,16, 297-351.

Logan, C. S. (1990). An explanation of the "paradoxical" view of structural coupling. Unpublished doctoral dissertation, Louisiana State University, Baton Rouge.

Logan, C. S., Ellett, C. D., Licata, J. W. (1993). Structural coupling, robustness, and effectiveness of schools. Journal of educational research, 31(4),19-32.

Lortie, D. C. (1975). Schoolteacher: A sociological study. Chicago: University Press.

Lortie, D. C. (1977). The balance of control and autonomy in elementary school teaching. In Donald Erickson (Ed.) Educational organization and administration. pp. 3355-371. Berkeley: McCutchan.

Loup, K. S., (1994), Measuring and linking school professional earning environment characteristics, teacher self and organizational efficiency, receptability to change and multiple ideas of school effectiveness. Unpublished Dissertation. Louisiana State University, Baton Rouge, LA

MacDonald, J.B.(1966). Helping teachers change. In J. Rath & R.R. Leeper (Eds.), The supervisor: agent for change in education (pp. 1-14), Washington, D. C., ASCD.

Mangieri, J. N. & Arnn, J. W. (1985). Excellent schools: The leadership functions of principals, American Education, 21(3), 8-10.

Mann, D. (1988). Principals, leadership, and reform. Education Week, 18, 14-16.

Marshall, C. (1992). The assistant principal: Leadership choices and challenges, Newbury Park, CA: Corwin Press.

Marder, E. (1960). Leader behavior as perceived by subordinates as a function of organizational level. Columbus, OH: University Press.

Maslow, A. H. (1987). Motivation and personality (3rd ed.). New York: Harper and Row.

Mathews, D. (1996). Is there a public for public schools? Dayton OH: Kettering Foundation Press.

Mathews, K. M. (1976). Casebook for educational administrators. Athens, GA: University of Georgia.

Mathis, C. (1959). The relationship between salary policies and teacher morale. Journal of Educational Psychology, 50, 257-279.

McClave, J. T., Benson, G. P. (1988) Statistics for business and economics. Riverside, N.J.: Dellen Publishing Co.

McCelland, D. C. & Burham, D. H. (1976). Power is the motivator. Harvard Business Review, 100, 100-101.

McLaughlin, M. W., Pfeifer, R.S., Swanson-Owens, D. & Yee, S. (1986). What teachers won't teach. NASSP Bulletin, 2, 420-426.

McNamara, J. F. (1994). Surveys and experiments in educational research. Lancaster, PA: Technomics.

McPherson, B. R., Crowson, R. L., & Pitner, N. J. (1986). Managing uncertainty: Administrative theory and practice in education. Columbus, OH: Merrill.

Merenbloom, E. Y. (1988). Developing effective middle schools through faculty participation (2nd ed.). Columbus, OH: National Middle School Association.

Meier, D. (1995). The power of their ideas. Boston: Beacon Press.

Miles, M. B. (1969). Planned change and organizational change: Figure and ground. In F. D. Carver & T. J. Sergiovanni (Ed.) Organizations and human behavior. (pp. 375-391). New York: McGraw-Hill.

Miles, M. B. ((1975) Comments from Miles. Urban Education, 18, 46-48.

Mitchell, D. E. & Peters, J. J. (1982), A stronger profession through appropriate teacher appropriate teacher incentives. Educational Leadership, 35(9), 74-78.

Mitchell, D. E. & Tucker, S. (1992) Leadership as a way of thinking. Educational Leadership, 45(5), 30-35.

Miskel, C. (1977). Principals' attitude towards work and co-workers situational factors, perceived effectiveness, and innovation effort. Educational Administration Quarterly, 13, 51-70.

Miskel, C. & Ogawa, R. (1988). Work, motivation, job satisfaction, and climate. In N. J. Boyan (Ed.) Handbook of research on educational administration. (pp. 279-304). New York: Longman.

Monahan, W. G. (1975) Some antecedents of theory in educational administration. In W. G. Monahan (Ed.) The theoretical dimensions of educational administration. (pp. 13-48). New York: MacMillian.

Montgomery, C. A. (1990). The relationship between Mississippi teachers' perceptions of school climate and their compliance with administrative directives. Dissertation Abstracts International, 51, 3583-A.

Montgomery-McMinn, C. (1991). The relationship between teacher's perceptions of school climate and their compliance with administrative directives. National Forum of Applied Educational Research Journal, 4(1), 50-53.

Morris, B. (1986). Teacher perceptions of multiple dimensions of the work environment, environmental robustness, and school holding power. Unpublished doctoral dissertation, Louisiana State University, Baton Rouge.

Morris, B. & Ellett, C. D. (1987). School environmental robustness, holding power and achievement: implications for effective middle schools. In Council of Middle School Research: Selected Studies.

Mott, P. E. (1972). The characteristics of effective organizations, New York: Harper & Row.

Mowen, G. G. (1993). Comparison study of the implementation rate of eighteen middle schools characteristics in Michigan and national blue ribbon schools. Dissertation Abstracts International, 54, 761-A.

Multhauf, A . P, Willower, D. J. & Licata, J. W. (1978). Teacher pupil-control ideology and behavior and classroom environmental robustness. Elementary School Journal, 79(1), 41-46.

Murdy, L. L. (1975). Effectiveness of administrative working relationships. Administrative Working Relationships Profile and Scale, 18, 22-24.

Murphy, J. (1988). Methodological, measurements, and conceptual problems in the study of instructional leadership. Educational Evaluation and Policy Analysis, 10, 177-179.

Murphy, R. E. (1974) The American city: An urban geography. (2nd Ed.) New York: McGraw-Hill.

Nathan, J. (1987). The Governors report: Implications for principals. Principal, 24, 30-32.

Newman, C. J., Licata, J. W. (1987). Teacher leadership and classroom climate as predictors of student brinkmanship. High School Journal, 70(2), 102-110.

News Exchange Issue. (1979). Why are there so few women in leadership positions in education? ASCD News Exchange, 21(8), 4-5.

Nunnally, J. C. (1978). Psychometric theory. (2nd ed.) New York: McGraw-Hill.

Ogawa, R.T. (1966). Bridging and buffering relations between parents and schools. UCEA Review, 37, 2-13.

Oklahoma School Testing Program (1996) Achievement test componet,1996 summary report, Iowa test of basic skills. Oklahoma City: State Department of Education Printing Service.

Oklahoma Educational Indicators Program, (1996). School report, A report of public school site-based results in the state of Oklahoma. Oklahoma City: Office of Accountability, State Printing Service.

Olsen, M. E. (1968). The process of social organization. New York: Holt, Rhinehart, & Winston.

O'Neal, E. C. (1988). Effect of student teaching experience on attitudes towards administrative directives. Paper presented at the Mid-South Educational Research Association Annual Conference, Louisville, KY.

O'Neal, J. (1995). On schools as learning organizations: A conversation with Peter Senge. Educational Leadership, 52(7), 20-23.

Ornstein, A. C. (1986). Curriculum, instruction, and supervision-their relationship and the role of the principal, NAACP Bulletin, 70, 74-81.

Ortiz, E., Ellett, C. D. (1988). Learning retention and perceived robustness in computer-assisted learning environment. Paper presented at the annual meeting of the American Educational Research Association, New Orleans.

Osgood, C. E., Suci, G. J. & Tennenbaum, P. H. (1957) The measurement of meaning. Urbana, IL: University of Illinois Press.

Ott, S. J. (1994), Toward a definition of organizational incompetence: A neglected variable in organizational theory. Public Administrative Review, 54(4), 370-377.

Ovard, G. F. (1990). Leadership: Maintaining vision in a complex area. NASSP Bulletin, 74(523), 1-4.

Owens, R. G. (1987). The leadership education clans. Leadership: Examining the elusive. 1987 yearbook ASCD, 25-26.

Pajak, E T. (1993). Change and continuity in supervision and leadership. Challenges and achievements of American education. ASCD Yearbook, 158-130.

Parkay, F. W., Gaylon, C. D., Rhodes, J. W. (1992). Professional socialization: A longitudinal study of first-time high school principals. Educational Administrative Quarterly, 28(1), 43-75.

Parsons, T (1967). Some ingredients of a general theory of organizations. In A. W. Halpin (Ed.) Administrative theory in education. NY: Macmillan.

Parsons, T Bales, R. F. Shils, E. A. (1953). Working papers in the theory of action. New York: Free Press.

Patterson, J. L. (1993). Core organizational values, employee survey, leadership for tomorrow's schools. Alexandra, VA: ASCD.

Patterson, J. L. (1993). Leadership for tomorrow's schools. Alexandra, VA: ASCD.

Peabody, R. L. (1962). Perceptions of organizational authority: A comparative analysis. Administrative Science Quarterly,6(4), 466-467.

Peter, P. J., (1979). Reliability: A review of psychometric basics and recent marketing practices. Journal of Marketing Research, 16 (2), 6-17.

Peterson, K. (1984). Mechanisms of administrative control over managers in educational organizations. Administrative Science Quarterly, 29(4), 244-245.

Ploghoft, M. & Perkins, C. (1988). Instructional leadership: Is the principal prepared?. NASSP Bulletin, 72(510), 45-48.

Poda, J. H. (1993). The teacher in-residence program. Educational Leadership, 50(6), 52-53.

Ponder, D. G., Ogawa, R. T., & Adams, E. A. (1996). Leadership as an organizational-wide phenomenon: Its impact on school performance. Educational Administration Quarterly, 31, 564-588.

Poplin, M. 5. (1992). The leader's new role: Looking to the growth of teachers. Educational Leadership, 45(5), 10-11.

Porter, A. W. (1986). School climate and teachers' perceptions of principals' use of power strategies. Dissertation Abstracts International, 41, 3629-A.

Porter, A. W. & Lemon, D. K. (1988). How teachers perceive a principals power. Principal, 1, 30-32.

Prentice-Hall Staff (l978). Handbook of Educational Leadership. Englewood Cliffs, New Jersey.

Purkey, S. C. & Smith, M. S. (1983). Effective schools: A review. The Elementary School Journal, 83, 427-452.

Queen, J A. (1989). What does it take to be an effective principal? Principal, 69(3), 34-35.

Quick, T. L. (1980). The Quick motivation method. New York: St. Martin's Press.

Rallies, S. F. & High smith, M. C. (1986). The myth of the great principal. Phi Delta Kappa, 69(3), 34-35.

Ratcliff, J. L., Getting the facts, analyzing the data, building the case for institutional distinctiveness. New Directions for Community Colleges. 17(1), 45-57.

Redefer, L. (1963). The morale of teachers: Memo's. National Education Association, 63(18), 59-63.

Reinke, M. E. (1989). Faculty spiritual growth program and faculty moral: Three case studies. Dissertation Abstracts International, 50, 2462-A.

Rempel, A., & Bentley, R. (1964). The measurement of teacher morale: A factor analysis approach. Educational and Psychological Measurement, 24, 631-636.

Rice, E. K. (1989). The changing principal ship: A principal's perception. Principal, 3(1), 21-22.

Rice, R. W. & Chambers, M. M. (1975). Personality and situational determinants of leader behavior. Journal of Applied Psychology, 60, 143-145.

Richardson, R. C. & Blacker, C. E. (1963). Note on the application of factor analysis to the study of faculty morale. Journal of Educational Psychology, 54, 208-212.

Rodent, R. P. (1983). A comparison of the extent and nature of the leadership behavior changes between first year principals and experienced principals. Akron, OH: University Press

Rosesner, C. A. & Slogan, C. A. (1987). Do you see yourself as your subordinates see you? NAACP Bulletin, 71(502), 68-71.

Rowan, B. & Den, C. (1984). Management succession, school socioeconomic context and basic skills attainment. American Educational Research Journal, 21(3), 26-27.

Rumble, R. J. (1970). Applied factor analysis. Evenston, IL: Northwestern University Press.

Schein, E. H. & Ott, J. S.(1962). The legitimacy of organizational influence. The American Journal of Sociology, 67(5), 684-685.

Schein, E. H. & Lippitt, G. L. (1966). Supervisory attitudes toward the legitimacy of influencing subordinates. The Journal of Applied Behavioral Science, 2(5), 207-208.

Schein, E. H. (1978). Career dynamics: Matching individual and organizational needs. Reading, Mass: Addison-Wesley.

Schein, E. H. (1985). Organizational cultures and leadership: A dynamic view. San Francisco: Jossey-Bass.

Schein, E. H. (1990). Organizational Culture. American Psychologist, 45(2), 109-119.

Schein, E. H. (1992). Organizational culture and leadership. San Francisco: Jossey-Bass.

Scrupski, A. F.(1970). Administrative support for teachers and teacher legitimacy of administrative authority: A test of an exchange theory of the social system of a school. Dissertation Abstracts International. 32, 711-A.

Scrupski, A. F. & Shimahara, N. (1975). Social forces and schooling: An anthropological and sociological perspective. New York: D. McKay.

Seymor, D. (1990). Perceptions of leadership styles of principals in the Archdiocese of Detroit. Dissertation Abstracts International, 51, 2596-A.

Sergiovanni, T. J. (1987). The principalship: A reflective practice perspective. Newton, MA: Allyn & Bacon

Sergiovanni, T. J. (1991). Value-added leadership: How to get extraordinary performance in school. New York: Harcourt Brace.

Sergiovanni, T. J. (1992). Substitutes for leadership. Moral leadership: Getting to the heart of School Improvement. San Francisco: Jossey-Bass.

Shartle C. L. (1957). Introduction. In R. M. Stogdill and A. E. Coons (Eds.) Leader behavior: Its description and measurement. Columbus, OH: Bureau of Business Research.

Shrewsberry, S. (1990). The relationship between leadership styles of high school principals and school climate as perceived by teachers. Dissertation Abstracts International, 50, 2713-A.

Simon, H. A. (1976). Administrative behavior. (3rd ed.) New York: The Free Press.

Simon, H. A. (1992). Book review. In Oliver E. Williamsons' (Ed.) Organizational theory: From Chester Barnard to the present and beyond. Journal of Economic Literature, 30(3), 1503-1505.

Smedley, S. R. & Willower, D. J.. (1981). Principals' pupil control behavior and school robustness. Educational Administration Quarterly, 17(4), 40-56.

Smith, J. F. (1987). Principal/teacher interactions as key to understanding principal influence. Dissertation Abstracts International, 48, 1615-A.

Smith, W. F. & Andrews R. L. (1989). Instructional leadership: How principals make a difference. Alexandria, VA: ASCD.

Smylie, M.A. & Brownlee-Conyers, J. (1992). Teacher leaders and their principals: exploring the development of new working relationships. Educational Administrative Quarterly, 28(2),150-184.

Snyder, K. J., & Anderson, R. H. (1987). What principals can learn from corporate management. Principal, 67(3), 22-26.

Solman, R. & Feld, M. (1989). Occupational stress and perceptions of teachers in Catholic schools. Journal of Educational Administration, 27(3), 55-68.

Sontegerath, M. (1992). Viewpoint on leadership. Momentum, 4, 22-23.

Steinberg, L. (1996). Beyond the classroom: Why school reform has failed and what parents need to do. New York: Simon and Schuster.

Steller, A. (1995). Leadership and followership. Education Update, 37(2), 1-2.

Stillwell, L. L. (1969). Individualized in-service education. Today's Education, 35, 44-45.

Stipek, D. & Weisz, J. (1991). Perceived personal control and academic advancement. Review of Educational Research, 51(5). 4-5.

Stockard, J. & Mayberry, N. (1985). Learning environments: A review of the literature on school environments and students achievement. Eugene OR.: Center for Educational Policy and Management, University of Oregon.

Stogdill, R. M. (1965). Managers, employees, organizations. Columbus, OH: Bureau of Business Research.

Stogdill, R. M. & Coons, A. E. (Eds.) (1957). Leader behavior: Its description and measurement. Columbus, OH: Bureau of Business Research.

Stogdill, R. M., Goode, O. S. & Day, D. R. (1962). New leader behavioral description subscale. Journal of Psychology, 54, 259-269.

Stogdill, R. M. Goode, O. S. & Day, D. R. (1963). The leader behavior of United States senators. Journal of Psychology, 56, 3-8.

Stogdill, R. M. Goode, O. S. & Day, D. R. (1963). The leader behavior of corporate presidents. Personnel Psychology, 16, 127-132.

Stronge, J. H. (1990). Managing for productive schools: The principal's role in contemporary education. NASSP Bulletin, 74(524),1-5.

Sweetland, R. C. & Keyser, D. J. (1991). TEST, A comprehensive reference for assessments in psychology, education, and business. (3rd Ed.) Austin: Texas, Pro-ed.

Sweeny, J. (1982). Research synthesis on effective school leadership. Educational Leadership, 39(9), 346-352.

Sykes, G. (1990). Organizational policy into practice: reactions to the cases. Educational Evaluation and Policy Analysis, 12(3), 243-247.

Sylwester, R. (1995), A celebration of neurons, an educators guide to the human brain. Alexandra VA. ASCD.

Tagiuri, R. & Litwin, G. H. (1968). Organizational Climate. Boston: The Harvard Graduate School of Business Administration.

Taylor, H. A. (1963). Women in administration. American School and University, 12, 21-23.

Tarter, C. J., Bliss, J. R. & Hoy, W. K. (1989). School characteristics and faculty trust in secondary schools. Educational Administrative Quarterly, 25(3), 294-308.

Tarter, C. J. & Hoy, W. K. (1988). The context of trust: Teachers and principals. The High School Journal, 72(1), 17-24.

Thomas, W. C. (1987). A faculty based needs assessment process for school administrators. NASSP Bulletin, 71,(524), 5-10.

Thompson, J. E. & Lacerenza, B. (1985). Providing leadership education for the future: a curriculum model. NASSP Bulletin, 69(483), 21-28.

Trafford, L. (1989). Images of leadership. Momentum, 4, 6-10.

Troisi, N. F. & Kidd, D. J. (1990). Achieving success in administration learning from experience. NASSP Bulletin, 74(524), 42-46.

Underhill, E. K. (1992). Implementation of the consultant teacher model in high school: The role of principal leadership and school climate. Dissertation Abstracts International, 53, 3077-A

United States National Commission on Excellence in Education (1983) A nation at risk: The imperative for educational reform: A report to the nation and the Secretary of Education. Washington, DC: National Center for Educational Statistics.

Van Maanen, J. & Schein, e. H. (l979). Toward a theory of organizational socialization. Research in Organizational Behavior, 1, 209-264.

Victor, B. & Cullen, J. (1987) A theory and measure of ethical climate in organizations. In W. C. Fredrick (Ed.) Research in corporate social performance and policy. (pp. 51-71). Greenwich, CT: JAI Press.

Vroom, V. H. (1964). Work and motivation. New York: John Wiley & Sons.

Vroom, V. H. (1973). Leadership and decision-making. Pittsburgh, PA: University Press.

Walberg, H. J., Ellett, C. D. (1987). School effects on the perception of principal effectiveness. In J. J. Lang & H. J. Walberg (Eds) Effective school leadership. Berkley: McCutchen.

Washington, B. G. (1991). Administrator's behavior in motivating teachers through teacher empowerment in the Caddo Parish school system. Dissertation Abstracts International, 52, 325A

Ward, C. A. (1982). A comparison between the acceptance of authority by secondary teachers in a state where contracts are not negotiated. Dissertation Abstracts International, 43, 622A

Warren, D. I. (1968). Power, visibility, and conformity in formal organizations. American Sociological Review, 33(12), 953-954.

Wasley, P. A. (1991). Who leads: The rhetoric of reform and the realities of practice. New York: Teachers College Press, Columbia University.

Wasley, P. A. (1992). When leaders leave. Educational Leadership, 50, 65-66.

Wasserman, D. (1965). Man of La Mancha. Revised edition. Greenwich, CT: Cherry Lane Music Company.

Weber, M. (1947). The theory of social and economic organizations. New York: Oxford University Press.

Weber, M. (1968). On charisma and institution building. Chicago: The University Press.

Weber, M. (1971). Inner children can be taught to read: Four successful schools. Washington, D. C.: Council for Basic Education.

Wellish, J. B. (1978). School management and organization in successful schools. Sociology of Education, 51, 211-226.

Wendel, F. C. (1977). Attitudes of principals towards participatory managerial practices. The Clearing House, 50(7), 322-326.

Wilkes, S. T., & Blackbourn, J. M. (1981). The design of an instrument to measure the zones of indifference of teachers to directives issued by administrators. Starksville: Mississippi State University, Educational Bureau of Educational Research and Evaluation.

Wilkes, S. T., & Blackbourn, J. M. (1988 November). The revalidation of an instrument to measure the zones of indifference of teachers to directives issued by administrators. Paper presented at the Mid-South Educational Research Association Annual Conference, Louisville, KY.

Willis, S. (1991). Supervising empowered teachers. ASCD Update, 33(4), 1-2.

Willower, D. J. & Licata, J. W. (1975). Environmental robustness and school structure. Planning & Change, 6(4), 120-127.

Wilson, A. G. (1995). Simplicity, complexity, and generality: Dreams of a final theory in locational analysis. In Cliff, A. D., Gould, P. R., Hoare, A. G. & Thrift, N. J. (Eds.) Diffusing geography, essays for Peter Haggett. pp. 342-355. Cambridge: Blackwell.

Wilson, M. (1993). The search for teacher leaders. Educational Leadership, 50(6), 24-25.

Wimpelberg, R., Teddlie, C., & Stingfield, S. (1989). "Sensitivity to contest: The past and future of effective schools research". Educational Administrative Quarterly, 29(4), 82-107.

Wojciehowski, T. T. & Burton, L. F. (1985). The special teacher as consultant, who, me? Washington, D. C. National Institute of Education.

Wolcott, H. (1973). Man in the principal's office. New York: Holt, Rinehart, and Winston.

Woodruff, J. B. (1983). The relationship of teachers' perceptions of the degree of bureaucratization and professionalization and their compliance with administration directives. Dissertation Abstracts International, 45, 721-A

Young, J. M. & Heichberger, R. L. (1975). Teachers' perceptions of an effective school supervision and evaluation program. Education.

Zinser, M. E. (1967). Teacher morale and size school. Tempe, AZ: Arizona State University.

APPENDIX A

APPENDIX A
Organizational Health Inventory

Repainted by Permission
Hoy and Feldman, 1985

The following are statements about your school. Please indicate the extent to which each statement characterizes your school by marking the appropriate response, **on the scan sheet.**
Rarely Occurs(**RO**) Sometimes Occurs(**SO**) Often Occurs(**O**)
Very Frequently Occurs(**VF**)

1. Teachers are protected from unreasonable community and parental demands.	RO	SO	O	VF
2. The principal gets what he or she ask for from superiors.	RO	SO	O	VF
3. The principal is friendly and approachable.	RO	SO	O	VF
4. The principal asks that faculty members follow standard rules and regulations.	RO	SO	O	VF
5. Extra materials are available if requested.	RO	SO	O	VF
6. Teachers do favors for each other	RO	SO	O	VF
7. The students in this school can achieve the goals that have set for them.	RO	SO	O	VF
8. The school is vulnerable to outside pressure.	RO	SO	O	VF
9. The principal is able to influence the actions of his or her superiors.	RO	SO	O	VF
10 The principal treats all faculty members as his or her equal.	RO	SO	O	VF
11 The principal makes his or her attitudes clear to the school.	RO	SO	O	VF
12 Teachers are provided with adequate materials for their classroom.	RO	SO	O	VF
13 Teachers in this school like each other.	RO	SO	O	VF
14 The school sets high standards for academic performance.	RO	SO	O	VF
15 Community demands accepted even when they're not consistent with the educational program.	RO	SO	O	VF
16 The principal is able to work well with the superintendent.	RO	SO	O	VF
17 The principal puts suggestions made by the faculty into operation.	RO	SO	O	VF
18 The principal lets faculty know what is expected of them.	RO	SO	O	VF
19 Teachers receive necessary classroom supplies	RO	SO	O	VF

APPENDIX A (cont.)

20	Teachers are indifferent to each other.	RO	SO	O	VF
21	Students respect others who get good grades.	RO	SO	O	VF
22	Teachers feel pressure from the community.	RO	SO	O	VF
23	The principal's recommendations are given serious considerations by his or her superiors	RO	SO	O	VF
24	The principal is willing to make changes.	RO	SO	O	VF
25	The principal maintains definite standards of performance.	RO	SO	O	VF
26	Supplementary materials are available for classroom use.	RO	SO	O	VF
27	Teachers exhibit friendliness to each.	RO	SO	O	VF
28	Students seek extra work so they can get good grades.	RO	SO	O	VF
29	Select citizen groups are influential with the board.	RO	SO	O	VF
30	The principal is impeded by the superiors.	RO	SO	O	VF
31	The principal looks out for the personal welfare of faculty members.	RO	SO	O	VF
32	The principal schedules the work to be done.	RO	SO	O	VF
33	Teachers have access to needed materials.	RO	SO	O	VF
34	Teachers in this school are cool and aloof to each other.	RO	SO	O	VF
35	Teachers in school believe that their students have the ability to achieve academically.	RO	SO	O	VF
36	The school is open to the whims of the public.	RO	SO	O	VF
37	Teacher moral is high.	RO	SO	O	VF
38	Academic achievement is recognized and acknowledged by the school.	RO	SO	O	VF
39	A few vocal parents can change school policy.	RO	SO	O	VF
40	There is a feeling of trust and confidence among the staff.	RO	SO	O	VF
41	Students try hard to improve on previous work.	RO	SO	O	VF
42	Teachers accomplish their jobs with enthusiasm.	RO	SO	O	VF
43	The learning environment is orderly and serious.	RO	SO	O	VF
44	Teachers identify with the school.	RO	SO	O	VF
45	The principal explores all side of a topic and admits that other options exist.	RO	SO	O	VF

APPENDIX A (cont.)

46	The principal discusses classroom issues with teachers.	RO	SO	O	VF
47	The principal accepts questions without appearing to snub or quash the teacher.	RO	SO	O	VF
48	Students neglect to complete homework.	RO	SO	O	VF
49	Students are cooperative during classroom instruction.	RO	SO	O	VF
50	The principal goes out of his or her way to show appreciation to teachers.	RO	SO	O	VF
51	The principal conducts meaningful evaluations.	RO	SO	O	VF
52	Teachers express pride in their schools.	RO	SO	O	VF
53	Teachers show commitment to their students.	RO	SO	O	VF

APPENDIX B

APPENDIX B
Robustness Semantic Differential

By Willower and Licata 1978
Reprinted With Permission

For each pair of adjectives used to describe your school mark in one of the seven circles, **on the scan sheet**, that is nearest to describing your feeling about your school **environment**, **vision**, and **accomplishments**.

My school ENVIRONMENT is:

	Very	Quite	Slightly	Undecided	Slightly	Quite	Very	
Boring	A	B	C	D	E	A	B	Interesting
Fresh	A	B	C	D	E	A	B	Stale
Meaningless	A	B	C	D	E	A	B	Meaningful
Important	A	B	C	D	E	A	B	Unimportant
Unusual	A	B	C	D	E	A	B	Usual
Weak	A	B	C	D	E	A	B	Powerful
Active	A	B	C	D	E	A	B	Passive
Quieting	A	B	C	D	E	A	B	Thrilling
Action-Packed	A	B	C	D	E	A	B	Uneventful
Dull	A	B	C	D	E	A	B	Challenging

My school VISION is:

	Very	Quite	Slightly	Undecided	Slightly	Quite	Very	
Boring	A	B	C	D	E	A	B	Interesting
Fresh	A	B	C	D	E	A	B	Stale
Meaningless	A	B	C	D	E	A	B	Meaningful
Important	A	B	C	D	E	A	B	Unimportant
Unusual	A	B	C	D	E	A	B	Usual
Weak	A	B	C	D	E	A	B	Powerful
Active	A	B	C	D	E	A	B	Passive
Quieting	A	B	C	D	E	A	B	Thrilling
Action-Packed	A	B	C	D	E	A	B	Uneventful
Dull	A	B	C	D	E	A	B	Challenging

My school ACCOMPLISHMENTS are:

	Very	Quite	Slightly	Undecided	Slightly	Quite	Very	
Boring	A	B	C	D	E	A	B	Interesting
Fresh	A	B	C	D	E	A	B	Stale
Meaningless	A	B	C	D	E	A	B	Meaningful
Important	A	B	C	D	E	A	B	Unimportant
Unusual	A	B	C	D	E	A	B	Usual
Weak	A	B	C	D	E	A	B	Powerful
Active	A	B	C	D	E	A	B	Passive
Quieting	A	B	C	D	E	A	B	Thrilling
Action-Packed	A	B	C	D	E	A	B	Uneventful
Dull	A	B	C	D	E	A	B	Challenging

APPENDIX C

APPENDIX C

Demographic Principal Questionnaire

Please answer the following questions by circling the appropriate range/type for age, degree level, gender, administrative experience in current school, race, and total administrative experience, and location of school.

Age	**Degree Level**	**Gender**	**Years of Experience in Current School**	
20-30	Bachelor's	Female	0	16-25
31-40	Master's	Male	1-5	26+
41-50	Doctor's		6-15	
50+	Specialist			

Race	**Total Years of Administrative Experience**
African-American	0
Asian	1-5
Caucasian	6-15
Hispanic	16-25
Native American	26+
Other	

School Site ADA

School: Metropolitan or
Metropolitan Non-Metropolitan

APPENDIX D

APPENDIX D

DEMOGRAPHIC TEACHER QUESTIONNAIRE

Please answer the following questions by circling the appropriate range/type for age, degree level, gender, teaching experience in current school, race, and total teaching experience, and location of school.

Age	**Degree Level**	**Gender**	**Years of Experience in Current School**	
20-30	Bachelor's	Female	0	16-25
31-40	Master's	Male	1-5	26+
41-50	Doctor's		6-15	
50+	Specialist			

Race	**Total Years of teaching Experience**
African-American	0
Asian	1-5
Caucasian	6-15
Hispanic	16-25
Native American	26+
Other	

School: Metropolitan or
Metropolitan Non-Metropolitan

APPENDIX E

Dimensions of Organizational Health

Institutional Level

1. Institutional Integrity: describes a school that has integrity in its education program. The school is not vulnerable to narrow, vested interests from community and parental demands. The school is able to cope successfully with destructive, outside forces (instrumental need).
   Sample Items:
   a. Teachers are protected from unreasonable community and parental demands.
   b. The school is vulnerable to outside pressures.
   c. Select citizen groups are influential with the board.

Managerial Level

2. Principal Influence: refers to the principal's ability to affect the action of superiors. The influential principal is persuasive, works effectively with the superintendent, but simultaneously demonstrates independence in thought and action (instrumental need).
   Sample Items:
   a. The principal gets what he/she asks for from superiors.
   b. The principal is able to work well with the superintendent.
   c. The principal is impeded by superiors.
3. Consideration: refers to behavior by the principal that is friendly, supportive, open, and collegial (expressive need).
   Sample Items:
   a. The principal is friendly and approachable.
   b. The principal puts suggestions made by the faculty into operation.
   c. The principal looks out for the personal welfare of faculty members.
4. Initiating Structure: refers to behavior by the principal that is task and achievement oriented. The principal makes his/her attitudes and expectations clear to the faculty and maintains definite standards of performance (instrumental need).
   Sample Items:
   a. The principal lets faculty members know what is expexted of them. The principal maintains definite standards of performance.
   b. The principal schedules the work to be done.
5. Resource Support: refers to a school where adequate classroom supplies and instructional materials are available, and extra materials are easily obtained (instrumental need).

Sample Items:

a. Extra materials are available if requested.
b. Teachers are provided with adequate materials for their classrooms.
c. Teachers have access to needed instructional materials.

Technical Level

6. Morale: refers to a sense of trust, confidence, enthusiasm, and friendliness that is exhibited among teachers. Teachers feel good about each other and, at the same time feel a sense of accomplishment about their jobs (expressive need).
   Sample Items:
   a. Teachers in this school like each other.
   b. Teachers accomplish their jobs with enthusiasm.
   c. The morale of teachers is high.
7. Academic Emphasis: refers to the school's press for achievement. High but achievable academic goals are set for students; the learning environment is orderly and serious; teachers believe in their students' ability to achieve; and students work hard and respect those who do well academically (instrumental need).
   Sample Items:
   a. The school sets high standards for academic performance.
   b. Students' respect others who get good grades.
   c. Students try hard to improve on previous work.
   (Hoy & Miskel, 1991)

APPENDIX F

Dr. Wayne Hoy
Academic Faculty
Educational Administration
Ohio State University
Columbus, Ohio

March 15, 1995

Dear Dr. Hoy,

I am a graduate student at Oklahoma State University, currently working on an Ed.D. in educational administration. My advisor is Dr. Joseph Licata. I am working in the area of leadership, climate, and compliance. I would like your permission to use the OCDQ-RS instrument in my research. Further, if you have a current copy of the instrument and a manual would you advise me on how to obtain them. Your time and assistance will be greatly appreciated.

Sincerely,

Jerry Harper

Jerry Harper
107 East Mohawk
Stillwater, Oklahoma 74075

3/23/95

Jerry -

you have my permission to use the OCDQ-RS in your research. Also take a look at the OHI; it seems to work a little better for high schools. all the information on both instruments is found in my book — Open Schools / Healthy Schools.

See enclosure.

Wayne

P.S. Give my best to Joe

Go Cowboys!

APPENDIX G

OKLAHOMA STATE UNIVERSITY
INSTITUTIONAL REVIEW BOARD
HUMAN SUBJECTS REVIEW

Date: 01-03-96 **IRB#:** ED-96-058

Proposal Title: EXPLORING THE RELATIONSHIP OF ORGANIZATIONAL HEALTH AND ROBUSTNESS ON STUDENT ACHIEVEMENT AND ATTENDANCE

Principal Investigator(s): Joseph Licata, Gerald W. Harper

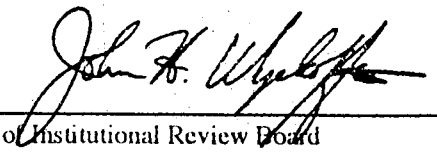
Reviewed and Processed as: Exempt

Approval Status Recommended by Reviewer(s): Approved

ALL APPROVALS MAY BE SUBJECT TO REVIEW BY FULL INSTITUTIONAL REVIEW BOARD AT NEXT MEETING.
APPROVAL STATUS PERIOD VALID FOR ONE CALENDAR YEAR AFTER WHICH A CONTINUATION OR RENEWAL REQUEST IS REQUIRED TO BE SUBMITTED FOR BOARD APPROVAL.
ANY MODIFICATIONS TO APPROVED PROJECT MUST ALSO BE SUBMITTED FOR APPROVAL.

Comments, Modifications/Conditions for Approval or Reasons for Deferral or Disapproval are as follows:

Provisions received and approved.

Signature:  Date: February 5, 1996

Chair of Institutional Review Board

2

VITA

Gerald Harper

Candidate for the Degree of

Doctor of Education

Thesis: EXPLORING THE RELATIONSHIP OF ORGANIZATIONAL HEALTH AND ROBUSTNESS ON STUDENT ACHIEVEMENT AND ATTENDANCE

Major Field: Educational Administration

Biographical:

Personal Data: Born in Tulsa, Oklahoma, the son of Mr. and Mrs. E. L. Harper.

Education: Graduated from McLain High School, Tulsa, Oklahoma,1965; attended Graceland College, 1965-1966; attended Oklahoma State University, 1970-1975; received a Bachelor of Arts in Education in 1973 from Oklahoma State University; received a Master of Science in Geography from Oklahoma State University in 1975; completed requirements for Doctor of Education degree at Oklahoma State University in, December 1997.

Professional Experience: Junior and Senior High School teacher, Perkins, Oklahoma, 1979-1981; Junior High School teacher, Perry, Oklahoma, 1981-1986; Junior High School teacher, Stillwater, Oklahoma, 1986-1990; Interviewer Oklahoma Department of Employment and Securities, 1990; Junior and Senior High School teacher, Shidler, Oklahoma 1990-1992; Middle School teacher, Jenks, Oklahoma, 1992-1997