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measurement of selected variables of teacher-
principal social interaction and educational
environment.

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PRINCIPALS, TEACHERS, AND ELEMENTARY YOUTH:
MEASUREMENT OF SELECTED VARIABLES OF
TEACHER-PRINCIPAL SOCIAL INTERACTION
AND EDUCATIONAL ENVIRONMENT

A Dissertation Presented

By

Alexander Bruce McKay

Submitted to the Graduate School
of the
University of Massachusetts

in partial fulfillment of the requirements
for the degree of

DOCTOR OF EDUCATION

May 1971

Major Subject: Administration

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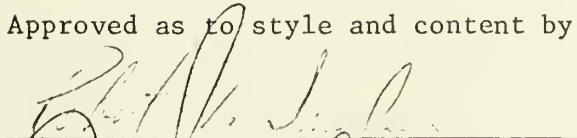
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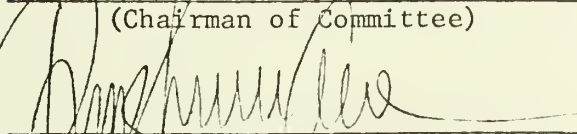
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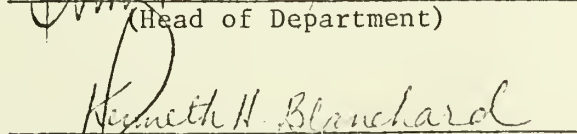
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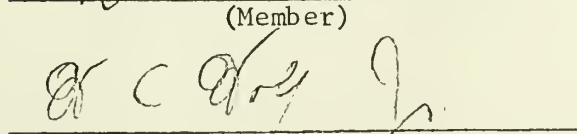
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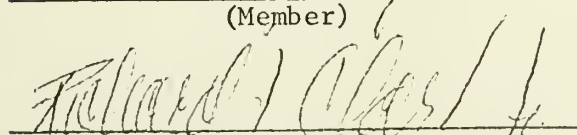
(Head of Department)



Kenneth H. Blanchard
(Member)



(Member)



(Member)

May 1971

This dissertation is dedicated
to my wife and family.

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ABSTRACT OF THE DISSERTATION

Principals, Teachers, and Elementary Youth:
Measurement of Selected Variables of
Teacher-Principal Social Interaction
and Educational Environment
(May 1971)

By

Alexander Bruce McKay

B.S. Pennsylvania State University

MSST American University

Ed.D. University of Massachusetts

Directed by: Dr. Robert L. Sinclair

The central purpose of this study was to examine selected features of principal and teacher behavior in relation to the educational environment of elementary schools. Subtests of Halpin's Organizational Climate Description Questionnaire were used to obtain teacher perceptions on the four principal variables named Aloofness, Production Emphasis, Thrust, and Consideration and the four teacher variables of Disengagement, Hindrance, Esprit and Intimacy. Collective perceptions of fifth and sixth grade students were obtained on Sinclair and Sadker's Elementary School Environment Survey for the educational environment variables of Alienation, Humanism, Autonomy, Morale, Opportunism and Resources. Usable responses were obtained from 4,105 fifth and sixth grade students and 627 teachers in thirty-six Massachusetts and Pennsylvania elementary schools.

The following priority hypotheses were generated for the study

through a comprehensive review of existing research and the results of a pilot investigation:

1. There will be a significant negative relationship between the Aloofness of the principal and Alienation in the educational environment.
2. There will be a significant positive relationship between the Thrust of the principal and Morale in the educational environment.
3. There will be a significant positive relationship between the Disengagement of the teachers and Alienation in the educational environment.
4. There will be a significant positive relationship between the Hindrance of the teachers and Alienation in the educational environment.
5. There will be a significant negative relationship between the Disengagement of the teachers and Morale in the educational environment.

The overall relationship between the behaviors of the school principal, his teachers, and the educational environment of sampled schools was tested by means of canonical correlation, with these findings:

1. The set of teacher variables was significantly related ($p < .01$) to the set of educational environment variables.
2. The set of principal variables was significantly related ($p < .05$) to the set of teacher variables.
3. The set of principal variables was significantly related ($p < .10$) to the set of educational environment variables.

Bivariate relationships between teacher-principal variables, educational environment variables, and demographic data variables were tested by the computation of Pearson product-moment correlations. Priority Hypotheses 2-5 attained statistical significance. Major findings of the bivariate

analysis are summarized as follows.

1. The principal behaviors of Thrust ($p < .01$) and Consideration ($p < .05$) were related to Alienation (-), Humanism (+), and Morale (+) in the educational environment.
2. The teacher behaviors of Disengagement and Hindrance were significantly related ($p < .01$) to the educational environment variables of Alienation (+), Humanism (-), and Morale (-).
3. The teacher behavior of Esprit was significantly related ($p < .01$) to Alienation (-), Humanism (+), Morale (+), and Resources (+) in the educational environment.
4. The age of the principal and the number of years he has been in education were significantly related ($p < .05$) to Alienation (-), Humanism (+), Autonomy (-), and Morale [(+) $p < .10$] in the educational environment.
5. The size of the school enrollment was significantly related ($p < .10$) to Morale (-) in the educational environment.

Another feature of the present investigation was the advancement of an ideal educational environment. After suggesting a desirable range of scores for each environmental variable, two of the sampled schools were discovered to possess the necessary ideal environment characteristics.

The results of this study, then, support the contention that the behavior of teachers and principals is significantly related to selected components of the educational environment. Research of a more experimental nature was recommended as a follow-up to the present investigation. Such experimental study might begin with the findings of the present inquiry, and should examine causal inferences for those relationships found to be significant in the present study.

It was further noted that the subtests of the Organizational Climate Description Questionnaire provided a useful framework for the study of teacher-principal interaction, and that further use of the OCDQ

should continue to be limited to the subtests. Additional research was recommended, giving special attention to improvement of environmental measures at both the secondary and elementary school levels. Also, the research framework used in this study provides an important perspective for educators in assessing environmental conditions throughout educational change efforts in schools.

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C H A P T E R I

THE PROBLEM

Introduction

It has been generally agreed that the school principal is one of the key agents in promoting or retarding educational change (Gross and Herriott, 1965; Goodlad, 1968; Lieberman, 1969; Spain, 1956). As the leader of the school, the principal usually has major control over factors including the selection of staff, allocation of teaching responsibilities and the format of the school schedule. An important figure in the alignment of educational priorities, he is instrumental in the implementation of innovative programs at the school. Also, he acts as a controlling force in the extent to which parental and other pressures are brought to bear on teachers. Thus, the principal is seen as one of the most influential forces in determining the extent to which the school is a vibrant or a sterile institution.

One of the most important tasks facing educators is how to create stimulating learning environments for children. Silberman (1970, p. 341) suggests that we need climates "where student responsibility is emphasized, where conformity is not imposed, where learners solve problems important to them, where interest is high, and where there is an active commitment to discovery and learning." The behavior of the school principal seems crucial in shaping such desirable conditions for learning, but more research is needed concerning the specific nature of

his influence on the educational environment. The intent of the present study is to investigate this relationship in selected elementary schools.

Purpose of the Study

The purpose of this study is to examine teacher-principal social interaction in relation to the educational environment in selected elementary schools. The investigator will describe the teacher-principal social interaction and the existing educational environment in the sampled schools; relationships will then be sought among selected components of teacher-principal social interaction and features of the educational environment. Also, the investigator will describe an ideal type of educational environment, and suggest the necessary teacher-principal interaction profile conducive to its development. Finally, implications will be drawn for consideration in further research concerning the influence of the principal-staff interaction on the development of educational environments.

Teacher-principal social interaction. Insofar as this study is concerned, the teacher-principal social interaction refers to the "social component" of organizational climate described by Halpin and Croft (1963). In examining the social interactions that occur between the teachers and the principal, the authors included measures of the leader's behavior as well as measures of the group's behavior.

Eight components are included in studying teacher-principal social interaction. These comprise the eight subtests of Halpin's Organizational Climate Description Questionnaire (OCDQ), completed by the

teachers in each participating school. The four subtests which describe selected features of teacher behavior are named disengagement, hindrance, esprit, and intimacy. The subtests referring to the principal's behavior are aloofness, production emphasis, thrust, and consideration. A complete description of these factors is included in Appendix A.

Educational environment. As conceptualized by Sinclair and used in this study, the educational environment of the elementary school refers to "the conditions, forces, and external stimuli which foster the development of individual characteristics. The environment is recognized as a complex system of situational determinants that exert an influence upon participating individuals. . . . This conceptualization of environment is based upon the assumption that behavior is a function of the transactional relationship between the individual and his environment." (1968, p. 3).

Using the preceding rationale, Sinclair developed the Elementary School Environment Survey (ESES). The ESES elicits the responses of fifth and sixth grade students to eighty true/false items representing the variables of practicality, propriety, community, awareness, and scholarship. A revised form of the Elementary School Environment Survey has recently been completed. Using data from fifty-four Massachusetts elementary schools, Sadker (1971) recently employed factor analysis procedures to generate six factor clusters. The six new environmental factors have been named alienation, humanism, autonomy, morale, opportunism, and resources. Appendix B contains a complete description of these variables.

In summary, the eight subtests of the Organizational Climate Description Questionnaire will be used to assess the teacher-principal social interaction in selected elementary schools. Furthermore, the educational environment in each school will be measured along the six dimensions included in the most recent revision of the Elementary School Environment Survey. The investigator will then examine features of the reported educational environment in relation to the components of teacher-principal interaction. An ideal educational environment will be described, and the necessary teacher-principal interaction profile conducive to its development will be outlined. Finally, hypotheses and implications will be presented for examination in further research.

Significance of the Study

There is considerable evidence to indicate that the behavior of the school principal has an effect on certain staff conditions, such as teacher morale and professionalism (Lieberman, 1969; Chesler, 1963; Reynolds, 1965; Gross and Herriott, 1965). Some (Gross and Herriott, 1965, p. 57) even suggest that teachers' professional performance and morale may serve as links between leadership practices of the principal and the academic performance of pupils. Lieberman (1969, p. 18) adds, "Principals and teachers are dependent on each other for the satisfaction of needs whether they be providing materials for the teacher, satisfactory working conditions, or shared decision-making. The orientation that principals take toward their staff will affect not only the way teachers feel toward the principal and the staff, but also the way they feel toward teaching as a job."

Studies of organizational effectiveness (Katz and Kahn, 1966; Likert, 1961) have demonstrated that high-producing managers, much more often than low-producing managers, have operations characterized by favorable, cooperative attitudes and high levels of job satisfaction on the part of the members of the organization. As Likert (1961, p. 60) generalizes:

The supervisors and managers in American industry and government who are achieving the highest productivity, lowest costs, least turnover, and absence, and the highest levels of employee motivation and satisfaction display, on the average, a different pattern of leadership from those managers who are achieving less impressive results.

Despite these considerations, there has been very little research regarding the relationship of the principal's behavior to the educational environment. In part, the significance of the present study is that further information will be provided about the specific nature of this relationship.

Another important feature of the present study is the manner in which organizational effectiveness is determined. Although it may be necessary for educators to appraise the "output" of the schooling process by gathering achievement test data, grades, reading level scores and college board results, it is becoming quite apparent that other factors may be equally relevant. Modern industrial theorists feel that it is unrealistic to be concerned only with output in assessing organizational effectiveness. Likert (1961, p. 61) suggests that measures of effectiveness must examine another set of variables, called "intervening variables," that reflect the current condition of the internal state of the organization--its loyalty, skills, motivations, and capacity for effective

interaction, communication, and decision-making. Etzioni (1960, p. 257) stresses the need for a "balanced distribution of resources among the various organizational needs, not maximal satisfaction of any one activity, even of goal activities." In addition, Herzberg (1966) contends that it is not enough to foster desirable "hygiene factors" of the work environment such as status, security, salaries, working conditions and interpersonal relationships. These factors produce no growth in worker output capacity; they only prevent losses in worker performance due to work restriction. More study is needed regarding the application of these notions of industrial management to the operation of educational organizations. An additional significance of the present study is the identification and measurement of relevant intervening variables in the elementary school organization.

The study takes on additional importance as the practice of selection and assignment of school principals is considered. More adequate selection criteria are needed than those in present use. Mere attention to successful teaching experience, seniority, or possession of advanced degrees is not sufficient. We cannot assume that principals will behave the same in different job situations. However, it may be useful to examine an individual's past leader behavior in relation to the unique environmental conditions that he confronted. The findings of this study will suggest additional considerations, namely, that schools are likely to exhibit certain environmental features depending upon the behavioral characteristics of the assigned principal.

Further, this investigation is important because a framework is advanced that will enable the principal and his staff to study the

effects of their behavior on the educational environment. The investigator will propose an ideal educational environment and suggest the teacher and principal behavior needed to foster the development of this environment. Information regarding these relationships could be used to design strategies for change and school improvement.

Of particular significance is the attempt to formulate hypotheses for further research. Different educational environments affect children in different ways, and to ignore variance in school environments is to limit understanding of behavioral differences in students. Also, different principal behavior affects the school in different ways. To increase our understanding of how the principal's behavior affects the educational environment, it is necessary to identify specific relationships that are significant.

Review of the Literature

The approach of this section provides a review of some major work concerning the relation between leader behavior and organizational effectiveness. First, efforts of management theorists will be examined; second, recent attempts to develop theory in educational administration will be reviewed; finally, pertinent research will be cited regarding the transactional relationship between the school principal, teachers, pupils, and educational effectiveness.

Management and Organizational Behavior. Likert (1961) has conducted extensive studies of the complex problems of administration. Generally, his approach has been to identify principles of leadership and management which result in the best job performance. Comparisons

were made between the kinds of leadership and related variables employed in the best organizations in contrast to those used by the poorest. Several criteria were used to evaluate administrative effectiveness, including productivity, job satisfaction, turnover and absenteeism, costs, scrap loss, and employee and managerial motivation. Generally, his findings were that "supervisors whose units have a relatively poor production record tend to concentrate on keeping their subordinates busily engaged in going through a specified work cycle in a prescribed way and at a satisfactory rate as determined by time standards." (1961, p. 6). On the other hand, "Supervisors with the best records of performance focus their primary attention on the human aspects of their subordinates' problems and on endeavoring to build effective work groups with high performance goals." (1961, p. 7). After extensive study verifying these findings in divergent organizational settings, Likert depicted four management styles of organization: the "exploitive-authoritative," the "benevolent authoritative," the "consultative," and the "participative-group." As organizations proceed from the exploitive-authoritative system to the participative-group system, the compatibility of the people functioning within the organization and the formal structure of the organization increases. The theory hypothesizes this additional compatibility in turn increases productivity and enlargens the opportunity for individuals within the organization to meet social and psychological needs.

In reporting on a study conducted by Pelz, Likert adds a very important condition to the conclusion by some that freedom in doing

one's work leads to high performance. The caveat (1961, p. 24) is that "freedom will lead to high performance only when there is a great deal of interaction between the individual, his colleagues, and his superior." A study of life insurance agencies (Likert and Willits, 1940) yielded evidence indicating that agents under a commission form of compensation and left entirely to themselves with complete freedom tended to be poor salesmen. "Evidently, if freedom is to contribute to high performance, the individual must be a part of an active social system where there is frequent contact and interaction. This interaction motivates the individual. He knows and accepts what is expected of him and often takes a major role in setting the goals himself. When the individual has the required skills and the high performance goals and motivation arising from interaction between the individual, his peers, and his superiors, freedom appears to result in improved performance." (1961, pp. 24-25).

Another view is presented by Argyris (1957) in his description of the basic incongruences between the needs of a mature personality and the requirements of a formal organization. Healthy human beings are postulated to develop in ways which are contrary to the expectations of most work environments. Argyris built a new organizational model by suggesting two types of "social organisms" existing on either end of a multi-dimensional continuum. At one end of the continuum is placed the ideal case of the formal organization; on the other end is the ideal case of the individual-need-centered group, where self actualization is fostered through effective work group relationships. The function of leadership is defined (p. 192) as "helping the individual to obtain

self-actualization and the organization to fulfill its objectives." Like many other authors, Argyris notes that leaders must possess effective diagnostic and analytic skills in addition to ability in fostering human relationships, decision-making and communication. The effort of moving an organization from the more formal type to the more individual-needs type is fraught with problems. For example, if the employees have learned to become dependent and submissive, the transition to a different leadership pattern will result in a decrease in production as well as an increase in open dislike for the leader. Also, the individual-needs-centered leadership assumes the persons are highly motivated, desirous of full self-actualization, and willing to be responsible for their own behavior. As Argyris (p. 202) puts it: "An increasing number of employees are not actively seeking greater job satisfaction; do not need to belong to cohesive work groups; do not need to identify with the larger organization; and do not need psychological rewards."

These difficulties are understood more clearly when placed in the perspective of Maslow's (1954) hierarchy of needs. It is argued that the behavior of an individual in any given situation is determined by his strongest need. Further, these human needs can generally be ordered so that satisfaction of any particular need is prerequisite to the satisfaction of other higher level needs. Human needs are arranged as follows: first level needs are physiological, and refer to the basic requirements for sustenance of life, such as shelter, food and clothing. Until these needs are satisfied, no other need-disposition occurs. Next,

security or safety needs emerge, including the need to be free of physical danger. Maslow suggests that this level refers to a search for orderliness, for routine, rhythm and stability. If both the physiological and the safety needs are fairly well gratified, belongingness and love needs will emerge. The individual will hunger for affectionate relations with people in general, for a place in his group, and feel keenly the absence of friends, or a sweetheart, or a wife or children. The highest levels are the need for esteem and the press for self-actualization. With regard to esteem, when an individual begins to satisfy his need to belong, he has a desire for a stable, firmly based, usually high self-evaluation, for self-respect or self esteem, and for the esteem of others. Maslow suggests that two classifications are necessary in describing the esteem needs: first, the desire for strength, for achievement, for adequacy, for mastery and competence, for confidence in the face of the world, and for independence and freedom; second, the desire for reputation or prestige, status dominance, recognition, attention, importance or appreciation. Self-actualization refers to the maximization of one's potential, to become what one is capable of becoming. Not every well understood, the specific form that this need takes varies greatly from person to person, but the clear emergence of these needs once again rests upon satisfaction of the prior needs.

Herzberg (1966) has provided another useful viewpoint of human motivation in the organizational context. After interviewing two hundred engineers and accountants representing a cross section of Pittsburgh

industry, Herzberg evolved the motivation-hygiene theory. The study was designed to test the notion that man has two sets of needs: his need as an animal to avoid pain and his need as a human to grow psychologically. In the interviews, respondents were questioned about the kinds of things on their job that made them unhappy or dissatisfied, and what things made them happy or satisfied. Herzberg concluded from the analysis that these two categories of needs were indeed independent of each other, and affected behavior in different ways. The first category concerned the hygiene factors of the work environment, and included such things as company policies and administration, supervision, working conditions, interpersonal relationships, security, and salary. These factors were found to contribute the most to job dissatisfaction. On the other hand, motivators in the environment seemed to be capable of having a positive effect on job satisfaction often resulted in an increase in productivity. These factors included achievement, recognition, responsibility, opportunity for advancement and possibility of growth, and the work itself. Seen from the viewpoint of productivity in an organization, it is not enough to satisfy the hygiene factors of work environment; people need opportunities to develop responsibility, to grow, to advance, to be recognized for a job well done, and to be proud of their work.

Implicit in this discussion is the point that managers must understand the needs and motivations of their employees. In the course of describing the components of organizational effectiveness, the administrator must attempt to determine the underlying reasons for humans behaving the way they do. In this effort, it is important for managers,

administrators, school principals, leaders at all levels, to apply the notions of Maslow, Argyris, Likert, and others to the process of examining effectiveness of organizational activity.

Now let us turn to the specific topic of educational administration and examine the role of the school principal in the context of emerging theory.

Theory and Research in Educational Administration. One of the difficulties that has confronted the development of theory in educational administration has been the lack of common understanding of the meaning of theory. Some writers refer not to how administrators do behave, but to how they ought to behave. Others confuse development of taxonomies with development of theory. Still others struggle to identify the domains of theory in educational administration. At the very least, educators are beginning to recognize the need for theory-building.

Griffiths (1959, p. 14) approaches this issue by discussing what theory is not, arguing first that theory is not a personal affair. That is, each administrator develops his unique approaches to everyday problems, exhibits a personal style in his confrontation of those problems, and operates with his own opinions of what will be effective in the situational contexts of everyday work. Griffiths contends that these behaviors do not constitute the development of a theory. Second, theory is not a dream. It is in error to refer to bull sessions, fancy-filled discussions, and brain-storming as "theoretical," although it is popular in some quarters to do so. Next, according to Griffiths, theory is not a philosophy. Even though we seem to need guidance toward the development of principled action, such activity is not to be construed as theory.

Theory implies empirical verification. Proposition of fact can be verified, while propositions of value cannot be verified empirically.

Finally, theory is not a taxonomy, for taxonomy does not allow one to develop testable hypotheses--which are the foundation of theory.

As to what theory is, Griffiths and Halpin agree with the definition provided by Feigl (1951, p. 182):

In order to provide for a terminology which will not constantly involve us in a tangle of confusions, I propose to define a "theory" as a set of assumptions from which can be derived by purely logico-mathematical procedures a larger set of empirical laws. The theory thereby furnishes an explanation of these empirical laws and unifies the originally relatively heterogeneous areas of subject matter characterized by those empirical laws. Even though it must be admitted that there is no sharp line of demarcation (except a purely arbitrary one) between theoretical assumptions and empirical laws, the distinction, at least in the sense of a gradation, is illuminating from a methodological point of view.

One more terminological suggestion may help: Let us speak of scientific explanation wherever more specific or more descriptive statements are derived from more general or more hypothetical assumptions.

Owens (1970, p. 43) describes theory more succinctly in the following way:

A theory is the systematic relating of a set of general hypotheses or assumptions; the hypotheses on which a theory is based must be so well verified as to have gained rather general acceptance as being true. The assumptions should thus reflect actual human experience or observation.

Getzels (1958, p. 157) suggests referring to the school institution as a social system, involving two special classes of phenomena. He asserts that the social behavior of inhabitants of the social system can be understood as a function of either "nomothetic" or "idiographic" elements. The nomothetic dimension refers to those institutional roles and expectations that will fulfill the goals of the system, while the

idiographic dimension refers to the individual, personality, and need-dispositions of persons in the institution. The behavior of individuals in the institution is construed as belonging in part to each of these dimensions.

A useful framework for those conducting research on administrative behavior was developed by Halpin (1966, pp. 22-77). A condensed version of his approach is presented in Figure 1.

Change criteria of the organization's achievement are measured with respect to the purpose of the organization; hence an arrow points from Panel IV to Panel I. The essential problem is to predict events in Panel IV-B on the basis of variables identified in Panel II. The focus of research is upon the administrator, and since the purpose is to predict changes in organization achievement from his behavior, the arrow from Panel II points to Panel IV. Panel III variables are studied so as to increase the accuracy of the predictions made from the variables in Panel II. As Halpin (p. 65) says:

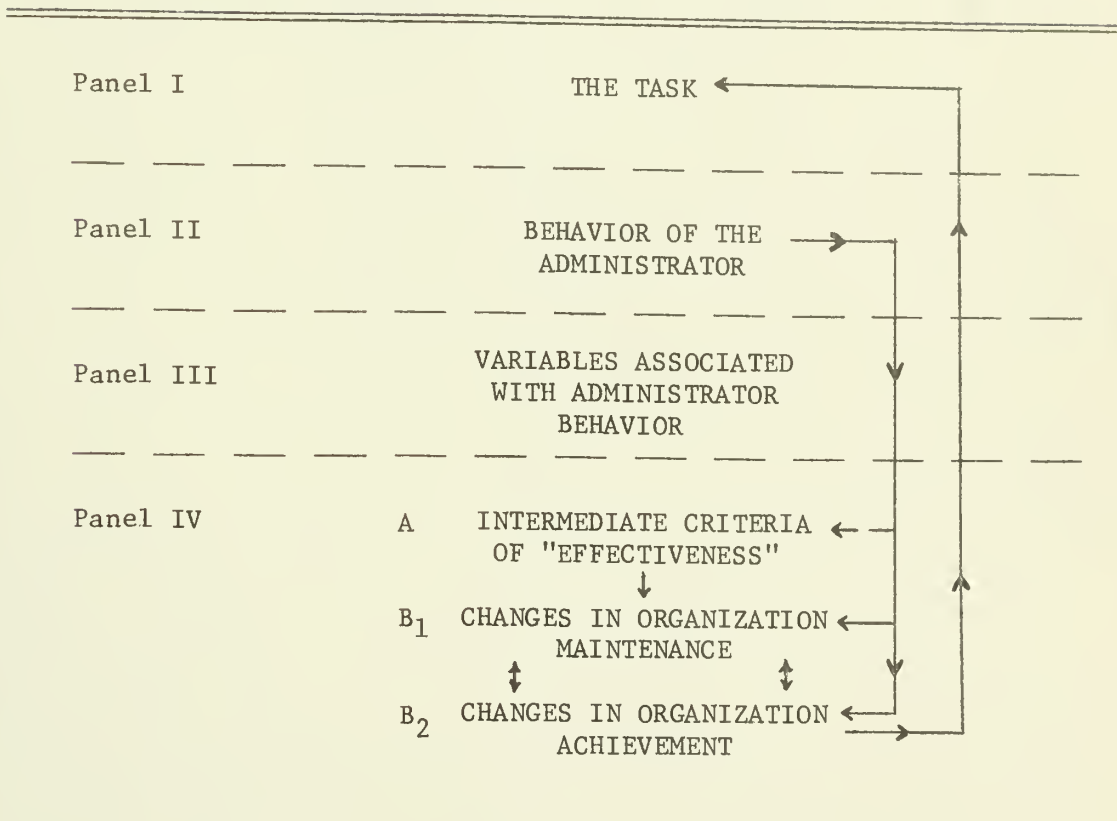
In short, we are interested not in just any variable associated with the administrator's behavior, but only in those variables in Panel III associated with aspects of the administrator's behavior that are, in turn, significantly related to the criteria in Panel IV. This means that the selection of Panel III variables by "shot-gun" methods is out of order. Instead, one must start first by identifying those leader behavior variables (Panel II) that are related to changes in the organization's achievement. Then we must select for study only those variables in Panel III that are pertinent to the leader behavior variables which have been identified.

Let us now examine the features of research specific to the behavior of the elementary school principal.

The Principal, his Staff, and Educational Effectiveness. That the principal is an important factor in determining the success of a

Figure 1

Paradigm for Research on Administrator Behavior



school program has been readily agreed. Spain, Drummond, and Goodlad (1956, pp. 69-70) put it this way:

The elementary school principal holds a key position in the improvement of the professional staff. He is the acknowledged and appointed status leader. Whether he wants to or not, he will discover that among his most important functions are those related to "teaching teachers." Whether the school becomes a challenging educational enterprise or a dull and dreary place for children depends not so much upon what is there at the outset of his effort as upon the quality of leadership he provides for his staff.

It is a common belief that the principal is a crucial agent in school improvement. The League of Cooperating Schools, a consortium of eighteen California schools participating in a joined planned change effort with UCLA and I/D/E/A, is explicit in this assumption. In a recent monograph (I/D/E/A, 1968) describing some of the findings of League efforts, Goodlad noted that the principal is in a leadership role where he can release the human potential of the school. Articles in the monograph attempted to bring together key ideas to aid other principals in facilitating change. In one article, educational change was placed within the context of systems models. Another examined the principal's role and the conflicts he faces. In other sections, determinants of leadership behavior were discussed and the dynamics of group interaction were explored. In short, the League has assumed throughout that the principal is a key agent in change.

In a recently completed study investigating issues and problems facing the elementary principal, Goldhammer (1970) held that "the principal of the specific school is undoubtedly in the key position to guide the processes of change and the implementation of overall goals and strategies which ultimately influence the success or failure of an

educational program." For all the rhetoric, however, there has been precious little energy devoted to describing either the parameters of the principal's behavior or the effects of his specific activity on educational effectiveness. The 1969 edition of the Encyclopedia of Educational Research reports (1969, p. 431) that only a few studies exist regarding the dynamics of the principal's role in elementary schools. Also, "a number of studies have been done which are concerned with the interactions which occur between principals and their staff . . . Still, the evidence is not very extensive and the interpretations from it are necessarily limited."

Perhaps the most extensive study dealing with the leadership of the elementary principal was conducted by Gross and Herriott. Regarding the crucial role of the elementary principal, they report (1965, p. 1):

Of all the administrative officials in the complex bureaucracy that manages public school systems in the United States, few have at their command greater potentialities for influencing directly the type and quality of education young pupils are to receive than has the elementary school principal. He is the school executive in the closest contact with the central functions of the school: teaching and learning. His position of formal leadership provides him with the opportunity to motivate his staff and to improve its standards and performance in teaching. He can offer them valuable advice in their efforts to deal with classroom problems. He can make their meetings an important and stimulating educational experience. He can maximize the different skills of his teachers and help them grow in their competencies. The elementary school principal, in short, enjoys substantial opportunities to provide a high order of staff leadership.

In their study, findings were reported concerning one particular aspect of the behavior of elementary school principal, "their efforts to conform to a definition of their role that stresses an obligation to improve the performance of their teachers." (p. vii). Conduct of this

type was designated (p. vii) Executive Professional Leadership "since it refers to the attempts of an executive (the principal) to influence the behavior of subordinates with a claim to professional status (teachers)." Higher EPL scores were found to be significantly related to higher staff morale, to more professional teacher behavior, and to pupil success in reading. It was argued that the behavior of the principal can and does have an effect on the operation of the school; and also (p. 57) that "the findings . . . reveal that both teacher's professional performance and morale may serve as links in a causal chain between the EPL of principals and the performance of their pupils."

Perhaps the most recent research in this area was conducted by Lieberman at UCLA. In developing the rationale for her study, she (1969, pp. 1-2) reported, "one difficulty is that there is no evidence of just what it is that principals do that has differential effects on teachers." By adapting Gordon's (1963) teacher leadership dimensions of task, authority, and expressiveness to the leadership behavior of the principal, Lieberman (pp. 25-26) studied three distinct phenomena:

1. The relationship between the task, authority and expressive dimensions of the principal.
2. The relationship between dimensions of principal leadership and teacher morale and professionalism.
3. The relationship between principal leadership and teacher leadership style in the classroom.

Principals and teachers from thirty-one schools were included in the sample. Teachers answered a questionnaire on principal leadership and teacher morale and professionalism. Pupils from all fifth and sixth grade classes responded to questionnaires on teacher style in the

classroom. Significant findings were reported with respect to the first two sets of hypotheses concerning the relationships between the task, authority, and expressive dimensions of the principal and the relation of these leadership factors with teacher morale and professionalism. For example, it is reported (p. 78) that "the task orientation of the principal is highly related to teacher professionalism . . . (principals) . . . in order to effect high professionalism among teachers must strive toward high task orientation, middle to low authority and middle to high expressive orientation." Another not too surprising finding was that professionalism is accompanied by greater autonomy and power to make decisions. The third set of hypotheses are of special importance to the present study because the transactional relationship between principal leadership and teacher leadership style in the classroom is examined. In this portion of the study, simple correlational procedures did not reveal any strong relationships of teacher dimensions of task, authority, and expressiveness with the same principal dimensions.

This section has briefly reviewed the literature and research pertinent to the current investigation of the relation between the behavior of the school principal and educational environment. Some of the efforts of industrial and management theorists have been examined as they pertain to leadership and organizational effectiveness; the need for further development and refinement of theory in educational administration was explored; finally, efforts to study the transactional relationship of the behavior of the school principal, his staff, pupils, and educational effectiveness were described. In the next chapter, hypotheses

for the present investigation will be formulated in part by citing specific findings from these and other related studies.

CHAPTER II

THEORETICAL APPROACH

The major purpose of this chapter is to generate hypotheses for the present study. Initially, a theoretical base will be developed to examine specific features of the educational environment and selected components of teacher-principal interaction. Hypothesized relationships will then be formulated in two ways. First, a set of initial hypotheses will be formulated by identifying gaps in existing research and citing current findings that bear on the present study. A second set of initial hypotheses will be framed after an examination of pilot study data from eight elementary schools. Both sets of initial hypotheses will be used to determine priority hypotheses for the present study. The preceding approach is taken so that hypotheses for the present study will be given quantitative strength.

Theoretical Base

In the present study our main interest is the transactional relationship between school principal, his teachers, and the pupils. A useful model of this triadic relationship is provided by Tharpe and Metzger (1969) as they discuss the consultative triad, a special instance of behavior modification theory. The triad is shown in Figure 2.

The consultant position in this model is described as anyone who has knowledge, the mediator role as anyone with the reinforcers, and the target as anyone with the problem. For the present study, this unique

transactional relationship may be depicted as shown in Figure 3. Relating this model to the current study, the principal (consultant), through his efforts with teachers (mediator), has effect on the educational environment for pupils (targets). Gross and Herriott explored this triadic relationship as they attempted to establish theoretical links in the process by which the Executive Professional Leadership (EPL) of the principal leads to the performance of pupils in his school. Partial correlation techniques were used to remove the linear effects of teacher morale, teacher professional performance and family income from the relationship between the leadership of the principal and pupil academic performance. Though the resulting partial correlation between the principal's EPL and pupil academic performance was only .05, it was suggested (1965, p. 57) that a causal chain may exist between the EPL of principals and the performance of pupils.

Figure 2

The Consultative Triad

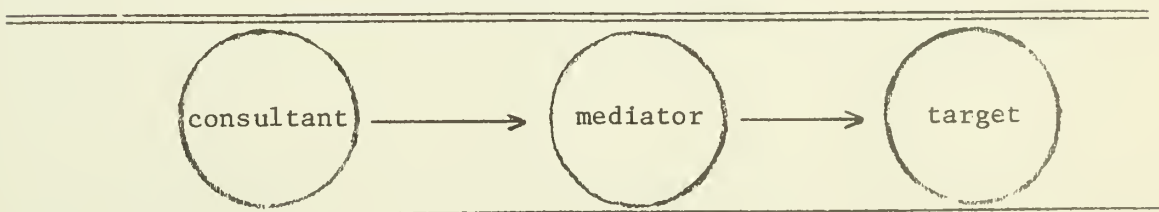
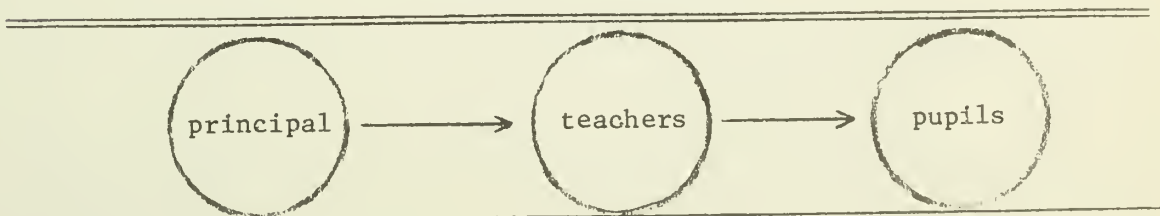


Figure 3

Transactional Triad



Educational Environment. Although educators have for some time been interested in building constructive learning situations, it is only in the past decade or so that significant efforts have been made to identify and measure specific variables in the educational environment. The bulk of this work has been stimulated by Stern and Pace (1958) in their systematic attempt to characterize college environments. Using the collective perceptions of students, the College Characteristics Index (CCI) was constructed to measure the environmental press of colleges. In subsequent work, adaptations of this instrument were developed to measure the environments of both the high school (High School Characteristics Index - HSCI) and the elementary school (Elementary School Characteristics Index - ESCI). In a further analysis, Pace revised the CCI, selecting items which measured most sharply the differences among fifty colleges comprising a normative sample. A new instrument was developed that used about half of the CCI items. The College and University Environment Scales (CUES) was used to obtain ratings in five areas: scholarship, awareness, propriety, community, and practicality. Pace's work was extended significantly as Sinclair (1968) adapted CUES to measure the elementary school environment along the same variables.

Teacher-principal social interaction. As indicated in Chapter I, teacher-principal social interaction refers to the social component of organizational climate, as measured by the Organizational Climate Description Questionnaire. The following four categories of group interaction were considered by Halpin and Croft (1963, p. 16).

1. Interactions determined primarily by the leader's behavior.
2. Behavior attributable to characteristics of the group qua group.
3. Interactions determined by procedures or by actions of an executive in a position hierarchically superior to the leader himself.
4. Interactions determined primarily by the behavior of individuals qua individuals, and hence associated directly with the "personality" assets and liabilities of the individual.

An additional basis used to classify group interaction was the relationship between the social needs of the individual and the social control imposed upon him as a member of a group. As Halpin (1963, p. 17) states, "we knew that. . . we would have to take into account the balance maintained between the satisfaction of individual social needs and the organization's requirements for social control."

By administering the sixty-four item OCDQ to teachers in an elementary school, scores are obtained for each of eight variables. Organizational climate scores are then derived for each school by comparing the obtained subtest scores with a national sample of seventy-one schools. In the current investigation, use of the OCDQ is limited to the procurement of subtest scores.

Perceptions and Beta Press. As indicated by Murray in 1938, the environment can be seen as providing a stimulus to which individuals both attend and react. This stimulus situation is described as a "potency" or press, and provides an individual with a perception of the complexities of environment. The same environment can be perceived differently by individuals with different needs. Thus, a person's behavior is determined by the dynamic interaction between his unique needs and the environmental press.

Murray (p. 122) provides two classifications of press, Alpha press and Beta press.

In identifying press we have found it convenient to distinguish between 1) the Alpha press, which is the press that actually exists, as far as scientific inquiry can determine it; and 2) the Beta press, which is the subject's own interpretation of the phenomena that he perceives.

The present investigation uses the concept of Beta press. It was felt that individuals behave in part as a result of their perceptions and that a crucial assessment of the educational environment and teacher-principal interaction would be provided by those students and teachers who participate within the elementary school.

Theoretical Formulation of Initial Hypotheses

Initial hypotheses will be suggested by exploring two major domains:

1. Relationships between components of the principal's behavior and features of the educational environment.
2. Relationships between components of the teacher's behavior and features of the educational environment.

It was necessary to obtain as concise information as possible regarding these relationships. Thus, current research was reviewed by using descriptions of each of the climate and environment variables presented in Appendices A and B, as well as selective reference to the specific items included within each variable. Even though widespread use has been made of the OCDQ, two major problems were faced. First, the large bulk of the studies have viewed the climate scores as paramount in importance, and consequently reports of subtest findings are scarce. Second, few

studies are concerned with the transactional relationship relating principal and teacher behavior to educational environment concerns of pupils. In addition, since the present study is the first to use the current version of the ESES, research utilizing other environmental variables will be selected on a basis of psychological comparability rather than empirical commonality.

At the 1970 meeting of the American Educational Research Association, Hodgkinson reported the findings of a study which attempted to measure the relationship between the dimensions of organizational climate and the values of elementary school staff members. Several significant correlations were reported between the eight OCDQ subtest scores and twelve values scores obtained by administering Scott's (1965) Values Scales. An examination of the descriptions and questionnaire items for each of Scott's variables revealed similarity of three ESES factors and three values factors. Shown with the ESES variables in parentheses, these possible commonalities were: Kindness [Alienation (-)], Loyalty (Morale) and Independence (Autonomy). Ten significant relationships were found between these three variables and specific OCDQ subtest variables. These relationships are illustrated in Table 1, excerpted from Hodgkinson's paper (p. 5).

Additional support for the statement of initial hypotheses in the current investigation is derived by an examination of the findings of recent work by Owens and Steinhoff (1960); their study investigated the relationship between the Organizational Climate Index (OCI) and subtests of the Organizational Climate Description Questionnaire (OCDQ).

Table 1

Significant Correlations: Hodgkinson Study

	<u>Kindness</u>	<u>Loyalty</u>	<u>Independence</u>
Intimacy	***		
Disengagement	<u>**</u>	<u>**</u>	**
Esprit	***	***	<u>***</u>
Hindrance			
Thrust	***	***	<u>**</u>
Consideration	***	***	
Aloofness	*		
Production Emphasis		***	

*p<.05
 **p<.01
 ***p<.001

Negative correlations underlined

Table 2

Significant Correlations: Owens-Steinhoff Study

	<u>Supportiveness</u>
Intimacy	
Disengagement	<u>**</u>
Esprit	**
Hindrance	<u>*</u>
Thrust	**
Consideration	**
Aloofness	
Production Emphasis	

*p<.05
 **p<.01

Negative correlations underlined

Relationships were measured by computing product moment correlations between the eight OCDQ variables and eight OCI scores. After reviewing the variable descriptions and items, the only OCI variable judged to be similar to any ESES factor was Supportiveness (ESES Alienation). The five significant relationships regarding this variable are depicted in Table 2.

Hoy and Appleberry (1969) have investigated teacher-principal relationships in schools characterized as humanistic or custodial. A humanistic school was described as a place where students learn through cooperative interaction; where self-discipline is substituted for teacher control, where teachers promote flexibility in status and rules, sensitivity to others, open communication, and self-determination. It was not possible to liken this broad description to any isolated ESES variable, even though a number of significant relationships were found in correlative comparisons with the OCDQ subtests.

Another interesting set of findings is reported by Lieberman (1969) as she related teacher style in the classroom to the leadership mode of the principal. Principal leadership was measured by asking teachers to respond to a questionnaire utilizing Gordon's task, authority, and expressive dimensions. Pupils responded to questionnaire items concerning similar components of teacher leadership style. In this portion of the study, the only relationship discovered to be significant was that of a weak positive relationship between principal authority and teacher authority in the classroom. In terms of the present study, a possible parallel relationship to the authority dimension may exist between the principal behavior of Aloofness and the ESES

environmental variable of Autonomy, scored negatively. In terms of the present study, a possible inference is that a negative relationship exists between the Aloofness of the principal and Autonomy in the educational environment. Others (Lutjemeier, 1969; Guy, 1970; Hale, 1966) have attempted to relate variables of pupil behavior to features of the organizational climate. These efforts have met with limited success and as suggested by Lutjemeier (p. 2,295), "the social structures of these classrooms were apparently the products of some other factor or factors."

The following set of hypotheses has been formulated by examining the preceding research for plausible relationships between variables of teacher-principal behavior and features of the educational environment. Sources used in constructing each hypotheses are cited in parentheses following each statement.

1. Relationships between components of the principal's behavior and features of the educational environment.

- H(t)₁: There will be a significant negative relationship between the Thrust of the principal and Alienation in the educational environment. (Owens/Steinhoff)
- H(t)₂: There will be a significant negative relationship between the Aloofness of the principal and Humanism in the educational environment. (Hoy and Appleberry)
- H(t)₃: There will be a significant positive relationship between the Thrust of the principal and Humanism in the educational environment. (Hoy and Appleberry)
- H(t)₄: There will be a significant negative relationship between the Consideration of the principal and Alienation in the educational environment. (Hodgkinson, Owens/Steinhoff)
- H(t)₅: There will be a significant positive relationship between the Thrust of the principal and Alienation in the educational environment. (Hodgkinson)

- H(t)₆: There will be a significant positive relationship between the Production Emphasis of the principal and Morale in the educational environment. (Hodgkinson)
- H(t)₇: There will be a significant negative relationship between the Thrust of the principal and Autonomy in the educational environment. (Hodgkinson)
- H(t)₈: There will be a significant negative relationship between Aloofness of the principal and Alienation in the educational environment. (Hodgkinson)
- H(t)₉: There will be a significant positive relationship between the Consideration of the principal and Morale in the educational environment. (Hodgkinson)
- H(t)₁₀: There will be a significant positive relationship between the Thrust of the principal and Morale in the educational environment. (Hodgkinson)
- H(t)₁₁: There will be a significant negative relationship between the Aloofness of the principal and Autonomy in the educational environment. (Lieberman)

2. Relationships between components of the teacher's behavior and features of the educational environment.

- H(t)₁₂: There will be a significant negative relationship between the Esprit of the teachers and Alienation in the educational environment. (Owens/Steinhoff)
- H(t)₁₃: There will be a significant negative relationship between the Disengagement of the teachers and Humanism in the educational environment. (Hoy and Appleberry)
- H(t)₁₄: There will be a significant positive relationship between the Esprit of the teachers and Humanism in the educational environment. (Hoy and Appleberry)
- H(t)₁₅: There will be a significant negative relationship between the Intimacy of the teachers and Alienation in the educational environment. (Hodgkinson)
- H(t)₁₆: There will be a significant positive relationship between the Disengagement of the teachers and Autonomy in the educational environment. (Hodgkinson)
- H(t)₁₇: There will be a significant negative relationship between the Esprit of the teachers and Autonomy in the educational environment. (Hodgkinson)

- H(t)₁₈: There will be a significant positive relationship between the Disengagement of the teachers and Alienation in the educational environment. (Owens/Steinhoff, Hodgkinson)
- H(t)₁₉: There will be a significant positive relationship between the Hindrance of the teachers and Alienation in the educational environment. (Owens/Steinhoff)
- H(t)₂₀: There will be a significant positive relationship between the Esprit of the teachers and Morale in the educational environment. (Hodgkinson)
- H(t)₂₁: There will be a significant negative relationship between the Disengagement of the teachers and Morale in the educational environment. (Hodgkinson)

Pilot Study Formulation of Initial Hypotheses

In this section a second set of initial hypotheses will be formulated by examination of data available from eight public elementary schools in a New Hampshire school system. Extensive on-site study by teams of observers determined that the schools were different in many significant ways and provided a reasonably heterogeneous sample for pilot study purposes. Both the Organizational Climate Description Questionnaire, Form IV, and the Elementary School Environment Survey, Form I, were administered to appropriate faculty and student groups of each school in the Winter of 1970. OCDQ subtest scores were obtained for each school. Using Halpin's format, the subtest scores were compared to a national sample and were reported as standard scores with a mean of fifty and a standard deviation of ten. Thus, for each school in the pilot sample, a score was available for each of the eight teacher and principal variables.

Available ESES data included item analysis and environmental

press scores for each school. Since Sadker's recent factor analysis of ESES reassigned specific questionnaire items to different environmental variables, it was necessary to regroup items into the new factors of alienation, humanism, autonomy, morale, opportunism, and resources. The ultimate intent of this regrouping was to establish for each school a percentage score for each of the new ESES factors. Three problems were faced in this attempt. First, although the percentage of true and false responses was provided for each school on each item of the ESES (Form I), there was no way to compare these percentages to a normative sample. The ESES has yet to be subjected to such a norming procedure. Second, six items included by Sadker in the ESES (Form II) are slightly different in format from those originally developed by Sinclair. Such differences apparently are intended to change the scoring direction for the item. For example, item 31 on the ESES (Form I-B) reads:

Most students are interested in such things as poetry, music, or painting. (Scored true)

This statement was changed in Sadker's revision to read:

Most students are not interested in such things as poetry, music, or painting. (Scored false) (ESES, Form II, item 8)

Although such a change seems minor, recent research (Keochakian, 1970) has raised doubts as to the validity of the procedure. A third problem was that the ESES (Form II) contains eight totally new items, thus pilot data is incomplete in this respect. Despite these problems, it was felt that the available ESES (Form I) data would be useful for exploratory purposes of the pilot study.

Questionnaire items were grouped according to the new factors, and percentage responses in the keyed direction were used to determine for each school a mean percentage score on each factor. This information is provided in Appendix C.

Relationships between OCDQ Subtests and ESES Variables. Mean scores for pilot schools on the OCDQ subtests and ESES variables are provided in Table 3. Relationships between OCDQ and ESES variables were explored by obtaining Pearson product-moment, Spearman rho, and Kendall tau correlation coefficients. The Nonparametric Statistical System (NPAR) computer program, available through the Computer Institute for Social Science Research, was used to obtain each correlation and its respective probability level for a one-tailed test.

Initial hypotheses were generated by examining the correlation matrices displayed in Appendix D since the essential purpose of the pilot study was to outline plausible relationships, a liberal approach to statistical significance was used to construct the present set of initial hypotheses. Each correlation matrix described above was examined for possible relationships between educational environment variables and teacher-principal behavior. Any correlation whose probability level was less than ten percent on at least one test was considered to be indicative of a plausible relationship. The following initial hypotheses were formulated in this manner.

1. Relationships between components of the principal's behavior and features of the educational environment.

$H(p)_1$: There will be a significant positive relationship between the Consideration of the principal and Resources in the educational environment.

Table 3

Pilot Study
Mean Variable Scores: ESES and OCDQ

	School							
	1	2	3	4	5	6	7	8
Alienation	47.3	47.1	50.2	32.5	43.6	35.4	45.4	45.4
Humanism	49.0	54.2	46.8	68.9	65.6	50.8	61.6	57.4
Autonomy	55.4	48.7	47.5	58.3	48.6	38.7	45.5	45.0
Morale	42.5	39.6	50.5	54.5	61.2	54.5	47.8	47.9
Opportunism	24.0	38.3	38.5	39.5	42.1	36.6	32.4	30.6
Resources	58.2	70.0	67.8	74.5	56.0	60.5	73.1	57.4
Disengagement	57.0	51.0	45.0	48.0	44.0	44.0	49.0	54.0
Hindrance	52.0	50.0	59.0	48.0	62.0	50.0	49.0	50.0
Esprit	51.0	50.0	51.0	50.0	53.0	49.0	58.0	47.0
Intimacy	57.0	49.0	50.0	48.0	57.0	49.0	52.0	51.0
Aloofness	50.0	56.0	51.0	56.0	48.0	56.0	56.0	49.0
Production Emphasis	49.0	50.0	42.0	47.0	46.0	45.0	48.0	53.0
Thrust	41.0	49.0	41.0	48.0	31.0	45.0	57.0	38.0
Consideration	47.0	55.0	42.0	51.0	38.0	47.0	62.0	43.0

- H(p)₂: There will be a significant positive relationship between the Thrust of the principal and Resources in the educational environment.
- H(p)₃: There will be a significant positive relationship between the Aloofness of the principal and Resources in the educational environment.
- H(p)₄: There will be a significant negative relationship between the Production Emphasis of the principal and Opportunism in the educational environment.
- H(p)₅: There will be a significant negative relationship between the Consideration of the principal and Morale in the educational environment.
- H(p)₆: There will be a significant negative relationship between the Production Emphasis of the principal and Morale in the educational environment.
- H(p)₇: There will be a significant negative relationship between the Aloofness of the principal and Alienation in the educational environment.
- H(p)₈: There will be a significant positive relationship between the Thrust of the principal and Morale in the educational environment.
2. Relationships between components of the teacher's behavior and features of the educational environment.
- H(p)₉: There will be a significant negative relationship between the Intimacy of the teachers and Resources in the educational environment.
- H(p)₁₀: There will be a significant negative relationship between the Disengagement of the teachers and Opportunism in the educational environment.
- H(p)₁₁: There will be a significant positive relationship between the Hindrance of the teachers and Morale in the educational environment.
- H(p)₁₂: There will be a significant negative relationship between the Disengagement of the teachers and Morale in the educational environment.
- H(p)₁₃: There will be a significant positive relationship between the Hindrance of the teachers and Alienation in the educational environment.

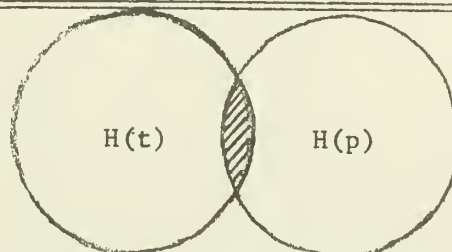
- $H(p)_{14}$: There will be a significant negative relationship between the Hindrance of the teachers and Resources in the educational environment.
- $H(p)_{15}$: There will be a significant negative relationship between the Hindrance of the teachers and Humanism in the educational environment.
- $H(p)_{16}$: There will be a significant positive relationship between the Disengagement of the teachers and Alienation in the educational environment.

Selection and Statement of Hypotheses for the Present Study

The purpose of this section is to select and state hypotheses for the present study. Two sets of initial hypotheses have been generated. First, existing research was examined for plausible relationships; then, results of a pilot study were analyzed. Two sets of hypotheses were formulated, and were designated $H(t)_{1-21}$ and $H(p)_{1-16}$. Figure 4 represents the procedure to be used to select priority hypotheses for the present study.

Figure 4

Selection of Hypotheses



$H(t)$: Initial hypotheses developed through theoretical base.

$H(p)$: Initial hypotheses developed through pilot study.

$\text{Hatched Circle} - H(t) \cap H(p)$: priority hypotheses for the present study.

Priority hypotheses for the present study are those initial hypotheses that were contained in both sets. They are:

- $H_1[H(t)_8 \equiv H(p)_7]$: There will be a significant negative relationship between the Aloofness of the principal and Alienation in the educational environment.
- $H_2[H(t)_{10} \equiv H(p)_8]$: There will be a significant positive relationship between the Thrust of the principal and Morale in the educational environment.
- $H_3[H(t)_{18} \equiv H(p)_{16}]$: There will be a significant positive relationship between the Disengagement of the teachers and Alienation in the educational environment.
- $H_4[H(t)_{19} \equiv H(p)_{13}]$: There will be a significant positive relationship between the Hindrance of the teachers and Alienation in the educational environment.
- $H_5[H(t)_{21} \equiv H(p)_{12}]$: There will be a significant negative relationship between the Disengagement of the teachers and Morale in the educational environment.

A second group of plausible relationships can be selected by choosing initial hypotheses from the pilot study for which no previous research inferences were examined. The following initial hypotheses fulfill this requirement.

- $H_6[H(p)_1]$: There will be a significant positive relationship between the Consideration of the principal and Resources in the educational environment.
- $H_7[H(p)_2]$: There will be a significant positive relationship between the Thrust of the principal and Resources in the educational environment.
- $H_8[H(p)_3]$: There will be a significant positive relationship between the Aloofness of the principal and Resources in the educational environment.

- H₉ [H(p)₉]: There will be a significant negative relationship between the Intimacy of the teachers and Resources in the educational environment.
- H₁₀ [H(p)₁₄]: There will be a significant negative relationship between the Hindrance of the teachers and Resources in the educational environment.
- H₁₁ [H(p)₄]: There will be a significant negative relationship between the Production Emphasis of the principal and Opportunism in the educational environment.
- H₁₂ [H(p)₁₀]: There will be a significant negative relationship between the Disengagement of the teachers and Opportunism in the educational environment.
- H₁₃ [H(p)₁₅]: There will be a significant negative relationship between the Hindrance of the teachers and Humanism in the educational environment.

Two additional relationships emerged with conflicting supporting evidence. The first of these, H(p)₁₁, regards the relationship between the Hindrance of the teachers and Morale in the educational environment. This relationship, though receiving quantitative support from the pilot study, received no support in Hodgkinson's study. The second relationship of interest regards Consideration of the principal and Morale in the educational environment. Examination of Hodgkinson's findings revealed a significant positive relationship. The pilot study results, however, reveal the reverse, a significant NEGATIVE relationship. Although no hypotheses will be postulated in either of these two instances, special attention will be given to these relationships in the analysis of the data of the present study.

Other relationships. One of the goals of this study is to refine administrative theory by identifying additional plausible relationships that bear on elementary schooling. Campbell and Stanley (1963, p. 64) suggest that the absence of such correlations can rule out many

hypotheses. Also, the approach taken here can "provide a preliminary survey of hypotheses, and those which survive this can then be checked through. . . experimental manipulation." In addition, an important part of the present study is to seek discriminating profiles of principal behavior and teacher behavior in relation to various features of the educational environment. Described further in Chapter IV, the intent of this exploratory procedure is primarily to generate additional hypotheses for future research of a more experimental nature.

C H A P T E R I I I

RESEARCH PROCEDURES

The intent of this chapter is to describe the research methodology of the present study. Procedures for obtaining the sample of thirty-six elementary schools will be outlined; also, a description will be provided of the diverse demographic characteristics of the sampled schools. Methods employed for collection of data will be presented. The final section of the chapter will describe the instruments used.

Sample

In the Fall of 1970, letters were prepared and sent to representatives of approximately fifty Massachusetts elementary schools, inviting their participation in the study. Each of the schools was a member of the Network of Schools, a statewide consortium of schools involved in collaborative activities with the University of Massachusetts. (Membership in the network was determined in 1969 after a brochure was mailed to approximately three thousand Massachusetts principals and superintendents. At that time each principal was invited to submit an informal proposal describing his school's activities. Replies were received from nearly one hundred elementary and secondary schools across the state. Essentially, these schools comprise the Network of Schools. A further description of the network is included in Appendix E.) Returns were received from representatives of thirty-five schools, with two

declining to participate. Eight additional schools were obtained as they informally indicated interest in the study. The following criteria were developed to consider all schools for inclusion in the final sample.

1. It was necessary for each school to have a full-time principal.
2. It was desirable for the organization of each school to include a range of at least five grade levels.

The final sample consisted of thirty-six schools representing a wide diversity of elementary education. These diverse characteristics included a range of district per-pupil expenditure from \$478 to \$950, a school enrollment spread from 225 to 860, and schools from city, suburban, and rural municipalities. These and other demographic characteristics are displayed in Table 4. While the sample is in no way to be considered random, it is reasonable to believe that it is widely representative.

Principals of participating schools were contacted by telephone and arrangements were made for the collection of data. A date was scheduled for administering the instruments to all fifth and sixth grade pupils and the entire faculty of each school. Pupils were scheduled to complete the ESES-II during the school day in groups usually no larger than sixty. A faculty meeting was arranged for teachers to complete the OCDQ. About thirty minutes was needed for each administration of these instruments.

A team of three graduate students was formed to collect data in each of the selected schools. Two of these individuals had previously been trained to administer the instruments in the pilot study. Even so,

Table 4

SCHOOL DEMOGRAPHIC INFORMATION

CODE NUMBER	TYPE OF SCHOOL	SCHOOL ENROLLMENT	APPROXIMATE SOCIO-ECONOMIC CLASS	NUMBER OF PUPILS IN SCHOOL DISTRICT	PER-PUPIL EXPENDITURE	POPULATION OF MUNICIPALITY	CLASSIFICATION OF MUNICIPALITY ¹
000	1-5	440	Lower Middle	3,738	\$478	15,200	City
001	K-6	397	Lower Middle	6,342	\$578	40,000	Urban Town
002*	K-8	251	Middle	*	\$250*	175,000	City (*Catholic School)
003	K-6	748	Middle	6,910	\$528	43,000	City
004	K-6	800	Heterogenous	5,366	\$835	13,500	Town
013	K-5	510	Lower Middle	4,699	\$716	2,600	Town
014	K-6	433	Upper Middle	2,714	\$675	5,400	Town
100	K-5	310	Middle	14,793	\$756	62,000	Urban Town
101	K-6	600	Upper Middle	2,714	\$675	5,400	Town
102	K-6	380	Middle	386	\$612	1,350	Town
103	1-5	723	Lower Middle	4,054	\$490	18,000	Urban Town
110	1-6	860	Middle	3,738	\$478	15,200	City
112	K-6	323	Middle	18,219	\$950	89,000	City
114	1-6	818	Upper Middle	841	\$699	1,900	Town
121	1-6	480	Lower Middle	3,561	\$515	20,500	Urban Town
200	K-8	435	Middle	*	*	*	*State College Lab School
202	K-6	450	Middle	2,698	\$800	2,718	Town
203	4-6	390	Upper Middle	992	\$850	8,242	Town
212	K-6	225	Lower Middle	3,332	\$600	19,000	City
213	K-6	271	Middle	3,332	\$600	19,000	City

¹According to 1970 Edition of the Commercial Atlas and Marketing Guide, Rand McNally & Company.

Table 4 (Continued)

CODE NUMBER	TYPE OF SCHOOL	SCHOOL ENROLLMENT	APPROXIMATE SOCIO-ECONOMIC CLASS	NUMBER OF PUPILS IN SCHOOL DISTRICT	PER-PUPIL EXPENDITURE	POPULATION OF MUNICIPALITY	CLASSIFICATION OF MUNICIPALITY
300	K-6	465	Upper Middle	7,571	\$796	31,200	Urban Town
301	K-6	325	Middle	7,571	\$796	31,200	Urban Town
304	K-6	398	Middle	7,571	\$796	31,200	Urban Town
311	K-6	489	Middle	7,571	\$796	31,200	Urban Town
313	K-6	410	Upper	7,571	\$796	31,200	Urban Town
330	1-6	350	Middle	2,984	\$550	600	Town
331	K-6	476	Lower Middle	2,984	\$550	2,385	Town
332	1-6	345	Middle	2,984	\$550	5,000	Town
333	1-6	411	Middle	2,984	\$550	5,000	Town
342	K-6	609	Upper Middle	7,571	\$796	31,200	Urban Town
343	K-6	345	Upper Middle	7,571	\$796	31,200	Urban Town
400	1-5	254	Lower Middle	4,054	\$550	18,000	Urban Town
410	K-5	476	Middle	3,187	\$517	11,000	Urban Town
411	K-6	547	Upper Middle	5,800	\$851	11,000	Town
420	K-5	364	Lower Middle	14,793	\$756	62,000	Urban Town
422	K-6	645	Upper Middle	4,396	\$890	23,200	Urban Town

two formal training sessions were held to assure that each member of the team would administer the instruments in a uniform way. After appropriate training, the following procedures were used in administering the student questionnaire.

1. The researcher introduced himself to the student group, related the general purpose of the questionnaire, and made sure that each pupil had a questionnaire booklet, optical scanning sheet, and a pencil.
2. Pupils were asked to read the introductory section silently, and to follow along as the researcher reviewed these directions aloud.
3. The researcher illustrated the procedure for marking the answer sheet, and assisted the pupils in filling in the school number and preliminary biographical information.
4. The researcher stressed to pupils that their names were not being requested and that there was no time limit for completion of the questionnaire. Pupils were encouraged to ask for help with words they did not understand.
5. As each pupil finished, the researcher collected the questionnaire, informally checking the answer sheet to assure that all items were completed and that the school number was clearly marked.

Procedures used for administering the teacher questionnaire were similar to those above, with the exception of steps two and three. It was assumed that teachers would not need as thorough instructions in marking the answer sheet or understanding the directions. Also, teachers were

Table 5

Comparison Between the Number of False Responses to ESES
 Provided by Pupils Enrolled in School Less Than
 One Year and One Year or Greater

	Pupils Enrolled in School Less than One Year	Pupils Enrolled in School One Year or Greater
NUMBER OF STUDENTS	422	3,683
MEAN NUMBER OF FALSE RESPONSES	20.41	20.40
VARIANCE	15.52	14.36

$t = .0524$

$p > .05$

permitted to leave when they had completed the instrument. Usable data were received from 4,105 fifth and sixth grade pupils and 627 teachers in thirty-six elementary schools.

Previous elementary school environment studies have limited the ESES data to those pupils who have been enrolled in the school for at least a year. To assist in making this decision for the present study, pupil data was divided into two groups--those in attendance at the school for less than one year and those enrolled for one year or longer. The total number of false responses was computed for each pupil, and the significance of differences between the means of these two samples was then tested by use of a Student's *t*. Displayed in Table 5, the results indicated no compelling reason for excluding from the present analysis the perceptions of those pupils enrolled in the school for less than a year. For this reason, the current investigation will include the perceptions of all responding students, regardless of the length of their enrollment in the school.

Instrumentation

Two questionnaires were used in gathering data. The educational environment of sampled schools was measured by the most recent revision of the Elementary School Environment Survey (ESES). Environment scores were obtained along the dimensions of alienation, humanism, autonomy, morale, opportunism, and resources. The Organizational Climate Description Questionnaire (OCDQ) was used to identify the teacher and principal behavior in each school. The use of the OCDQ was limited to the scores

on the eight subtests, which are entitled disengagement, hindrance, esprit, intimacy, aloofness, production emphasis, thrust, and consideration. Each of these instruments will be described in further detail in the remainder of this section.

The Elementary School Environment Survey (ESES). This instrument was developed in its initial form in 1968 by Sinclair, who determined that similarities and diversities existed in the educational environments of sixteen California elementary schools. To administer the instrument, two forms of the ESES were alternately distributed to the pupils in each group being surveyed. The scoring procedure for the instrument was first to determine the percentage of pupils in the school responding true and the percentage responding false to each item. If pupil responses indicated two to one consensus in the keyed direction, a score of +1 was assigned as the school score on the item. If the two to one consensus existed in the reverse direction, a score of -1 was assigned. Items not receiving this consensus in either direction were assigned a 0 value. By summing these values for items in each dimension, school environment scores could be obtained along the five variables of practicality, community, awareness, propriety, and scholarship. Names for these dimensions coincided with those developed by Pace for CUES.

Sadker recently conducted a factor analytic study of the ESES. Two analyses were performed. One factor analysis concerned itself with individual student responses. In the second analysis each school was treated as an independent subject. For mathematical purposes the procedure for scoring items was changed so that percentage scores for an

entire school on each item were recorded as an item score; also, fifteen of the forty items on both forms A and B were dropped before the analyses were performed. A generalized Harris-Kaiser program was used to perform an oblique axes analysis, in addition to an orthogonal axes analysis of the verifax program. After his analysis, Sadker suggested revisions of the original five environmental variables. The new factors were named alienation, humanism, morale, autonomy, opportunism, and resources. The revised instrument contained forty-two items, including eight that were newly created. Placement of the items within each factor is provided in Appendix F. For purposes of the present study, a table of random numbers was used to assign the items of the revised ESES to the questionnaire for pupils. Marking instructions and other introductory information were developed, answer sheets were obtained, and pupil booklets were prepared. The completed pupil booklet is included in Appendix G. An appraisal of the reading level of ESES (II) was obtained by applying the Lorge Formula (1959) for estimating difficulty of reading materials. After determining such elements as the number of total words in the sentences, the number of prepositional phrases, and the number of "hard" words in the questionnaire, a Readability Index of 4.47 was obtained. This number may be considered an estimate of the grade level of the instrument, and indicates that the material included in ESES (II) is within the reading comprehension of average fourth-grade children. Lorge (p. 1) cautions that the Readability Index should not be considered definitive, "Nevertheless, the Lorge Formula provides an overall estimate which should be useful in grading materials."

Three approaches were used in order to assess the validity of the present form of the ESES. First, content validity was considered by examining the reactions and comments of pupils regarding specific items on the questionnaire. After administering the instrument in each school, members of the data collection team reviewed problems and questions which were evident. In the view of those who collected data, the following items seemed to generate frequent and considerable misunderstanding among pupils.

9. Many of the teachers go out of their way to help students.
24. Students do not get any special favors in this school.
29. Students that the principal and teachers know will have it easier in this school.
36. Teachers seldom take their classes to the library so that students can look up information.

A threat to content validity exists to the extent that misunderstandings of the meanings of these items are shared by other pupils who completed the ESES. An additional indication of the degree of content validity of the ESES (II) is obtained by examining the history of its development. Operating on Pace's (1967, pp. 17-18) assumption that the substance or content of the measure is representative of the environment being considered, Sinclair (p. 48) showed that the items in the ESES were representative of the characteristics of the defined environmental variables. A systematic examination of the items of the present instrument has revealed that these same requirements seem adequately fulfilled, with the possible exception of the placement of the following item:

39. Most of the teachers in this school are unfriendly.

The above item was placed in the environmental variable of Resources. It may be more appropriately allied with the Morale factor.

The construct validity of ESES (II) was assessed by conducting a factor analysis of the data obtained in the present study. As much as possible, the current analysis employed the same factor analytic procedures used by Sadker. Two problems were faced in this attempt. First, the previous analysis involved two separate populations, those students who completed form A of ESES (I), and those who completed form B. These groups were considered by Sadker in separate factor analyses, and the findings were combined to suggest the six new environmental factors. The present factor analysis differs from Sadker's in that data were obtained from a single population of students. A second difference concerns the number of items included in the analysis. In factor analytic studies, it is mathematically desirable to have a sample which is more than twice the size of the instrument. Since this was not possible in the current analysis, spuriously high results may have occurred in the factor loadings. As in Sadker's study, an orthogonal axes analysis of the verifax program was performed. The factor matrix derived from this program served as input to a generalized Harris-Kaiser oblique analysis. Factor loadings and communality values were compared to corresponding results obtained by Sadker. These comparisons are displayed in Tables 6 and 7. While the results are not substantial enough to provide overwhelming support for the six environmental factors suggested by Sadker, it is felt that there was sufficient agreement between the two analyses to infer adequate construct

validity. Additional validation of this sort seems warranted in future studies specifically directed toward this purpose.

A third approach to validity taken in this study is the determination of the degree of relationship between a defined construct and measures of other identifiable features of the sampled schools. Since scores for each school are available for the Halpin-Croft OCDQ, relationships between ESES (II) variables and OCDQ variables may be considered in part to bear on the predictive validity of the ESES (II). Since the body of the current study is concerned with just such relationships, they will not be reported at this stage.

On the basis of the preceding investigation concerning validity of the ESES, Form II, the following adaptations were made for the analysis in the present study. First, because items 9, 24, 29 and 36 seemed to cause misunderstanding on the part of pupil respondees, these items will be excluded from the analysis. Second, on the basis of the low communality level obtained (see Table 6), item 17 will be excluded. In addition to these changes, it was determined that the constructs of Morale and Resources would have more strength if item 39 was associated with the Morale, rather than Resources variable.

According to Pace and Stern (1958, p. 272), it may not be appropriate to obtain conventional reliability estimates for instruments such as ESES. As reported by Pace (1969, pp. 42-43),

The usual formulas for estimating reliability--test-retest, split-halves, KR formulas, and so forth--are all based on the variance of scores and are not applicable to estimating the reliability of a score at a single school. . . (QUES scores) . . . are based on the logic of consensus, not the logic of variance. Consensus is the opposite of variance.

TABLE 6
Comparison of Communalities*

ITEM	FACTOR					
	I	II	III	IV	V	VI
1	.87 (.84)					
2	.78 (.64)					
3	.83 (.56)					
4	.82 (.73)					
5	.63 (.60)					
6	.84 (.86)					
7	.72 (.72)					
8		.75 (.57)				
9		.62 (.63)				
10		.77 (.57)				
11		.70 (.83)				
12		.60 (.51)				
13		.83 (.65)				
14		.76 (.84)				
15			.76 (.75)			
16			.81 (.75)			
17			.64 (.38)			
18			.68 (.74)			
19			.72 (.74)			
20 (NEW)			-- (.46)			
21 (NEW)			-- (.73)			
22				.81 (.76)		
23				.82 (.66)		
24				.72 (.51)		
25				.82 (.74)		
26				.72 (.87)		
27				.80 (.79)		
28				.63 (.74)		
29					.75 (.40)	
30					.79 (.48)	
31					.74 (.62)	
32 (NEW)					-- (.80)	
33 (NEW)					-- (.55)	
34 (NEW)					-- (.82)	
35 (NEW)					-- (.66)	

*Two communality values are reported for all items except those newly created by Sadker. Values in parentheses are those obtained by the present cross-validation.

Table 7
Comparison of Factor Loadings*

ITEM	FACTOR					
	I	II	III	IV	V	VI
1	.96 (.86)					
2	.85 (.73)					
3	.76 (.63)					
4	.66					
5	.54					
6	.72 (.89)					
7	.70 (.79)					
8		.77 (.36)				
9		.66 (.36)				
10		.55 (.33)				
11		.46				
12		.42				
13		.90 (.72)				
14		.76 (.33)				
15			.82 (-.65)			
16			.57 (-.72)			
17			.53 (-.49)			
18			.50 (-.74)			
19			.35 (-.41)			
20 (NEW)			--			
21 (NEW)			-- (-.78)			
22				.78 (-.43)		
23				.48		
24				.43		
25				.78 (-.77)		
26				.58 (-.73)		
27				-.55 (.35)		
28				.42 (-.76)		
29					.81	
30					.78	
31					-.37	
32 (NEW)					-- (-.54)	
33 (NEW)					--	
34 (NEW)					--	
35 (NEW)					-- (-.51)	

*Where possible, two factor loadings are reported for each item. Factor loadings in parentheses are those obtained by the present cross-validation. Those items receiving less than .30 loading are not reported.

An estimate of the internal consistency of each factor was obtained by correlating each item score within a factor with an average score for the factor. An average correlation was then computed for each factor. This value represents the degree of relationship of the items within a factor to the average score on the factor, and is taken as an indication of factor homogeneity. Tables 8 and 9 present these results.

The Organizational Climate Description Questionnaire. This instrument, developed in 1963 by Halpin and Croft, is comprised of sixty-four items to which responses are given on a four point Likert scale. By administering the instrument (see Appendix G) to all the teachers in an elementary school, scores are computed along the eight subtest dimensions. Individual teacher scores are averaged to derive a school score for each variable; these school means are then converted to normatively standardized scores by comparison with the national sample. Finally, climate similarity scores are determined for each school by comparisons of subtest loadings with six prototypic profiles of open, autonomous, controlled, familiar, paternal and closed climates.

Validity studies of the OCDQ have seriously questioned the procedure used by Halpin to derive climate types. On the other hand, the OCDQ subtest scores have received more favorable acceptance of the research community. After conducting the most thorough validity study of the OCDQ reported to date, Andrews (1965) wrote:

The evidence included a large number of significant relationships with other variables, a tribute to the theoretical importance of the concepts being measured and to the internal consistency of the subtests. These relationships persisted, though reduced in frequency

Table 8

Product-Moment Correlations Between Factor Items
and Average Factor Score

ITEM	AVERAGE FACTOR SCORE					
	I	II	III	IV	V	VI
1	.42					
2	.46					
3	.68					
4	.71					
5	.73					
6	.83					
7	.78					
8		.75				
10		.45				
11		.69				
12		.15				
13		.70				
14		.28				
15			.71			
16			.91			
18			.76			
19			.43			
20			.70			
21			.52			
22				.65		
23				.16		
25				.88		
26				.54		
27				.77		
28				.88		
39				.62		
30					.32	
31					.18	
32					.70	
33					-.05	
34					.38	
35					.52	
37						.37
38						.67
40						.43
41						.67
42						.44

Table 9

Mean Correlation* Between
Factor Items and Factor Score

	FACTOR					
	I	II	III	IV	V	VI
MEAN CORRELATION OF FACTOR ITEMS	.68	.54	.71	.70	.37	.53

*To determine mean correlation values, each item correlation reported in Table 8 was first converted to its Z score equivalent. Z scores were then averaged, with the result converted back to its corresponding r score. The non-linearity of correlation scores necessitated this procedure.

and strength, even in the more halo-free cases. . . . On the basis of the present evidence, then, it is concluded that the subtests of the Organizational Climate Description Questionnaire provide reasonably valid measures of important aspects of the leadership of the school principal in a perspective of interaction with his staff.

Stansbury (1968) recently reported similar findings as he discussed a validation study of the OCDQ in one hundred thirty-nine Iowa elementary schools. Using statistical procedures similar to those employed by Halpin, it was reported that questionnaire items grouped themselves at least as well as they did in Halpin's study, except for the subtests Thrust and Consideration. He also recommended that use of the Organizational Climate Description Questionnaire should be limited to the eight subtest scores.

Numerous studies have supported the reliability of the OCDQ. According to Hoy and Appleberry (1969, p. 78), Andrew's study provides considerable support for both the validity and reliability of the instrument. Brown's (1965) work further corroborates this viewpoint. Also, an indication of the test-retest reliability of the instrument was obtained as Wiggins (1969) compared the characteristics of leader behavior and organizational climates in thirty-five Southern California schools. Thirteen of these schools were retested after a period of eight months, with the finding that replacement of the principal had no significant effect upon the existing organizational climate.

Representatives of the Ontario Institute for Studies in Education are closely scrutinizing the statistical procedures employed in the development and refinement of the OCDQ; Andrew Hayes, University of Georgia, is presently conducting extensive reanalysis of OCDQ data from

over sixteen thousand teachers in nearly a thousand schools. Further data concerning validity and reliability of the OCDQ will be available upon completion of these important studies.

The OCDQ data for each of the sampled schools was transferred from optical scanning answer sheets onto computer cards, mailed to the Education Research Laboratory at the University of Georgia, scored and returned. The eight subtest scores were identified for each school and prepared for use in the current research.

The results of the ESES and OCDQ subtests were summarized in terms of variable scores for each school. This information, and other demographic data about each school, was transferred to computer cards and prepared for analysis. Canonical correlation procedures were used to investigate the over-all relationship between environmental and teacher-principal variables. Specific hypotheses for the study were investigated by statistical examination of relationships between selected environmental variables and features of teacher-principal behavior. Because of the exploratory nature of the research, other plausible relationships were sought. The next chapter describes this analysis.

C H A P T E R I V

ANALYSIS AND INTERPRETATION OF DATA

This chapter describes the analysis and interpretation of data obtained in the present study. After preparing the data for analysis, the over-all relationship between the teacher-principal behaviors and the educational environment of the sampled schools was examined through the use of canonical correlation. Specific hypotheses for the present study were then tested by obtaining product-moment correlations between selected educational environment and teacher-principal variables. Next, other plausible relationships were sought by further examination of the correlation matrices. The chapter's final section examines the teacher-principal interaction in schools exhibiting a postulated ideal educational environment.

Preparation of the Data

Environment variables. Student responses to the Elementary School Environment Survey were transferred from optical scanning sheets to computer cards. The percentage of keyed student responses was determined for each item, school by school. Items were then grouped according to their subtest designation. Next, individual item scores within each subtest grouping were averaged to obtain variable scores for each school. This procedure provided a percentage score for all schools on each environmental variable; thus, each variable score represents the percentage of responding students who perceived their school's educational

environment in the keyed direction. The six environmental scores for each school are depicted in Table 10, in addition to means and standard deviations for each variable. A frequency distribution of school scores for each variable was prepared after converting each factor score into standard score equivalents. These distributions are displayed in Appendix H. All distributions appeared to approximate normal curves.

Principal and teacher variables. Teacher responses to the Organizational Climate Description Questionnaire were transferred to computer cards and mailed to the University of Georgia Educational Research Computer Center for scoring. Returned output for each school included normatively standardized scores on the four principal variables and four teacher variables. These school scores are presented in Table 11. Next, a frequency distribution of school scores for teacher and principal variables was obtained by converting each factor score to its standard score equivalent. These distributions, which approximated normality, are presented in Appendix I.

Computer cards were punched for each school, including elementary environment variable scores and teacher-principal variable scores, and prepared for further analysis.

Relationships Between Groups of Variables

The general relationship between educational environment variables and teacher-principal variables was tested by means of canonical correlation. Canonical correlation expresses, in a single index, the interrelationship between two sets of multiple variables. Other more

Table 10

Educational Environment Scores

SCHOOL NUMBER	Factor					
	ALIENATION	HUMANISM	AUTONOMY	MORALE	OPPORTUNISM	RESOURCES
000	37.0	42.4	47.7	42.8	47.2	58.9
001	28.7	55.2	50.1	57.9	45.7	72.0
002	26.7	63.4	45.7	62.7	41.2	73.0
003	34.9	58.0	46.8	51.8	41.4	66.3
004	22.8	57.7	59.6	60.2	44.7	85.0
013	31.0	50.9	59.9	52.3	46.0	75.7
014	36.4	50.7	61.6	43.8	47.9	68.3
100	23.5	57.4	61.8	60.9	43.6	74.1
101	45.4	45.0	67.4	42.6	54.2	66.1
102	46.6	45.2	60.2	40.8	45.6	64.8
103	35.5	53.9	44.2	48.9	47.1	63.2
110	41.3	43.8	52.4	42.1	47.0	64.0
112	22.4	57.2	61.4	63.5	47.8	68.1
114	33.8	48.8	51.9	47.9	45.1	68.6
121	32.0	49.3	44.2	43.3	45.3	61.5
200	32.8	53.8	45.9	47.7	46.6	47.4
202	44.2	43.7	49.1	39.7	41.4	54.7
203	35.2	46.1	55.4	48.9	45.2	58.7
212	26.6	54.3	43.0	67.7	43.0	65.9
213	22.5	61.0	32.8	63.9	41.5	61.4
300	29.4	53.1	62.4	50.6	48.1	74.2
301	29.8	56.8	47.9	51.2	46.3	62.5
304	30.9	49.1	67.9	45.9	48.7	64.3
311	27.1	52.9	58.0	44.4	44.6	73.9
313	32.0	50.2	63.4	50.2	51.5	71.6
330	26.7	59.0	40.6	66.1	42.3	78.6
331	37.4	48.8	60.4	44.8	44.5	75.4

Table 10 (Continued)

SCHOOL NUMBER	Factor					
	ALIENATION	HUMANISM	AUTONOMY	MORALE	OPPORTUNISM	RESOURCES
332	29.9	49.8	53.2	47.7	47.0	73.6
333	34.0	51.9	46.4	52.6	43.7	67.9
342	23.4	57.7	50.0	54.7	43.0	73.3
343	31.8	50.4	49.1	48.0	48.6	72.9
400	38.3	50.2	49.3	47.7	42.0	54.5
410	30.9	47.7	48.0	62.5	45.8	61.3
411	34.1	51.6	70.5	53.8	49.3	69.6
420	36.9	45.2	54.2	51.8	48.6	61.7
422	37.8	38.8	64.4	49.2	48.8	65.6
MEAN SCORES	32.5	51.4	53.5	51.4	45.8	67.1
STANDARD DEVIATIONS	6.3	5.6	8.7	7.7	3.0	7.5

Table 11

Teacher-Principal Interaction Scores

SCHOOL NUMBER	Teacher Variables				Principal Variables			
	DIS.	HIND.	ESP.	INT.	ALOOF.	PRO.	THRUST	CONSID.
000	53	50	38	45	49	39	41	42
001	51	48	51	49	50	47	56	53
002	46	46	53	55	50	47	52	55
003	49	47	53	47	49	50	56	50
004	46	44	57	60	56	47	56	55
013	54	51	45	49	46	47	48	50
014	57	57	42	45	48	53	35	37
100	53	45	45	58	46	44	48	49
101	59	54	44	53	44	48	45	48
102	50	58	43	56	55	53	32	39
103	53	54	46	52	45	46	49	42
110	53	55	47	50	50	51	54	53
112	46	43	57	53	45	43	49	53
114	59	49	46	55	51	52	41	48
121	57	57	42	45	52	47	39	41
200	51	56	35	54	48	40	52	53
202	63	61	38	55	47	48	28	37
203	58	46	50	57	53	47	46	48
212	47	48	43	43	50	52	52	48
213	44	42	55	49	56	49	53	44
300	46	53	53	53	60	51	52	47
301	45	48	57	57	55	45	51	52
304	53	58	48	50	47	44	52	48
311	46	45	51	52	45	44	42	44
313	50	51	49	45	47	45	40	37
330	51	47	46	53	54	47	45	46

Table 11 (Continued)

SCHOOL NUMBER	Teacher Variables				Principal Variables			
	DIS.	HIND.	ESP.	INT.	ALOOF.	PRO.	THRUST	CONSID.
331	60	53	48	47	52	43	52	55
332	52	47	46	47	55	40	38	46
333	61	51	39	50	56	50	31	43
342	54	50	55	53	48	40	50	49
343	54	57	51	49	52	52	40	45
400	52	48	45	46	50	50	50	40
410	48	43	51	60	49	51	48	51
411	55	52	49	53	43	43	40	46
420	55	44	51	57	51	47	56	57
422	51	50	49	49	47	47	31	37
MEAN SCORES	52.3	50.2	47.7	51.4	50.0	46.9	45.8	46.9
STANDARD DEVIATIONS	4.9	5.0	5.6	4.6	4.0	3.9	7.9	5.7

common multivariate techniques, such as multiple regression, assume a single criterion variable and a multivariate set of predictors. Mathematically, the canonical correlation between two sets of measurements is the maximum correlation between linear functions of the two sets of variables. As expressed by Dunteman and Bailey (1967), "canonical correlation involves finding the linear combination of one set of variables and the linear combination of a second set of variables that will result in a maximum correlation between the two linear functions." The BMD06M Biomedical Computer Program (Dixon, 1965, pp. 207-214) was used to compute three separate canonical correlations. First, the set of principal variables (aloofness, production emphasis, thrust, consideration) was correlated with the set of teacher variables (disengagement, hindrance, esprit, intimacy). Second, the set of teacher variables was correlated with the set of educational environment variables (alienation, humanism, autonomy, morale, opportunism, and resources). Third, the set of principal variables was correlated with the set of educational environment variables. Coefficients, or weights, were determined for all variables in each relationship. These weights produced the maximum possible correlation between the two sets of variables under consideration. Early investigators were primarily interested in deriving the maximum canonical correlation corresponding to the best linear combination of the two sets of variables under consideration. Cooley and Lohnes (1962, p. 37) note that recent research has shown that other linear combinations may also be of importance. Computationally, a "second best," "third best," etc. linear combination is determined, each possessing its associated canonical correlation coefficient.

The significance of each canonical correlation was tested according to procedures outlined by Bartlett (1941, 1947) and described by Cooley and Lohnes (p. 37). In general, with r roots removed, Lambda was defined:

$$\Lambda = \prod_{i=r+1}^q (1 - \lambda_i), \quad q < p,$$

where λ_i represents the latent root removed and p and q represent the number of predictor and criterion variables, respectively. The following χ^2 approximation was then used for the distribution of Λ with $(p-r)$ $(q-r)$ degrees of freedom:

$$\chi^2 = -[N - .5 (p + q + 1)] \log_e \Lambda$$

Tables 12, 13 and 14 summarize the results of the three canonical correlations.

Table 12

Canonical Correlation Between the Set of Principal Variables and the Set of Teacher Variables:

χ^2 Tests of Successive Latent Roots

ROOTS REMOVED	LARGEST LATENT ROOT REMAINING	CANONICAL R	Λ	χ^2	df	p
0	$\lambda_1 = .360$	.60	.412	27.9	16	<.05
1	$\lambda_2 = .336$	.58	.643	13.9	9	>.10
2	$\lambda_3 = .026$	.16	.970	.95	4	>.10
3	$\lambda_4 = .004$	.06	.996	.13	1	>.10

Table 13

Canonical Correlation Between the Set of Teacher Variables and the Set of Educational Environment Variables:

χ^2 Tests of Successive Latent Roots

ROOTS REMOVED	LARGEST LATENT ROOT REMAINING	CANONICAL R	Λ	χ^2	df	p
0	$\lambda_1 = .578$	.76	.245	43.1	24	<.01
1	$\lambda_2 = .260$	.51	.584	16.4	15	>.10
2	$\lambda_3 = .130$	.36	.791	7.1	8	>.10
3	$\lambda_4 = .0900$	.30	.910	2.86	3	>.10

Table 14

Canonical Correlation Between the Set of Principal Variables and the Set of Educational Environment Variables:

χ^2 Tests of Successive Latent Roots

ROOTS REMOVE	LARGEST LATENT ROOT REMAINING	CANONICAL R	Λ	χ^2	df	p
0	$\lambda_1 = .372$	.61	.325	34.3	24	<.10
1	$\lambda_2 = .260$	.51	.517	20.1	15	>.10
2	$\lambda_3 = .240$	.49	.700	10.9	8	>.10
3	$\lambda_4 = .078$	.28	.922	3.5	3	>.10

The relationship between principal variables and teacher variables. The maximum canonical correlation between the set of principal variables and the set of teacher variables was .60, which was significant beyond the .05 level. Thus, there is at least one significant way in which these two sets of variables are related. No further significant combinations seemed to exist.

The contributions of individual variables to the significantly related canonical variates is displayed in Table 15. The loadings reveal that principal behaviors of Thrust and Consideration provide the major contribution to the relationship, while the primary teacher variables were Disengagement and Intimacy.

Table 15

Resulting Weights from Canonical Correlation of
Four Principal Behaviors with Four Teacher Behaviors

(R = .60, p < .05)

Principal Behavior Weights	Teacher Behavior Weights
-1.53 Thrust	.74 Disengagement
1.10 Consideration	.53 Intimacy
- .29 Aloofness	-.30 Esprit
.16 Production Emphasis	.02 Hindrance

The relationship between teacher variables and educational environment variables. The maximum canonical correlation between the set of teacher variables and the set of educational environment variables was .76. This correlation, beyond the .01 level of significance, indicates that these two sets of variables are related in at least one highly significant way. No further significant combinations were obtained.

The assignment of weights to each variable involved in the significant canonical relationship is depicted in Table 16. Inspection of this table reveals the importance of the teacher variables of Hindrance and Disengagement, while the environmental features of Morale and Alienation seem to be primary contributors to the canonical relationship.

Table 16

Resulting Weights from Canonical Correlation
of Four Teacher Behaviors with Six Educational
Environment Features

(R = .76, p < .01)

Teacher Behavior Weights	Environmental Variable Weights
.78 Hindrance	-.75 Morale
.35 Disengagement	.48 Alienation
.02 Esprit	.18 Humanism
-.005 Intimacy	.09 Resources
	.05 Opportunism
	-.04 Autonomy

The relationship between principal variables and educational environment variables. The maximum canonical correlation between the set of principal variables and the set of educational environment variables was .61. The chi square test of significance revealed that this correlation was significant beyond the .10 level. At this level of significance, there is at least one important way in which the two sets of variables are related.

Examination of Table 17 reveals that the primary contributors to the relationship were the principal behaviors of Thrust and Production Emphasis and the educational environment variable of Alienation.

Table 17

Resulting Weights from Canonical Correlation
of Four Principal Behaviors with Six Educational
Environment Features

(R = .61, p < .10)

Principal Behavior Weights		Environmental Variable Weights	
-.99	Thrust	1.23	Alienation
.80	Production Emphasis	.63	Morale
.58	Consideration	.55	Resources
-.21	Aloofness	-.48	Humanism
		-.24	Opportunism
		-.06	Autonomy

Bivariate Relationships

Specific bivariate hypotheses, as developed in Chapter II, were tested by obtaining the Pearson product-moment correlations between isolated teacher-principal variables and selected educational environment variables. In addition, analysis of the canonical correlations indicated the several specific principal-teacher and educational environment variables deserved special attention. Product-moment correlations between environment variables and teacher-principal variables were generated by use of the Nonparametric Statistical System (NPAR) computer program, developed by the Computer Institute for Social Science Research. The intercorrelations and their associated significance levels are presented in Table 18. The complete correlation matrix is reported in Appendix J.

Testing of priority hypotheses. Five priority hypotheses for the present investigation were developed after examining pertinent research findings and data from a pilot study. These hypotheses, developed in Chapter II, are restated below.

- H₁: There will be a significant negative relationship between the Aloofness of the principal and Alienation in the educational environment.
- H₂: There will be a significant positive relationship between the Thrust of the principal and Morale in the educational environment.
- H₃: There will be a significant positive relationship between the Disengagement of the teachers and Alienation in the educational environment.

Table 18

Pearson Product-Moment Correlations Between
Educational Environment Variables and
Teacher-Principal Variables*

VARIABLES OF THE EDUCATIONAL ENVIRONMENT	TEACHER VARIABLES			PRINCIPAL VARIABLES				
	Dis.	Hind.	Esprit	Intim.	Alloof.	Pro. Emp.	Thrust	Con.
Alienation	r = p =	.6122 .0001	-.5323 .0006	-.0996 .5518	-.1384 .4702	.2833 .0848	-.4308 .0070	-.3624 .0254
Humanism	r = p =	-.4441 .0052	.4593 .0038	.1207 .4702	.1586 .3416	-.1031 .5380	.4994 .0014	.3707 .0220
Autonomy	r = p =	.2074 .2116	.0757 .6512	.1174 .4826	-.3619 .0256	-.1294 .6388	-.1723 .3008	-.0319 .8492
Morale	r = p =	-.7090 .0001	.4575 .0038	.2068 .2130	.1132 .4986	.0194 .9080	.4439 .0052	.4065 .0114
Opportunism	r = p =	.2875 .0802	-.0479 .7752	-.0537 .7490	-.2960 .0722	-.1204 .4714	-.1451 .3846	-.0770 .6460
Resources	r = p =	-.2569 .1196	.4475 .0048	.0495 .7678	.1547 .3538	-.0070 .9666	.1002 .5496	.2242 .1760

*Two scores are reported for each relationship: Pearson r and significance level p, for a two-tailed test.

- H₄: There will be a significant positive relationship between the Hindrance of the teachers and Alienation in the educational environment.
- H₅: There will be a significant negative relationship between the Disengagement of the teachers and Morale in the educational environment.

Pearson product-moment correlations and significance levels for each priority hypothesis are highlighted in Table 19.

Table 19

Pearson Product-Moment Correlations
for Priority Hypotheses

	Hypotheses				
	H ₁	H ₂	H ₃	H ₄	H ₅
Pearson r	-.14	.44	.58	.61	-.55
Significance level p*	NS	.005	.0002	.0001	.0004

*Two-tailed test. Significance levels $p > .10$ are marked NS.

Four of the five hypotheses (H₂, H₃, H₄, H₅) were highly significant. Of particular interest were the extremely high correlations for all three hypotheses involving teacher variables. Disengagement and Hindrance behavior were both found to be highly related to Alienation in the educational environment, while Disengagement was found to be highly related to Morale in the educational environment. A significant relationship was also found between the Thrust of the principal and Morale in the educational environment. Even though it is not possible to infer causal

relationships from correlational findings such as these, it is felt that the four significant findings reported above warrant special attention in future research of a more experimental nature.

Testing of plausible hypotheses. Eight additional hypotheses were developed for the present investigation, derived solely from the findings of the pilot study. Described in Chapter II, these plausible hypotheses are restated below.

- H₆ : There will be a significant positive relationship between the Consideration of the principal and Resources in the educational environment.
- H₇ : There will be a significant positive relationship between the Thrust of the principal and Resources in the educational environment.
- H₈ : There will be a significant positive relationship between the Aloofness of the principal and Resources in the educational environment.
- H₉ : There will be a significant negative relationship between the Intimacy of the teachers and Resources in the educational environment.
- H₁₀ : There will be a significant negative relationship between the Hindrance of the teachers and Resources in the educational environment.
- H₁₁ : There will be a significant negative relationship between the Production Emphasis of the principal and Opportunism in the educational environment.
- H₁₂ : There will be a significant negative relationship between the Disengagement of the teachers and Opportunism in the educational environment.
- H₁₃ : There will be a significant negative relationship between the Hindrance of the teachers and Humanism in the educational environment.

Pearson product-moment correlations for these specific hypotheses are highlighted in Table 20.

Table 20

Pearson Product-Moment Correlations
for Plausible Hypotheses

	Hypotheses							
	H ₆	H ₇	H ₈	H ₉	H ₁₀	H ₁₁	H ₁₂	H ₁₃
Pearson r	.22	.10	.15	.05	-.26	-.12	.13	-.44
Significant level p*	NS	NS	NS	NS	NS	NS	NS	.005

*Two-tailed test; Significance levels $p > .10$ are marked NS.

The only significant finding regarded the negative relation between the Hindrance of the teachers and Humanism in the educational environment. It was of particular interest to note the lack of significant findings for those hypotheses involving the environmental variable of Resources. Even though the results of the pilot study provided the basis for stating five plausible hypotheses between Resources and selected teacher-principal variables, none attained significance in the present inquiry.

Bivariate relationships suggested by Canonical Variate Weights.

Canonical correlation analysis reported in a previous section revealed that the variables of Thrust and Alienation supplied the highest contribution to the canonical relationship between the principal's behavior and the educational environment. It was consequently decided to examine additional bivariate correlations, using first the principal behavior of Thrust and then the environment variable of Alienation. This examination

(see Table 18) revealed the following significant relationships between teacher-principal and environmental variables, in addition to those already reported.

There was a significant ($p = .007$) negative relationship between the Thrust of the principal and Alienation in the educational environment.

There was a significant ($p = .001$) positive relationship between the Thrust of the principal and Humanism in the educational environment.

There was a significant ($p = .025$) negative relationship between the Consideration of the principal and Alienation in the educational environment.

There was a significant ($p = .001$) negative relationship between the Esprit of the teachers and Alienation in the educational environment.

An examination of the canonical correlation between teacher variables and environment variables revealed that Hindrance and Disengagement were primary contributors to the relationship. A study of the environmental variables (see Table 18) associated with these two teacher behaviors revealed the following additional significant relationships.

There was a significant ($p = .001$) positive relationship between the Disengagement of the teachers and Humanism in the educational environment.

There was a significant ($p = .0001$) negative relationship between the Hindrance of the teachers and Morale in the educational environment.

Other bivariate relationships. Further examination of the correlation matrix (see Table 18) revealed six additional significant bivariate relationships between teacher-principal and educational environment variables.

There was a significant ($p = .026$) negative relationship between the Aloofness of the principal and Autonomy in the educational environment.

There was a significant ($p = .02$) positive relationship between the Consideration of the principal and Humanism in the educational environment.

There was a significant ($p = .011$) positive relationship between the Consideration of the principal and Morale in the educational environment.

There was a significant ($p = .004$) positive relationship between the Esprit of the teachers and Humanism in the educational environment.

There was a significant ($p = .004$) positive relationship between the Esprit of the teachers and the Morale in the educational environment.

There was a significant ($p = .005$) positive relationship between the Esprit of the teachers and Resources in the educational environment.

In all, a total of seventeen significant bivariate correlations were obtained by computing the Pearson product-moment correlation between the teacher-principal variables and educational environment variables. The environment variables of Alienation, Humanism and Morale were involved in fifteen of the seventeen relationships. Thrust and Consideration behavior accounted for all but one of the seven significant relationships involving the principal, while significant correlations were obtained for all teacher variables except Intimacy.

Since correlational investigations are concerned only with the degree of relation of two variables, it is not possible to suggest cause and effect inferences from the bivariate findings reported above. For example, the finding of a significantly high correlation between Disengagement and Alienation does not enable us to conclude that the Disengagement of the teachers causes students to perceive Alienation in the educational environment. However, the correlational findings do provide indications of useful starting points for experimental research

into possible causal relationships. For school personnel, it should be particularly useful to know that it is possible to examine school conditions such as Alienation, Humanism, and Morale, and that these features are highly related, in unique directions, to specific teacher and principal behaviors such as Disengagement, Hindrance, Esprit and Thrust.

Relationships involving demographic features. Several Pearson product-moment correlations were obtained for relationships of additional interest in the present investigation. It was felt that the exploratory nature of the present study would be buttressed by obtaining correlations between components of the educational environment and such demographic information as the school enrollment, per-pupil expenditure, and the age of the principal. It was consequently decided to compute correlations between these features and the educational environment and teacher-principal variables. Inspection of the correlation matrix displayed in Appendix J revealed the following particularly interesting relationships.

The age of the principal was significantly related ($p < .05$) to the Intimacy (-) of the teachers and Alienation (-), Humanism (+), Autonomy (-), and Morale (+) ($p < .10$) in the educational environment.

The direction of this significant relationship is especially interesting. It is not uncommon for people to place a premium on hiring younger principals, expecting their energy and other characteristics to be translated into vibrant educational programs. The correlations reported above cast serious doubt on this practice.

The number of years the principal has been in education was significantly related ($p < .05$) to his Aloofness score (+) and to Alienation (-), Humanism (+), Autonomy (-), and Morale (+) in the educational environment.

This finding regards the length of educational experience held by the principal. The significant relation to Aloofness suggests that as the principal gains in experience, he is perceived by his teachers as increasingly concerned with protocol, policy-making, and maintenance of institutional norms. As determined in the previous section, Aloofness of the principal was significantly related to Autonomy and Opportunism in the educational environment. A useful follow-up study would be to examine more closely the interrelationship between the age of the principal, his Aloofness behavior, and Autonomy and Opportunism in the educational environment.

The size of the school enrollment was significantly related ($p < .10$) to Morale (-) in the educational environment.

This result should be viewed with some concern by those who are responsible for decisions regarding the size of the enrollment of elementary schools. The findings suggest a fairly significant negative relationship between a school's enrollment and morale in the environment. If low Morale is the result of larger school enrollment, then decisions concerning school size should be made with great care. An experimental study to examine a possible causal relationship is especially warranted in this instance.

Ideal Educational Environments

It was of interest in the present study to advance an ideal educational environment for schools, to identify schools in the sample which seemed to exhibit this profile, and to study the teacher-principal interaction within such schools.

To evolve a hypothetical ideal climate requires consideration of the needs and motivations of those working and learning within the school. A desirable educational environment would be one which would be likely to foster the growth and development of its' students. The environment postulated below represents a desirable direction toward which elementary schools should strive.

Before defining the ideal environment, criteria were established for such terms as high, moderate, or low scores. Given these criteria, summarized in Table 21, an ideal educational environment was postulated as follows.

Alienation -- A low score is desirable on this variable. It is important that students feel involved in school affairs, and that school norms are internalized in their academic and other pursuits. Students must feel the sense of belonging and the accompanying concern for students that is characteristic of schools possessing a low alienation score.

Humanism -- It is crucial that school environments possess a high score on this factor. Reflective of a concern for the integrity and value of the individual, schools must support and inspire creativity in the personal acts of individual student expressions characterized by this atmosphere.

Autonomy -- A moderately high or high score is desirable for this variable. It is important that educational environments support and encourage student independence, and that students are afforded the opportunity to share in the responsibility for their

own learning. It is likewise crucial that sufficient opportunities exist for maturity to be developed through sufficient interaction with teachers and other adults.

Morale -- Representative of a friendly and cheerful school atmosphere, this environment has been described as a happy one in which learners and teachers have a warm relationship. Students should possess a positive attitude toward school, and practice the cooperating behavior associated with such an attitude. Also, it is important that good relationships exist between students and teachers. For these reasons, a high score is desirable on this factor.

Opportunism -- Moderately low or low scores are desired on this variable. Schools must not encourage pupil behavior which adapts to expediency or circumstance. Nor should one gain social or academic success by "knowing how to behave" with important or influential people. We badly need schools which foster honesty and straightforward behavior, unclouded by the entrepreneurial activity and political maneuvering characteristic of higher scores on this factor.

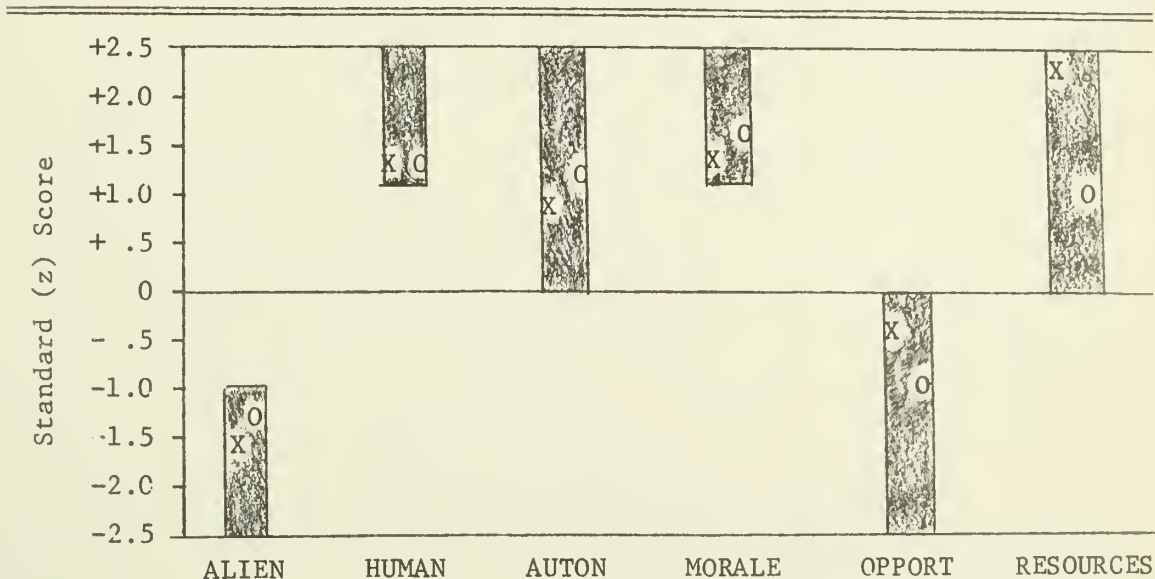
Resources -- A desirable score for this variable is one which is moderately high or high. It is important that schools offer a variety of learning resources to their students, including the availability and friendliness of the teachers. These resources should, however, be derived from clearly examined goals and instructional purposes. While it is important that schools offer

a variety of these learning resources, both human and material, the quality of the educational environment is not necessarily predicated upon such a single factor.

When the scores of the thirty-six schools in the sample were examined, two were found to conform to the requirements of an ideal educational environment. Schools 004 and 100 met the established criteria. The environment scores for these two schools are displayed in Figure 5, which also depicts the desirable range of scores for each educational environment factor.

Figure 5

Variable Scores for Two Schools
Possessing an Ideal Educational Environment



Educational Environment Variable

- Legend: - Range of scores for ideal environment
 X - Scores for School 004
 O - Scores for School 100

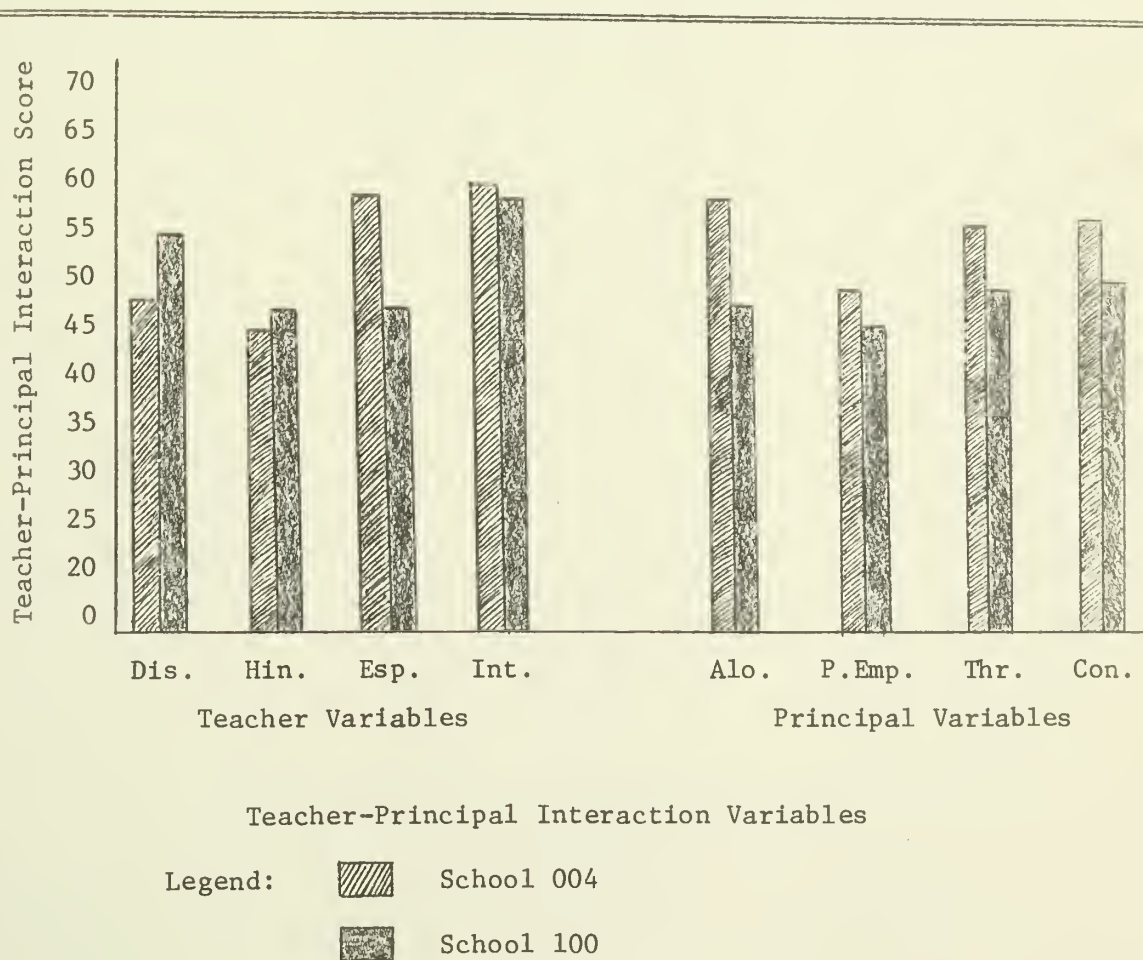
Table 21
 Criteria for Terms Used to Describe
 An Ideal Educational Environment

Term	Range of Standard (z) Scores	Range of Variable Scores					
		ALIEN	HUMAN	AUTON	MORALE	OPPORT	RESOURCES
High Score: Greater than	+1	38.8	57.0	62.2	59.1	48.8	74.6
Moderately High Score: Greater than	0	32.5	51.4	53.5	51.4	45.8	67.1
Moderate Score: Between	-1 to +1	26.2- 38.8	45.8- 57.0	44.8- 62.2	43.7- 59.1	42.8- 48.8	59.6- 74.6
Moderately Low Score: Less than	0	32.5	51.4	53.5	51.4	45.8	67.1
Low Score: Less than	-1	26.2	45.8	44.8	43.7	42.8	59.6

The teacher-principal interaction in the two schools was then compared by placing their individual variable scores on a single graph. This profile is displayed in Figure 6.

Figure 6

Comparison of Teacher-Principal
Interaction in Two Schools Possessing
an Ideal Educational Environment



The similarity of the principal and teacher scores for these two schools is striking. Close inspection of Figure 6 reveals that for five of the eight teacher-principal variables, less than one standard deviation separates the scores of the schools. These similarities add visual support for the contention that a relationship exists between desirable educational environments and selected components of teacher-principal interaction.

C H A P T E R V

SUMMARY, IMPLICATIONS AND RECOMMENDATIONS

This chapter summarizes the findings of the present research. Implications of the study are formulated as they pertain to those who teach and administer in elementary schools. Implications are also drawn for those responsible for training, hiring, and supervising administrative personnel. Additional implications are described for consideration in future investigations. Finally, a set of recommendations is provided for further research and school improvement.

Summary

One primary intent of the present study was to document the relationship between the behavior of the school principal, his staff, and the educational environment of selected elementary schools. The overall relationship of these sets of variables was tested by means of canonical correlations. As anticipated, a high degree of relationship was discovered between the behavior of teachers and the educational environment. In addition, the set of principal variables was significantly related to the set of teacher variables. Further, the behavior of the school principal was found to be related to the set of environment variables, though only at the $p < .10$ level of significance. Findings of the canonical analysis provided sufficient evidence to warrant the following conclusions:

1. The set of teacher variables was significantly related ($p < .01$) to the set of educational environment variables.
2. The set of principal variables was significantly related ($p < .05$) to the set of teacher variables.
3. The set of principal variables was significantly related ($p < .10$) to the set of educational environment variables.

The above findings indicated that specific bivariate relationships should be explored. Priority hypotheses for the present study were also tested. All bivariate relationships were examined by the computation of Pearson product-moment correlations. Inspection of the resulting correlation matrix revealed seventeen significant relationships between teacher-principal variables and educational environment variables. An examination of relationships involving demographic information from each school yielded several additional significant correlations.

Major findings of the bivariate analysis are summarized as follows:

1. The principal behaviors of Thrust ($p < .01$) and Consideration ($p < .05$) were related to Alienation (-), Humanism (+), and Morale (+) in the educational environment.
2. The teacher behaviors of Disengagement and Hindrance were significantly related ($p < .01$) to the educational environment variables of Alienation (+), Humanism (-), and Morale (-).
3. The teacher behavior of Esprit was significantly related ($p < .01$) to Alienation (-), Humanism (+), Morale (+), and Resources (+) in the educational environment.
4. The age of the principal and the number of years he has been in education were significantly related ($p < .05$) to Alienation (-), Humanism (+), Autonomy (-), and Morale [(+) $p < .10$] in the educational environment.
5. The size of the school enrollment was significantly related ($p < .10$) to Morale (-) in the educational environment.

Another feature of the present investigation was the formulation of a profile of an ideal educational environment. A desirable range of scores was suggested for each educational environment variable; two of the sampled schools were discovered to possess the necessary characteristics. The teacher and principal behaviors for these schools were compared by constructing a visual profile of variable scores. For five of eight variables, less than one standard deviation separated the two scores. With particular reference to the scores of each school principal, both had relatively low values for Production Emphasis and high scores on Thrust and Consideration. Teacher variable scores for the two ideal environments were uniformly low on Hindrance and high on Intimacy.

Implications of the Study

This section presents the implications of the present study on the activities of teachers and principals. Implications are also drawn for the training practices designed for school administrators. Finally, implications for future research are discussed.

Implications for teachers. The findings of this investigation document that several bivariate relationships exist between selected components of teacher behavior and the educational environments of elementary schools. Specifically, the behaviors of Disengagement, Hindrance, and Esprit were found to be of special importance. Let us examine each of these teacher behaviors more closely.

First, Disengagement behavior refers to the teachers' tendency to be "not with it," with respect to the task at hand. The teacher

group is not involved, "not in gear," only "going through the motions." This type of behavior was highly related to the environmental features of Alienation (+), Humanism (-), and Morale (-). That is, the more disengaged the teacher, the higher the Alienation and the lower the Humanism and Morale in the environment. Educators should be concerned if pupils view their school as alienating, dehumanizing and lacking in morale. Thus, if there is interest in developing desirable environments for learning, we could begin by examining this particular feature of teacher behavior.

Hindrance behavior was also found to be highly related to the environmental variables of Alienation (+), Humanism (-), and Morale (-). Halpin describes this type of behavior in relation to specific activities of the school principal. That is, Hindrance was characterized as the teachers' feeling "that they are burdened with routine duties, committee demands, and other requirements. . . construed as unnecessary busy-work." The findings reported here provide quantitative support for the use of aides, clerks, and other paraprofessional personnel to assist teachers in their work. In addition, educators should severely reduce the practice of assigning teachers to such extra duties as supervising cafeterias and playgrounds, collecting milk money, and the like. The present investigation has indicated that if teachers view these activities as unnecessary busy work, undesirable learning environments may result.

A final component of teacher behavior warranting special reference at this time is Esprit. As expected, Esprit was highly related to Alienation (-), Humanism (+), Morale (+), and Resources (+). The

findings reported here corroborate Herzberg's notion that the job environment should provide sufficient opportunities for employees to feel task accomplishment and self-worth.

There are some educators (Herriott, 1960) who believe that the effect of teacher activity on pupils is minimal. The findings of the canonical analysis suggest, however, that there is a strong relationship between teachers' behavior and the educational environment. Further, specific relationships were discovered between selected components of teacher behavior and features of the educational environment. Teachers can do no less than be aware of the possible consequences of their action suggested by these results.

Implications for school principals. This study bears directly on at least two issues of utmost concern to school principals. First, although educators have often felt that the school principal occupies a crucial position in the institutional hierarchy, the relation between particular components of his behavior and specific features of the educational environment has been relatively unknown. In this respect, the present investigation documents several significant relationships that should be of interest to the school principal. Of specific import is the principal behavior of Thrust, which was shown to be highly related to selected features of the educational environment. Thrust behavior, though task oriented, is marked also by considerate human relationships with teachers. This behavior is not marked by close supervision, but by the principal's attempt to motivate the teachers through the example which he personally sets. Research findings of the present study indicate

that principals should develop a balance between the press for task achievement and the fostering of cordial social relationships.

Another important implication of the present research regards the principal's responsibility for assessing educational effectiveness. A myriad of testing efforts are currently employed to measure the achievement of pupils. Objective testing also marks the extent to which academic goals are being met by the school's educational program. The features of the educational environment measured in this study are of equal importance. That is, the principal should maintain just as careful a perspective of the internal state of the school organization as that of output and achievement. Measures of achievement may be viewed as symptomatic data; measures of environmental press may serve as indicators of the illness. An especially important feature of the environmental assessment used in this investigation is that the clients--the pupils--provided the environmental data. A crucial perspective is gained when the observations of the students are included in measuring educational effectiveness.

Reference was made in Chapter I of the principal's role as a key agent in fostering educational change and school improvement. The findings of the present investigation could play a central role as planned change efforts are designed and carried out in schools. The ESES and OCDQ could be used to obtain continual feedback from students and teachers regarding the condition of the organization. Given such information, schools could decide on new educational priorities and drop or improve ineffective programs. These efforts could aid the

principal in replacing seat-of-the-pants change efforts with the logic of disciplined inquiry.

Implications for training school administrators. In the midst of recent charges of educational crisis, the school principal has emerged bearing the brunt of critics from within and skeptics from without. As the designated school leader, he is frequently the last to hear of teacher, student, or parent concerns. While there are no simple solutions for the problems school administrators confront, results of the present research should enable principals to understand more completely the parameters of their influence.

It is urgent that graduate school training in school administration include courses and units about such issues as educational environment and school climate. Further, programs of study should provide extensive opportunities for aspiring administrators to examine their own leader behavior in various situations and explore the consequential results indicated by the present research. It is particularly important that the results of this study influence the shape of in-service programs for educational administrators. It is not enough to send school principals off once or twice a year to state or national conventions. Indeed, such activities rarely succeed in improving administrative behavior. Meaningful in-service training must include extensive practice in improving the leadership and decision-making skills of principals. It is crucial that such training offers a framework for administrators to examine the consequences of their actions. This study has provided one such framework.

Implications for future research. As Campbell and Stanley suggest (p. 64), the determination of correlational relationships between selected phenomena is a useful prelude to experimental research. The many significant relationships discovered in the present study should consequently be used in further research of a more experimental nature. It is hoped, for example, that research could be designed to test causal relationships between components of teacher-principal interaction and the educational environment. While selection of hypotheses for such experimental study is primarily the task of future researchers, it would be useful to begin with specific findings of the present investigation. In particular, the significant relationships discovered for the four priority hypotheses should be examined through an experimental study. The inclination of the present researcher is to consider specific teacher-principal behaviors as dependent variables, and environment features as independent variables. The following hypotheses are suggested for future experimental research.

1. There will be a significant, positive, causal relation between the Thrust of the principal and Morale in the educational environment.
2. There will be a significant, positive, causal relation between the Disengagement of teachers and Alienation in the educational environment.
3. There will be a significant, positive, causal relation between the Hindrance of teachers and Alienation in the educational environment.
4. There will be a significant, negative, causal relation between the Disengagement of teachers and Morale in the educational environment.

The present investigation has demonstrated the utility of the technique of canonical correlation. In modern educational research, it

is often difficult to isolate single dependent variables. Frequently a wiser approach would be to examine relationships between sets of multiple variables. Canonical correlation provides a useful statistical tool for this type of research. Also, through continued use of the technique, methods should evolve to both use and interpret results more adequately. One particular implication for future research deserves special note. As may be recalled from Chapter IV, three different canonical correlations were obtained:

1. The relationship between the set of principal variables and the set of teacher variables.
2. The relationship between the set of teacher variables and the set of educational environment variables.
3. The relationship between the set of principal variables and the set of educational environment variables.

In analyzing these results, it would have been desirable to obtain a measure of the relationship between principal variables and educational environment variables, having removed the effect of the teacher variables. In the case of three isolated variables (X, Y, Z), this problem is easily resolved through the use of partial correlations. That is, the relation between X and Z can be determined, after removing the effect of Y. It was not clear whether a similar technique could be employed with canonical correlations. A study of recent developments regarding this problem revealed that no parallel technique was available for use with canonical correlations. Additional research on this problem could begin by extending and refining the procedures described recently by McDonald (1968, p. 351), who developed a generalized approach for obtaining weighted linear combinations of variables. These efforts are urgently

needed, especially since canonical correlation is likely to be increasingly useful in future educational research.

Another important consideration for additional research regards the stability and change of educational environments. The present investigation has provided a measure of the environment at a single, isolated point in time. It is likely that environmental features will vary somewhat from hour to hour, day to day, and year to year. Considerable more research is needed to determine the influence of these environmental fluctuations on both cognitive and affective areas of student growth and development. Are there times when environments tend to stabilize? Do different environments require different change strategies? A multitude of similar questions are of concern to those interested in improving the educational environment of schools.

Recommendations

The following set of recommendations is provided to both guide the efforts of future research and contribute to the improvement of educational programs.

1. An important next step in this research is to examine cause-and-effect relations between specific facets of the elementary principal's behavior and selected components of the educational environment. For example, a study could be developed to experimentally manipulate the principal variable of Thrust. By considering the environmental concerns of Alienation, Humanism, and Morale as independent variables, a pretest-post-test control

- group design could be utilized to examine causal hypotheses.
2. A study should be conducted of psychometric properties of the Elementary School Environment Survey. Such a study could perform an item analysis using both the student and school as the experimental unit, examine the effect of slight word changes in certain items, and consider the entire issue of reliability of the subtests included in the instrument. Additional factor analysis is also warranted as an important phase of continuing research on the ESES.
 3. Procedures should be developed to obtain ESES perceptions of those pupils enrolled in grades lower than five and six. The history of elementary school environment research is that perceptions of all fifth and sixth graders are used as the basis for deriving school environment scores. Additional methods should be explored in an attempt to obtain viewpoints more representative of the total student population. Research could be designed to compare questionnaire methods of gathering data with interview techniques and to determine the appropriateness of defining the school's student sample by random selection procedures.
 4. Educational environment research is urgently needed at the secondary school level. Such phenomena as Alienation, Humanism, and Morale are critical in the survival of some high school programs. Thus, an important extension of the present investigation would be to examine the influence of the secondary school principal and his staff in relation to selected features of educational environment.

5. Those who plan to use the OCDQ as a research instrument should be aware of its shortcomings as well as its strengths. Since several studies have questioned the validity of the OCDQ as a measure of the "climate" of schools, it is recommended that use of the instrument be confined to the subtest scores. The present research has shown that the subtests do indeed provide a useful framework for the study of teacher-principal interaction.
6. Colleges, universities, and others responsible for the training of educational administrators should include the study of educational environments and organizational climates as part of their curricular offerings. It is particularly important that school administrators have experiences in examining the possible effect of their behavior on educational environments. Also, the tools of the present research could be readily adapted by principals as they guide evaluations and assessments of the effectiveness of educational programs.
7. As schools implement curricular changes and other innovations, careful determination of varying effects on educational environments seems necessary. For example, in a recent call for curriculum change, Sinclair (1970) proposed that educational programs be systematically formed in four curriculum segments (independent skills, individual inquiry, group awareness, and personalized continuum). Each of these segments is likely to possess unique environmental determinants. It will be important to maintain a perspective of environmental conditions

throughout the adoption and implementation of these and other attempts at educational change.

School leaders must more clearly comprehend the nature of their influence on the growth of the children they serve. Only then will it be possible to alter climates which discourage learning and build and maintain creative and stimulating educational environments for elementary youth.

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A P P E N D I C E S

APPENDIX A

DESCRIPTION OF TEACHER-PRINCIPAL INTERACTION VARIABLES

DESCRIPTION OF TEACHER-PRINCIPAL INTERACTION VARIABLES

Teacher's Behavior

- I. Disengagement refers to the teachers' tendency to be "not with it." This dimension describes a group which is "going through the motions," a group that is "not in gear" with respect to the task at hand. It corresponds to the more general concept of anomie as first described by Durkheim. In short, this sub-test focusses upon the teachers' behavior in a task-oriented situation.
- II. Hindrance refers to the teachers' feeling that the principal burdens them with routine duties, committee demands, and other requirements which the teachers construe as unnecessary busy work. The teachers perceive that the principal is hindering rather than facilitating their work.
- III. Esprit refers to "morale." The teachers feel that their social needs are being satisfied, and that they are, at the same time, enjoying a sense of accomplishment in their job.
- IV. Intimacy refers to the teachers' enjoyment of friendly social relations with each other. This dimension describes a social-needs satisfaction which is not necessarily associated with task-accomplishment.

Principal's Behavior

- V. Aloofness refers to behavior by the principal which is characterized as formal and impersonal. He "goes by the book" and prefers to be guided by rules and policies rather than to deal with the teachers in an informal, face-to-face situation. His behavior, in brief, is universalistic rather than particularistic; nomothetic rather than idiosyncratic. To maintain this style, he keeps himself—at least, "emotionally"—at a distance from his staff.
- VI. Production Emphasis refers to behavior by the principal which is characterized by close supervision of the staff. He is highly directive, and plays the role of a "straw boss." His communication tends to go in only one direction, and he is not sensitive to feedback from the staff.

- VII. Thrust refers to behavior by the principal which is characterized by his evident effort in trying to "move the organization." "Thrust" behavior is marked not by close supervision, but by the principal's attempt to motivate the teachers through the example which he personally sets. Apparently, because he does not ask the teachers to give of themselves any more than he willingly gives of himself, his behavior, though starkely task-oriented, is nonetheless viewed favorably by the teachers.
- VIII. Consideration refers to behavior by the principal which is characterized by an inclination to treat the teachers "humanly," to try to do a little something extra for them in human terms. (Halpin, 1963, pp. 29, 32)

APPENDIX B

DESCRIPTION OF EDUCATIONAL ENVIRONMENT VARIABLES

DESCRIPTION OF EDUCATIONAL ENVIRONMENT VARIABLES

I. Alienation

A high score on this factor demonstrates a feeling of estrangement in the environment. This feeling of alienation could in fact lead to destructive acts perpetrated against the school itself.

Environments which score low on this factor reflect the presence of a student body which feels involved in school affairs. A sense of belonging is emphasized in this environment, and this sense of belonging is complemented by a concern for students. Students demonstrate their involvement by internalizing school norms in such areas as academic pursuits and obedience to school rules and regulations. The atmosphere is congenial and there is a cohesiveness and a sense of togetherness in this climate.

In conclusion, this factor, then, encompasses environmental characteristics such as the presence or lack of cohesion, concern, and a sense of involvement.

II. Humanism

The items in this factor reflect a concern for the value of the individual. It is a supportive climate that is marked by courtesy.

In addition, this value placed on the individual is carried over to his personal acts of expression, specifically aesthetic expression. This climate demonstrates a concern for creativity, and it is supportive of poetry, music, painting and theatre.

A school characterized by this atmosphere is concerned with the integrity of the individual and a respect for his cultural and aesthetic expressions.

III. Autonomy

A high score on this factor suggests an environment which supports and encourages student independence. This climate suggests student initiative as well as autonomy. Emphasis on procedures and supervision are minimized. Self-direction rather than the obedience to rules of protocol is important. Individual differences, both in opinion and academic interests, are stressed. Another aspect of this environment is that the lines of communication between learners and teachers are open and candid.

This environment affords the student the opportunity to share in the responsibility for his own learning.

IV. Morale

The statements in this factor relate to student attitude towards the school. A high score on this factor indicates a friendly and cheerful school environment. This environment may be described as a happy one in which learners and teachers have a warm relationship.

A low score on this factor indicates a negative student attitude towards the school, and suggests poor relations between learners and teachers as well as disruptive student behavior.

This factor is concerned with student attitudes toward school, and the cooperating behavior which relates to such attitudes.

V. Opportunism

The items in this factor reflect an environment which is characterized by behavior which adapts to expediency or circumstance. A high score on this factor suggests a climate in which one gains social capital and academic status by behaving in an appropriate manner with important and powerful people. Informal political procedures and the importance of personal relationships are emphasized.

This environment seems to be categorized by entrepreneurial behavior and political maneuvering.

VI. Resources

The items in this factor reflect the number of optional learning opportunities available to and initiated for the students. The emphasis here is on the availability of in-class as well as extra-class resources. Included in this category are such resources as written materials, field trips, television, exhibits and music. The availability of friendliness of the teacher as a supporting service for learning is also included in this dimension. Schools which score high on this factor offer a variety of learning opportunities to learners. (Sadker, 1971)

APPENDIX C

ESES SCORES FOR PILOT STUDY

ESES SCORES* FOR PILOT STUDY

Keyed Scores - Alienation Items

SCHOOL	A16	A17	A18	A34	A39	B21	B22	AVE.
1	51.8	51.8	81.5	55.6	29.6	28.0	32.0	47.3
2	60.9	43.5	69.6	52.2	43.5	35.0	25.0	47.1
3	85.7	73.6	71.4	32.1	42.9	23.1	23.1	50.2
4	90.9	18.2	100.0	0.0	0.0	0.0	18.2	32.5
5	80.0	80.0	100.0	30.0	10.0	13.3	26.7	43.6
6	23.8	65.8	89.5	23.7	18.4	2.4	33.8	35.4
7	73.7	47.4	92.1	44.7	28.9	10.2	20.5	45.4
8	79.7	60.2	83.1	29.7	25.4	18.7	20.6	45.4

Keyed Scores - Humanism Items

SCHOOL	A19	A29	B3	B8	B18	B19	B31	AVE.
1	51.9	37.0	72.0	48.0	64.0	24.0	45.8	49.0
2	60.9	43.5	65.0	50.0	55.0	45.0	60.0	54.2
3	53.6	39.3	84.6	57.7	38.5	26.9	26.9	46.8
4	45.5	54.5	90.9	81.8	63.6	54.5	90.9	68.9
5	90.0	70.0	73.3	20.0	80.0	40.0	86.7	65.6
6	47.4	44.7	83.3	52.4	75.0	31.0	21.4	50.8
7	50.0	50.0	89.3	51.3	69.2	28.2	92.3	61.6
8	55.1	50.0	84.1	46.7	64.2	33.6	67.3	57.4

*Reported scores represent the percentage of students responding in the keyed direction. Item numbers are from Form A and Form B of ESES-I.

Keyed Scores - Autonomy Items

SCHOOL	A1	A3	A33	A36	A37	AVE.
1	77.8	44.4	40.7	51.8	63.0	55.4
2	69.6	21.7	39.1	47.8	65.2	48.7
3	75.0	50.0	39.3	37.0	35.7	47.5
4	90.9	27.3	54.5	72.7	45.5	58.3
5	80.0	60.0	40.0	33.3	30.0	48.6
6	57.9	56.7	39.5	21.1	18.4	38.7
7	50.0	52.6	44.7	45.9	34.2	45.5
8	61.0	34.8	43.2	43.2	43.6	45.0

Keyed Scores - Morale Items

SCHOOL	A22	A23	A40	B1	B2	B5	B24	AVE.
1	25.9	48.1	59.3	24.0	44.0	32.0	64.0	42.5
2	4.4	65.2	47.8	55.0	15.0	15.0	75.0	39.6
3	29.6	60.7	78.6	30.8	46.2	34.6	73.1	50.5
4	27.3	54.5	72.7	63.6	45.5	72.7	45.5	54.5
5	30.0	100.0	77.8	66.7	33.3	46.7	73.7	61.2
6	44.7	78.9	65.8	52.4	38.1	35.7	65.0	54.5
7	31.6	63.2	65.8	48.7	10.3	33.3	82.1	47.8
8	32.2	66.1	61.5	37.4	49.5	34.6	54.2	47.9

Keyed Scores - Opportunism Items

SCHOOL	B10	B12	B13	AVE.
1	36.0	8.0	28.0	24.0
2	40.0	30.0	45.0	38.3
3	34.6	34.6	46.1	38.5
4	90.9	18.2	9.1	39.5
5	40.0	66.7	20.0	42.1
6	52.4	26.2	31.0	36.6
7	41.0	28.2	28.2	32.4
8	30.2	27.1	34.6	30.6

Keyed Scores - Resources Items

SCHOOL	B17	B25	B26	B36	B39	AVE.
1	76.0	48.0	54.2	40.0	72.0	58.2
2	65.0	70.0	75.0	65.0	75.0	70.0
3	84.6	57.7	69.2	65.4	61.5	67.8
4	90.9	90.9	54.5	54.5	81.8	74.5
5	86.7	46.7	73.3	26.7	46.7	56.0
6	76.2	52.4	73.8	45.2	54.8	60.5
7	94.1	87.2	76.9	33.3	74.4	73.1
8	79.2	15.1	53.8	52.3	85.9	57.4

APPENDIX D

CORRELATION MATRICES FOR PILOT STUDY

APPENDIX D1
PILOT STUDY
PEARSON PRODUCT-MOMENT CORRELATION COEFFICIENTS*

	ALIEN	HUMAN	AUTON	MORALE	OPPORT	RESOURCES	DISENG	HIND	ESPRIT	INTIM	ALOOF	PROD. EMP.	THRUST
RUMANISM	-.518												
	.063												
AUTONOMY	-.078	.342											
	.415	.167											
MORALE	-.518	.498	-.132										
	.062	.072	.358										
OPPORTUNISM	-.320	.406	-.104	.600									
	.184	.122	.387	.034									
RESOURCES	-.178	.259	.280	-.220	.277								
	.312	.235	.217	.271	.219								
DISENGAGEMENT	.346	-.189	.395	-.756	-.839	-.142							
	.164	.301	.130	.006	.001	.348							
HINDRANCE	.416	-.100	-.045	.484	.394	-.436	-.455						
	.116	.392	.451	.078	.130	.104	.093						
ESPRIT	.210	.279	.020	.078	.017	.373	-.192	.141					
	.280	.217	.478	.415	.481	.145	.298	.349					
INTIMACY	.401	.009	.198	.109	-.370	-.632	.261	.531	.338				
	.126	.490	.292	.383	.146	.025	.233	.057	.170				
ALOOFNESS	-.480	.109	-.089	-.214	.197	.767	-.192	-.686	.186	-.708			
	.080	.382	.403	.277	.293	.005	.297	.014	.303	.011			
PRODUCTION EMPHASIS	.103	.204	.105	-.510	-.508	-.176	.779	-.534	-.242	.091	-.096		
	.388	.286	.386	.066	.067	.313	.004	.056	.250	.402	.396		
THRUST	-.159	.062	-.020	-.444	-.125	.818	.091	-.726	.434	-.526	.876	.071	
	.331	.433	.478	.099	.365	.002	.401	.009	.105	.059	.000	.423	
CONSIDERATION	-.083	.157	.043	-.509	-.191	.740	.221	-.717	.509	-.353	.799	.247	.963
	.410	.332	.453	.067	.299	.007	.270	.010	.067	.158	.003	.246	.000

*Two values are reported for each relationship: The first value is the Pearson r; the second value is the significance level p for a one-tailed test.

APPENDIX D2

PILOT STUDY
SPEARMAN RANK CORRELATION COEFFICIENTS (RHO)*

	ALIEN	HUMAN	AUTON	MORALE	OPPORT	RESOURCES	DISENG	HIND	ESPRIT	INTIM	ALOOF	PROD. EMP.	THRUST
HUMANISM	-.755 .015												
AUTONOMY	.060 .444	.238 .285											
MORALE	-.651 .040	.395 .166	-.156 .356										
OPPORTUNISM	-.371 .183	.429 .145	.286 .246	.659 .038									
RESOURCES	-.132 .378	.191 .326	.310 .228	-.240 .284	.143 .368								
DISENGAGEMENT	.470 .120	.168 .346	.287 .245	-.825 .006	-.743 .017	.036 .466							
HINDRANCE	.491 .108	-.464 .124	-.049 .454	.184 .331	.171 .343	-.756 .015	-.221 .300						
ESPRIT	.255 .272	.108 .399	.253 .273	-.006 .494	.205 .313	.096 .410	-.146 .366	.272 .258					
INTIMACY	.376 .180	-.096 .410	-.060 .444	-.091 .415	-.313 .225	-.651 .040	.218 .302	.593 .061	.585 .064				
ALOOFNESS	-.236 .287	.038 .464	.025 .476	-.242 .282	.013 .488	.875 .002	-.083 .423	-.741 .018	-.103 .404	-.719 .022			
PRODUCTION EMPHASIS	.132 .378	.191 .326	.143 .368	-.671 .034	-.571 .070	-.071 .433	.850 .004	-.517 .222	-.289 .244	.145 .366	-.102 .406		
THRUST	-.084 .421	.108 .400	.108 .400	-.458 .127	-.108 .400	.886 .002	.133 .377	-.749 .016	.121 .388	-.491 .108	.932 .000	.108 .400	
CONSIDERATION	-.121 .388	.204 .314	.168 .346	-.572 .069	-.299 .236	.779 .011	.368 .185	-.810 .007	.055 .449	-.364 .188	.823 .006	.383 .174	.946 .000

*Two values are reported for each relationship: The first value is the Spearman RHO; the second value is the significance level p for a one-tailed test.

APPENDIX D3

PILOT STUDY
KENDALL RANK CORRELATION COEFFICIENTS (TAU)*

	ALLEN	HUMAN	AUTON	MORALE	OPFORT	RESOURCES	DISENG	HIND	ESPRIT	INTIM	ALOOF	PROD. EXP.	THRUST
HUMANISM	-.691 .008												
AUTONOMY	.109 .353	.214 .229											
MORALE	-.444 .062	.255 .189	-.109 .353										
OPPORTUNISM	-.255 .189	.286 .161	.214 .229	.546 .029									
RESOURCES	-.109 .353	.143 .310	.214 .229	-.182 .264	.143 .310								
DISENGAGEMENT	.370 .100	-.182 .264	.182 .264	-.667 .011	-.618 .016	.036 .450							
HINDRANCE	.462 .055	-.491 .044	-.038 .448	.154 .297	.113 .347	-.643 .013	-.077 .395						
ESPRIT	.189 .257	.000 .500	.074 .399	.038 .448	.222 .221	.074 .399	-.113 .347	.275 .171					
INTIMACY	.264 .180	.000 .500	.000 .500	-.189 .257	-.297 .152	-.519 .036	.189 .257	.471 .052	.385 .091				
ALOOFNESS	-.123 .335	.000 .500	.000 .500	-.164 .285	.000 .500	.806 .003	-.041 .444	-.597 .019	-.125 .332	-.627 .015			
PRODUCTION EMPHASIS	.109 .353	.143 .310	.071 .402	-.473 .051	-.429 .069	-.143 .310	.691 .008	-.189 .256	-.222 .221	.074 .399	-.081 .390		
THRUST	-.074 .399	.109 .353	.036 .450	-.296 .152	-.109 .353	.764 .004	.148 .304	-.616 .016	.076 .397	-.415 .075	.862 .001	.109 .353	
CONSIDERATION	-.148 .304	.182 .264	.036 .450	-.444 .062	-.255 .189	.618 .016	.296 .152	-.693 .008	.038 .448	-.264 .180	.698 .008	.255 .189	.889 .001

*Two values are reported for each relationship: The first value is the Kendall TAU; the second value is the significance level p for a one-tailed test.

APPENDIX E

DESCRIPTION OF THE NETWORK OF INNOVATIVE SCHOOLS

DESCRIPTION OF THE NETWORK OF INNOVATIVE SCHOOLS*

The idea for the Network of Innovative Schools was born somewhere between California, Colorado, and Amherst, Massachusetts in the summer of 1968. Its general goal is to improve education in the Commonwealth of Massachusetts by planning, implementing, and evaluating educational innovations. By the fall of 1969, the Center for the Study of Educational Innovations has finalized the concept of the Network, recruited a core staff of fifteen Center Associates to implement the program, and taken the first step toward realizing its objectives.

Conceptually, the Network builds on previous experiments in educational change in several important ways. Membership is limited to single schools in Massachusetts. Participation was solicited from all sectors of the education community--public, private and parochial; elementary, intermediate and secondary schools--with the belief that collaboration among these sectors is essential to renewed progress in education. Because of his key role in the day-to-day activities of the school, the initial communication was targeted to the principal, with simultaneous information to his superintendent. Finally, commitment from participating schools has been gained on the merits of the Network's potential for improving schooling rather than because of available money.

A brochure describing the Network was mailed to approximately 3,000 Massachusetts principals and superintendents. Each principal was

*Prepared by Network staff for 1970 meeting of the American Educational Research Association.

invited to submit an informal proposal describing his school's activities relative to participation in the Network. Replies were received from nearly one hundred single schools across the state.

Selection of a manageable number of schools to form the nucleus of the Network was a formidable task. Several methods were proposed and rejected; there were so many appealing proposals that eight networks which fulfilled the objectives could have been chosen. We wanted to maximize the mix of the core group to include schools representing many points on such dimensions as innovative/non-innovative, public/private/parochial, urban/suburban/rural, elementary/intermediate/secondary, wealthy/poor. The method decided on involved random selection within twelve predetermined categories incorporating the above dimensions. Given the nature of the information in the proposals, no reliable index of innovativeness could be constructed, instead we relied on the other dimensions to provide balance on innovativeness/non-innovativeness. A decision was made to select twelve schools as Network Associates, each of which would be assigned a CSEI consultant. The remaining schools were designated Network Affiliates. This larger group, drawing its cohesion from collaboration with each other, would not have continuing personal assistance from CSEI consultants.

To implement the selection of twelve Associate schools, all initial respondents were invited to a conference held at Framingham State College on January 21, 1970. Despite a day marked by snow and zero temperatures, over two hundred people attended. After an elaboration of the Network and an explanation of the selection process, the schools had

an opportunity to change their category, drop out of the drawing for the twelve associate positions, or withdraw completely. The actual selection was carried out in their presence, followed by a discussion of next steps for finalizing the relationship among the schools and CSEI.

Affiliate and Associate schools are currently in the process of obtaining school board endorsement of their participation in the Network. To date, half of the Associate schools have obtained this endorsement, while replies from Affiliates indicate the final group will number about sixty. CSEI staff members are meeting with boards and school committees to further explain the nature of the required commitment. Generally, we are asking each school board to agree to the following guidelines: a simplified procedure for departing from district policy in case the innovative activities in the school require such departure; release time for school personnel to participate in such activities as workshops, conferences, consultations, and observations in Network schools; cost sharing between the school and the Center for the Study of Educational Innovations based on the nature of the work done in the school and the availability of outside funding; participation in mutually agreeable research activities.

The staff of the Center for the Study of Educational Innovations has identified four action components for the Network. They are:

Service: This component establishes those activities and procedures that provide services to Network schools. As needs are mutually identified by the schools and the CSEI staff, activities will be designed to meet them. Anticipated assistance includes consultant

activities, sharing of information through newsletters and other informal means, participation in awareness sessions, and workshops on innovations.

Social Systems Development: Activities are planned that will foster collaboration through the creation of a social system. A vital element of the design calls for a continuous laboratory program aimed at preparing educators to plan change and work together to reach their objectives.

Diffusion and External Relations: An important factor of a systems approach to change includes the interrelationship between the internal and external forces of the system. Specifically, mechanisms will be established to enable Network schools to diffuse their findings to other educators and the public. Also, care will be taken to assure that the schools are receptive to inputs from persons external to the Network.

Research: In addition to the over-all design for development of a social system, Network participants will collaborate in mutually agreeable research activities relevant to local interests as well as to concerns of educators across the country.

The future development of the Network of Innovative Schools is best understood through analogy. Just as a family gradually becomes a social system of equals, with children maturing and structural roles yielding to shared decision-making, the role of the Center as initiator is designed to diminish over time. Because each member school differs in receptivity to change at any given moment, the combined effect of

consulting with experts and cooperating with peers should result in members reaching the stage of having institutionalized change at differing times. Helping each move from a "dependent" status to an "independent" status is a prime responsibility of the Center. Reaching the objective of a cooperating social system is dependent upon shared experiences. The Center will facilitate such evolution through disseminating information, holding awareness sessions, and conducting a continuing seminar on change.

The initial phase of the Network is designed to last approximately two to five years, with all Associate schools maintaining their membership and with gradually increasing participation of current and new Affiliate schools. Because the Network is viewed as a long-term enterprise, we would expect both change and growth in the social system as some Associate schools move to find their own local networks, and new Associates are selected from the group of Affiliates. Just as a family expands and diffuses its influence, the Network should develop future generations as well as continue to generate new members of the core system.

We believe that this notion of social systems development has the potential of linking individual schools in a state or region in more meaningful ways, and that the Network of Innovative Schools can provide a model for such development.

APPENDIX F

GROUPING OF QUESTIONNAIRE ITEMS BY FACTOR

APPENDIX F1

GROUPING OF ESES ITEMS BY FACTOR

I. Alienation

1. Most of the teachers care about problems that students are having. (False)
2. Most students here care much about their school work. (False)
3. Students sometimes make plans to do something bad to the school. (True)
4. Students do not pay much attention to school rules and regulations. (True)
5. Many students like to stay around after school gets out. (False)
6. This school seems to be an unfriendly place. (True)
7. Many teachers are too busy to talk to students about their problems or to give them extra help. (True)

II. Humanism

8. Most students are not interested in such things as poetry, music, or painting. (False)
9. Many of the teachers go out of their way to help students. (True)
10. If students are unhappy in school, the teacher will call their parents. (True)
11. Students often interrupt while someone else is talking. (False)
12. This school teaches students to be polite. (True)
13. Most teachers do not talk to students about concerts, plays and museums. (False)
14. Students have many chances to help other students. (True)

III. Autonomy

15. Students almost always wait to be called on before speaking in class. (False)
16. Students often work in small groups of about three or four students without the teachers. (True)
17. Students here are very quick to tell teachers about things that should be changed. (True)
18. Most students here do not like to get into any kind of argument. (False)
19. Teachers watch the students closely when they work to make sure there are no mistakes. (False)
20. Students here do not work on projects by themselves. (False)
21. Students often tell teachers what they would like to study. (True)

IV. Morale

22. Many of the students here are unhappy about the school. (False)
23. The students in this school feel like they are one big family. (True)
24. Students do not get any special favors in this school. (False)
25. Many students get into trouble with the teachers. (False)
26. Many students say that they do not like the rules made by the teachers. (False)
27. Many students help each other with their classwork. (True)
28. Many students do not behave while they are on the playground. (False)

V. Opportunism

29. Students that the principal and teachers know will have it easier in this school. (True)
30. One way to get good grades in this school is to be nice to the teachers. (True)

31. The teachers usually check to make sure that students finish their schoolwork. (False)
32. When students do something wrong, they usually get caught. (False)
33. Students know who the most important people in this school are. (True)
34. It is difficult for students to get the teacher to like them. (False)
35. Students know when they can get away with doing something wrong. (True)

VI. Resources

36. Teachers seldom take their classes to the library so that students can look up information. (False)
37. Students may take books from the library shelves without the help of the librarian or teacher. (True)
38. Students often take field trips to interesting places. (True)
39. Most of the teachers in this school are unfriendly. (False)
40. In this school students have many chances to listen to music. (True)
41. Sometimes students watch lessons on television. (True)
42. This school has very few exhibits and pictures for students to look at. (False)

APPENDIX F2

GROUPING OF OCDQ ITEMS BY SUBTEST

Teachers' Behavior

I. Disengagement

1. The mannerisms of teachers at this school are annoying.
2. There is a minority group of teachers who always oppose the majority.
3. Teachers exert group pressure on nonconforming faculty members.
4. Teachers seek special favors from the principal.
5. Teachers interrupt other faculty members who are talking in staff meetings.
6. Teachers ask nonsensical questions in faculty meetings.
7. Teachers ramble when they talk in faculty meetings.
8. Teachers at this school stay by themselves.
9. Teachers talk about leaving the school system.
10. Teachers socialize together in small select groups.

II. Hindrance

11. Routine duties interfere with the job of teaching.
12. Teachers have too many committee requirements.
13. Student progress reports require too much work.
14. Administrative paper work is burdensome at this school.
15. Sufficient time is given to prepare administrative reports.*

*Scored negatively

16. Instructions for the operation of teaching aids are available.*

III. Esprit

17. The morale of the teachers is high.
18. The teachers accomplish their work with great vim, vigor, and pleasure.
19. Teachers at this school show much school spirit.
20. Custodial service is available when needed.
21. Most of the teachers here accept the faults of their colleagues.
22. School supplies are readily available for use in classwork.
23. There is considerable laughter when teachers gather informally.
24. In faculty meetings, there is the feeling of "let's get things done."
25. Extra books are available for classroom use.
26. Teachers spend time after school with students who have individual problems.

IV. Intimacy

27. Teachers' closest friends are other faculty members at this school.
28. Teachers invite other faculty members to visit them at home.
29. Teachers know the family background of other faculty members.
30. Teachers talk about their personal life to other faculty members.
31. Teachers have fun socializing together during school time.
32. Teachers work together preparing administrative reports.

*Scored negatively

33. Teachers prepare administrative reports by themselves.*

Principal's Behavior

V. Aloofness

34. Faculty meetings are organized according to a tight agenda.
35. Faculty meetings are mainly principal-report meetings.
36. The principal runs the faculty meeting like a business conference.
37. Teachers leave the grounds during the school day.
38. Teachers eat lunch by themselves in their own classrooms.
39. The rules set by the principal are never questioned.
40. Teachers are contacted by the principal each day.
41. School secretarial service is available for teachers' use.*
42. Teachers are informed of the results of a supervisor's visit.*

VI. Production Emphasis

43. The principal makes all class scheduling decisions.
44. The principal schedules the work for the teachers.
45. The principal checks the subject-matter ability of teachers.
46. The principal corrects teachers' mistakes.
47. The principal insures that teachers work to their full capacity.
48. Extra duty for teachers is posted conspicuously.
49. The principal talks a great deal.

VII. Thrust

50. The principal goes out of his way to help teachers.

*Scored negatively

51. The principal sets an example by working hard himself.
52. The principal uses constructive criticism.
53. The principal is well prepared when he speaks at school functions.
54. The principal explains his reasons for criticism to teachers.
55. The principal looks out for the personal welfare of teachers.
56. The principal is in the building before teachers arrive.
57. The principal tells teachers of new ideas he has run across.
58. The principal is easy to understand.

VIII. Consideration

59. The principal helps teachers solve personal problems.
60. The principal does personal favors for teachers.
61. The principal stays after school to help teachers finish their work.
62. The principal helps staff members settle minor differences.
63. Teachers help select which courses will be taught.
64. The principal tries to get better salaries for teachers.

*Scored negatively

APPENDIX G

QUESTIONNAIRE BOOKLETS

APPENDIX G1

ELEMENTARY SCHOOL ENVIRONMENT SURVEY

Instructions to Students

We are interested in your ideas about the type of school you go to. You know a lot about the school because as a student you have played on its playgrounds and studied in its classrooms. We are asking you to be a reporter and tell your thoughts about your school.

Please understand that this is not a test, and there are no right or wrong answers. In fact, we do not even ask your name. We simply want your honest ideas about your school.

The items in this questionnaire describe conditions that occur within schools. Please indicate to what extent each of these descriptions characterizes your school. Please do not judge the items in terms of "good" or "bad" behavior, but read each item carefully and respond in terms of how well the statement describes your school.

Marking the Answer Sheet

Please mark your response to each item clearly on the answer sheet. Use pencil only. Erase completely to change answers.

Biographical Information (Use items 1-6 on the answer sheet)

1-3. Fill in the school number as directed by your teacher.

4. Sex: Girl: 1
Boy: 2

5. Grade: Fifth: 1
Sixth: 2
Ungraded: 3

6. Please indicate how many years you have attended this school.
Nine months at this school counts as a year.

Less than one year: 1
One or two years: 2
More than two years: 3

Marking Answers to Sentences

There are forty-two sentences about elementary schools in this booklet. You are to mark each sentence TRUE or FALSE. When you think a sentence tells about your school mark that sentence TRUE by filling in space number 1 on the answer sheet. In other words, blacken in space number 1 if you think the sentence tells the way things usually are in your school, what happens or might happen there, or the way people usually act or feel.

Fill in space number 2 on the answer sheet if the sentence is FALSE or is not the way things usually are in your school, is not what happens or might happen there, or is not the way people usually act or feel.

The following sample shows how to mark a sentence:

Sample Sentence: 1 2 3 4 5
Homework in this school is very easy. ■ □ □ □ □

In this example the student marked box number 1 on the answer sheet to show that homework in this school is very easy. In other words, he thought the sentence was TRUE.

Now you are ready to mark each of the forty-two sentences in the booklet.

It is important to remember that the sentences are about the total school.

Think about each sentence carefully and answer as honestly as you can. Take your time and mark only one space for each sentence. Make sure all sentences are marked.

Find sentence 7 below and space number 7 on the answer sheet for marking this sentence.

7. Students here are very quick to tell teachers about things that should be changed.
8. Students almost always wait to be called on before speaking in class.
9. Students do not pay much attention to school rules and regulations.
10. Students often tell teachers what they would like to study.
11. Students may take books from the library shelves without the help of the librarian or teacher.
12. Students do not get any special favors in this school.
13. Many students like to stay around after school gets out.
14. Many of the teachers go out of their way to help students.
15. Most of the teachers in this school are unfriendly.
16. Most students are not interested in such things as poetry, music, or painting.
17. Students often work in small groups of about three or four students without the teachers.
18. One way to get good grades in this school is to be nice to the teachers.
19. Students know who the most important people in this school are.
20. Students often interrupt while someone else is talking.
21. This school teaches students to be polite.
22. Many students help each other with their classwork.

23. Most students here care much about their school work.
24. Students have many chances to help other students.
25. Teachers seldom take their classes to the library so that students can look up information.
26. This school has very few exhibits and pictures for students to look at.
27. Many students say that they do not like the rules made by the teachers.
28. Students know when they can get away with doing something wrong.
29. Many students do not behave while they are on the playground.
30. Students here do not work on projects by themselves.
31. Most teachers do not talk to students about concerts, plays and museums.
32. Many students get into trouble with the teachers.
33. Many teachers are too busy to talk to students about their problems or to give them extra help.
34. It is difficult for students to get the teacher to like them.
35. Students sometimes make plans to do something bad to the school.
36. Students often take field trips to interesting places.
37. The teachers usually check to make sure that students finish their school work.
38. Most students here do not like to get into any kind of argument.
39. This school seems to be an unfriendly place.
40. In this school students have many chances to listen to music.
41. Many of the students here are unhappy about the school.
42. The students in this school feel like they are one big family.
43. Sometimes students watch lessons on television.
44. When students do something wrong, they usually get caught.

45. Teachers watch the students closely when they work to make sure there are no mistakes.
46. Most of the teachers care about problems that students are having.
47. If students are unhappy in school, the teacher will call their parents.
48. Students that the principal and teachers know will have it easier in this school.

APPENDIX G2

ORGANIZATIONAL CLIMATE DESCRIPTION QUESTIONNAIRE

The items in this questionnaire describe typical behaviors or conditions that occur within school organizations. Please indicate to what extent each of these descriptions characterizes your school. Please do not evaluate the items in terms of "good" or "bad" behavior, but read each item carefully and respond in terms of how well the statement describes your school.

The descriptive scale on which to rate the items is printed at the top of each page. Please read the instructions which describe how you should mark your answers.

The purpose of this questionnaire is to secure a description of the different ways in which teachers behave and of the various conditions under which they must work. After you have answered the questionnaire the behaviors or conditions that have been described as typical by the majority of the teachers in your school will be examined, and from this description a portrait of the teacher-principal interaction will be constructed.

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Marking Instructions

Printed below is an example of a typical item found in the
Organizational Climate Description Questionnaire:

1. Rarely occurs
2. Sometimes occurs
3. Often occurs
4. Very frequently occurs

1 2 3 4 5

1. Teachers call each other by their first names.

In this example the respondent marked alternative 3 on the answer sheet to show that the inter-personal relationship described by this item "often occurs" at his school. Of course, any of the other alternatives could be selected, depending upon how often the behavior described by the item does, indeed, occur in your school.

Please mark your response clearly on the answer sheet, as in the example. Sections I and II of the answer sheet will be used.

PLEASE BE SURE THAT YOU MARK EVERY ITEM.

Biographical Information

Please use numbers 1-12 on the answer sheet for the following information.

1. (example)
- 2-4. Leave blank
- 5-7. School number (Write in the number that is indicated by your proctor.)
8. Position: Teacher 1__

- | | | | | | | | |
|---------------------------------------|------------|---|-----|--|--|--|--|
| | Principal | 2 | ___ | | | | |
| | Other | 3 | ___ | | | | |
| 9. Sex: | Man | 1 | ___ | | | | |
| | Woman | 2 | ___ | | | | |
| 10. Age: | 20-29 | 1 | ___ | | | | |
| | 30-39 | 2 | ___ | | | | |
| | 40-49 | 3 | ___ | | | | |
| | 50-59 | 4 | ___ | | | | |
| | 60 or over | 5 | ___ | | | | |
| 11. Years of experience in education: | | | | | | | |
| | 0-3 | 1 | ___ | | | | |
| | 4-9 | 2 | ___ | | | | |
| | 10-19 | 3 | ___ | | | | |
| | 20-29 | 4 | ___ | | | | |
| | 30 or over | 5 | ___ | | | | |
| 12. Years at this school: | | | | | | | |
| | 0-4 | 1 | ___ | | | | |
| | 5-9 | 2 | ___ | | | | |
| | 10-19 | 3 | ___ | | | | |
| | 20 or over | 4 | ___ | | | | |
1. Rarely occurs
2. Sometimes occurs
3. Often occurs
4. Very frequently occurs
- | | | | | |
|--|---|---|---|---|
| 13. Teachers' closest friends are other faculty members at this school. | 1 | 2 | 3 | 4 |
| 14. The mannerisms of teachers at this school are annoying. | 1 | 2 | 3 | 4 |
| 15. Teachers spend time after school with students who have individual problems. | 1 | 2 | 3 | 4 |
| 16. Instructions for the operation of teaching aids are available. | 1 | 2 | 3 | 4 |
| 17. Teachers invite other faculty to visit them at home. | 1 | 2 | 3 | 4 |

1. Rarely occurs
2. Sometimes occurs
3. Often occurs
4. Very frequently occurs

18. There is a minority group of teachers who always oppose the majority.	1	2	3	4
19. Extra books are available for classroom use.	1	2	3	4
20. Sufficient time is given to prepare administrative reports.	1	2	3	4
21. Teachers know the family background of other faculty members.	1	2	3	4
22. Teachers exert group pressure on non-conforming faculty members.	1	2	3	4
23. In faculty meetings, there is a feeling of "let's get things done."	1	2	3	4
24. Administrative paper work is burdensome at this school.	1	2	3	4
25. Teachers talk about their personal life to other faculty members.	1	2	3	4
26. Teachers seek special favors from the principal.	1	2	3	4
27. School supplies are readily available for use in classwork.	1	2	3	4
28. Student progress reports require too much work.	1	2	3	4
29. Teachers have fun socializing together during school time.	1	2	3	4
30. Teachers interrupt other faculty members who are talking in staff meetings.	1	2	3	4
31. Most of the teachers here accept the faults of their colleagues.	1	2	3	4
32. Teachers have too many committee requirements.	1	2	3	4
33. There is considerable laughter when teachers gather informally.	1	2	3	4
34. Teachers ask non-sensical questions in faculty meetings.	1	2	3	4

	1.	2.	3.	4.
	1. Rarely occurs			
	2. Sometimes occurs			
	3. Often occurs			
	4. Very frequently occurs			
35. Custodial service is available when needed.	1	2	3	4
36. Routine duties interfere with the job of teaching.	1	2	3	4
37. Teachers prepare administrative reports by themselves.	1	2	3	4
38. Teachers ramble when they talk in faculty meetings.	1	2	3	4
39. Teachers at this school show much school spirit.	1	2	3	4
40. The principal goes out of his way to help teachers.	1	2	3	4
41. The principal helps teachers solve personal problems.	1	2	3	4
42. Teachers at this school stay by themselves.	1	2	3	4
43. The teachers accomplish their work with great vim, vigor, and pleasure.	1	2	3	4
44. The principal sets an example by working hard himself.	1	2	3	4
45. The principal does personal favors for teachers.	1	2	3	4
46. Teachers eat lunch by themselves in their own classrooms.	1	2	3	4
47. The morale of the teachers is high.	1	2	3	4
48. The principal uses constructive criticism.	1	2	3	4
49. The principal stays after school to help teachers finish their work.	1	2	3	4
50. Teachers socialize together in small select groups.	1	2	3	4
51. The principal makes all class-scheduling decisions.	1	2	3	4

1. Rarely occurs
2. Sometimes occurs
3. Often occurs
4. Very frequently occurs

52. Teachers are contacted by the principal each day.	1	2	3	4
53. The principal is well prepared when he speaks at school functions.	1	2	3	4
54. The principal helps staff members settle minor differences.	1	2	3	4
55. The principal schedules the work for the teachers.	1	2	3	4
56. Teachers leave the grounds during the school day.	1	2	3	4
57. The principal criticizes a specific act rather than a staff member.	1	2	3	4
58. Teachers help select which courses will be taught.	1	2	3	4
59. The principal corrects teachers' mistakes.	1	2	3	4
60. The principal talks a great deal.	1	2	3	4
61. The principal explains his reasons for criticism to teachers.	1	2	3	4
62. The principal tries to get better salaries for teachers.	1	2	3	4
63. Extra duty for teachers is posted conspicuously.	1	2	3	4
64. The rules set by the principal are never questioned.	1	2	3	4
65. The principal looks out for the personal welfare of teachers.	1	2	3	4
66. School secretarial service is available for teachers' use.	1	2	3	4
67. The principal runs the faculty meeting like a business conference.	1	2	3	4

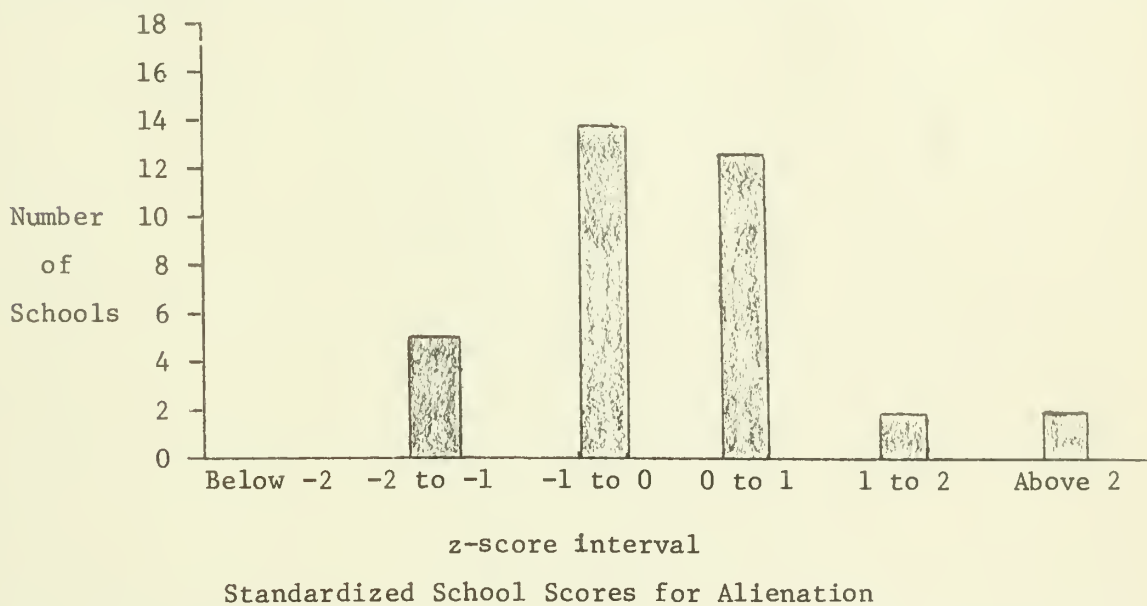
1. Rarely occurs
2. Sometimes occurs
3. Often occurs
4. Very frequently occurs

68.	The principal is in the building before teachers arrive.	1	2	3	4
69.	Teachers work together preparing administrative reports.	1	2	3	4
70.	Faculty meetings are organized according to a tight agenda.	1	2	3	4
71.	Faculty meetings are mainly principal-report meetings.	1	2	3	4
72.	The principal tells teachers of new ideas he has run across.	1	2	3	4
73.	Teachers talk about leaving the school system.	1	2	3	4
74.	The principal checks the subject-matter ability of teachers.	1	2	3	4
75.	The principal is easy to understand.	1	2	3	4
76.	Teachers are informed of the results of a supervisor's visit.	1	2	3	4
77.	Grading practices are standardized at this school.	1	2	3	4
78.	The principal insures that teachers work to their full capacity.	1	2	3	4
79.	Teachers leave the building as soon as possible at day's end.	1	2	3	4
80.	The principal clarifies wrong ideas a teacher may have.	1	2	3	4

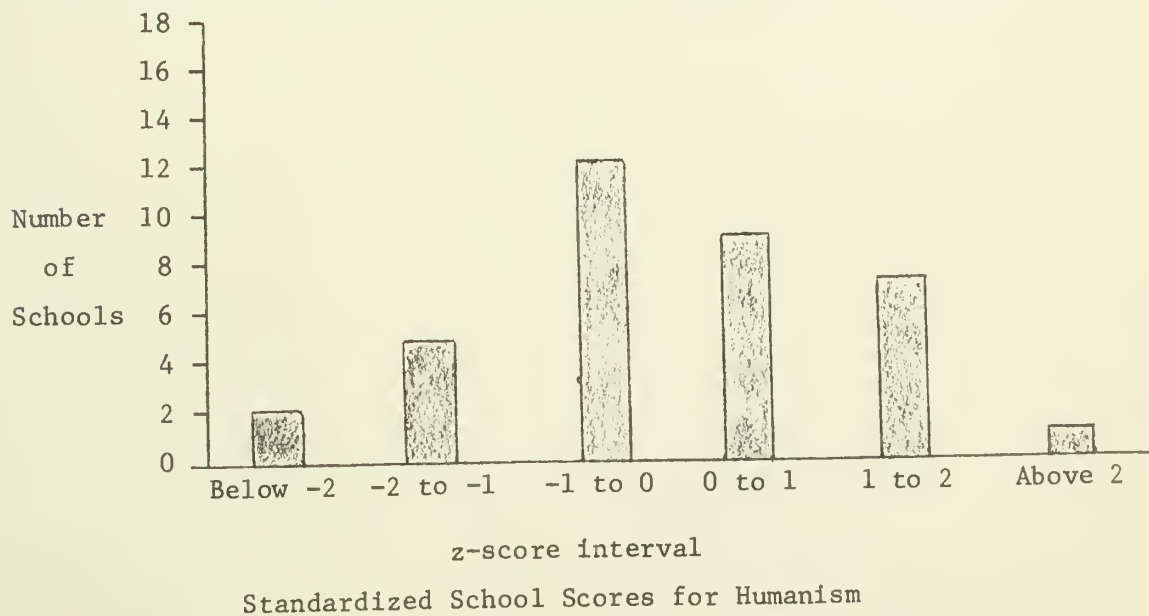
APPENDIX H

DISTRIBUTION OF SCHOOL SCORES ON
EDUCATIONAL ENVIRONMENT VARIABLES

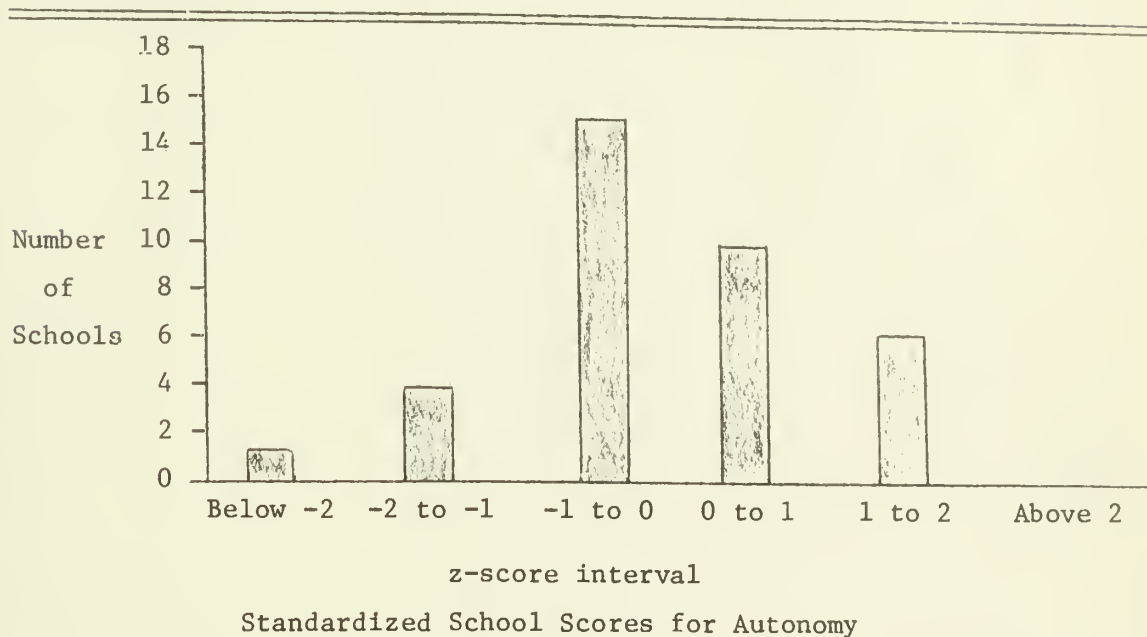
DISTRIBUTION OF STANDARDIZED SCHOOL SCORES
FOR THE ENVIRONMENT VARIABLE OF ALIENATION



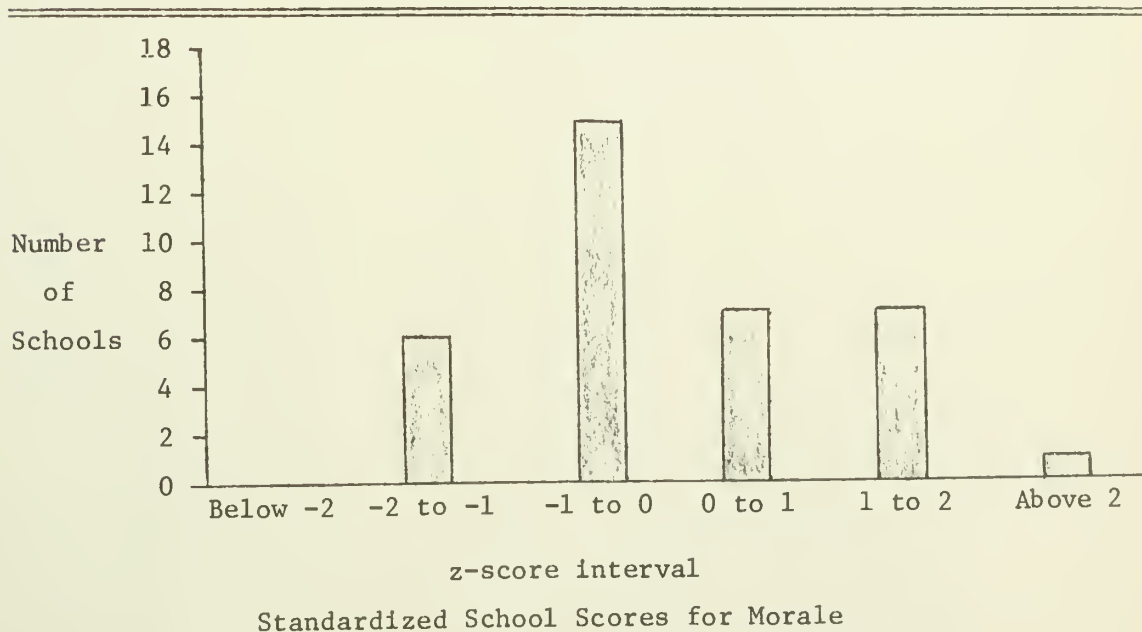
DISTRIBUTION OF STANDARDIZED SCHOOL SCORES
FOR THE ENVIRONMENT VARIABLE OF HUMANISM



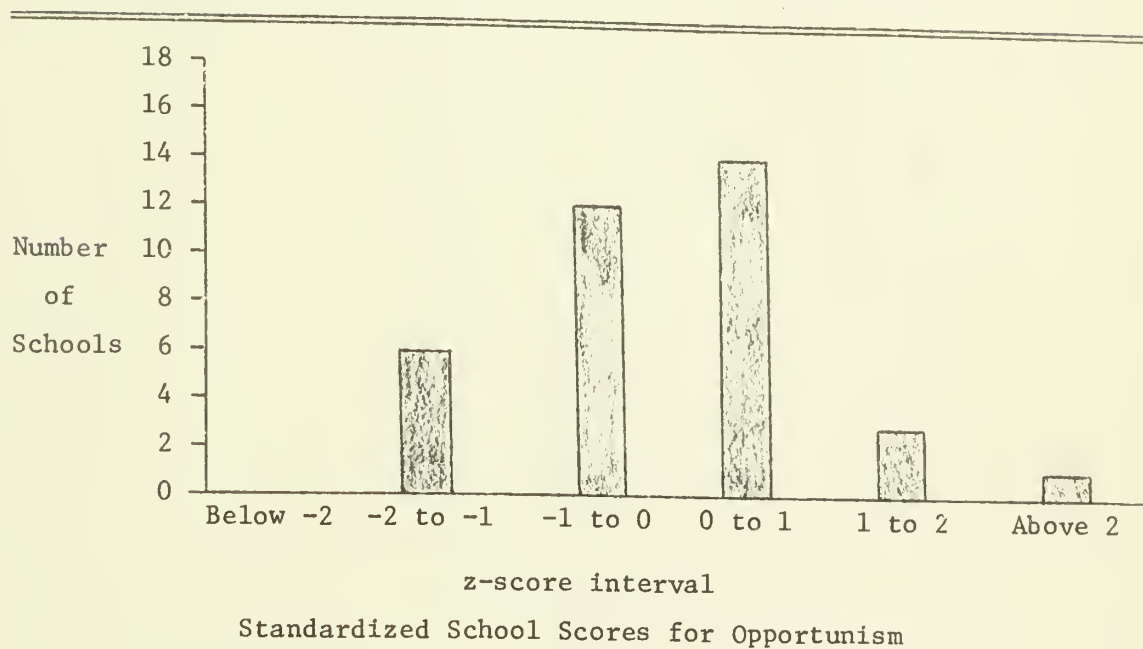
DISTRIBUTION OF STANDARDIZED SCHOOL SCORES
FOR THE ENVIRONMENT VARIABLE OF AUTONOMY



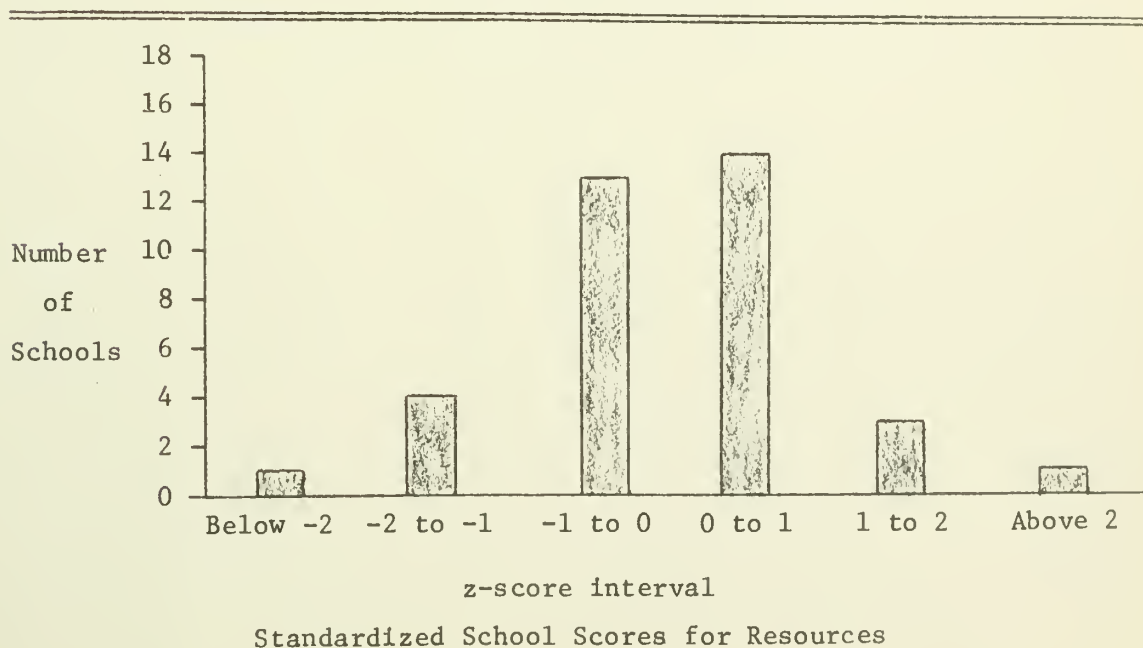
DISTRIBUTION OF STANDARDIZED SCHOOL SCORES
FOR THE ENVIRONMENT VARIABLE OF MORALE



DISTRIBUTION OF STANDARDIZED SCHOOL SCORES
FOR THE ENVIRONMENT VARIABLE OF OPPORTUNISM



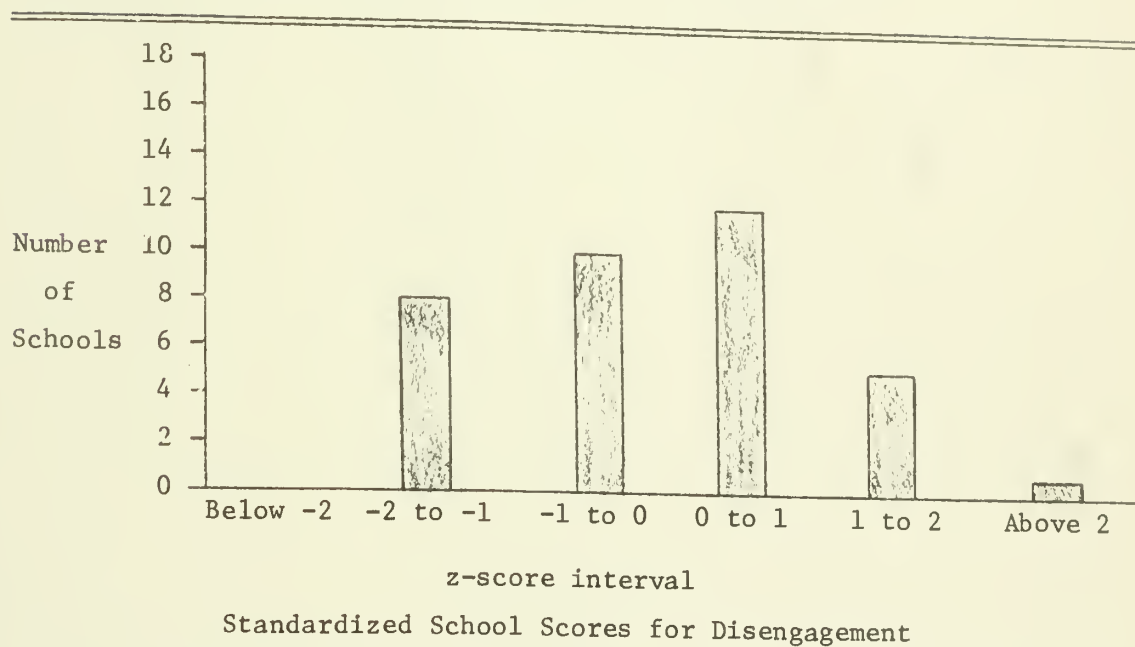
DISTRIBUTION OF STANDARDIZED SCHOOL SCORES
FOR THE ENVIRONMENT VARIABLE OF RESOURCES



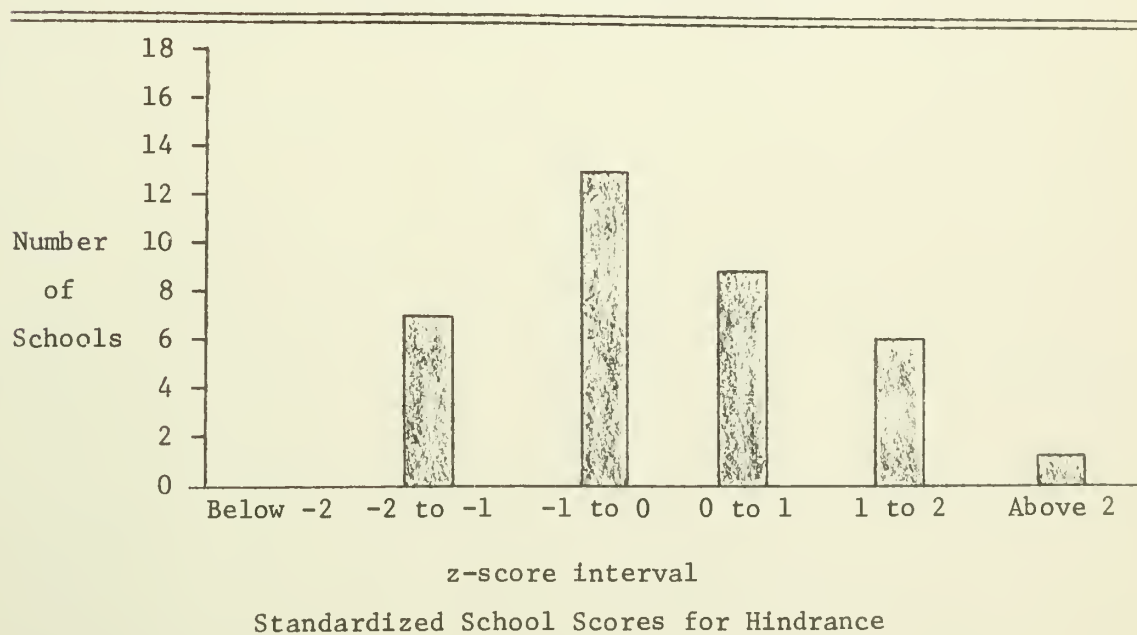
APPENDIX I

DISTRIBUTION OF SCHOOL SCORES ON
TEACHER-PRINCIPAL INTERACTION VARIABLES

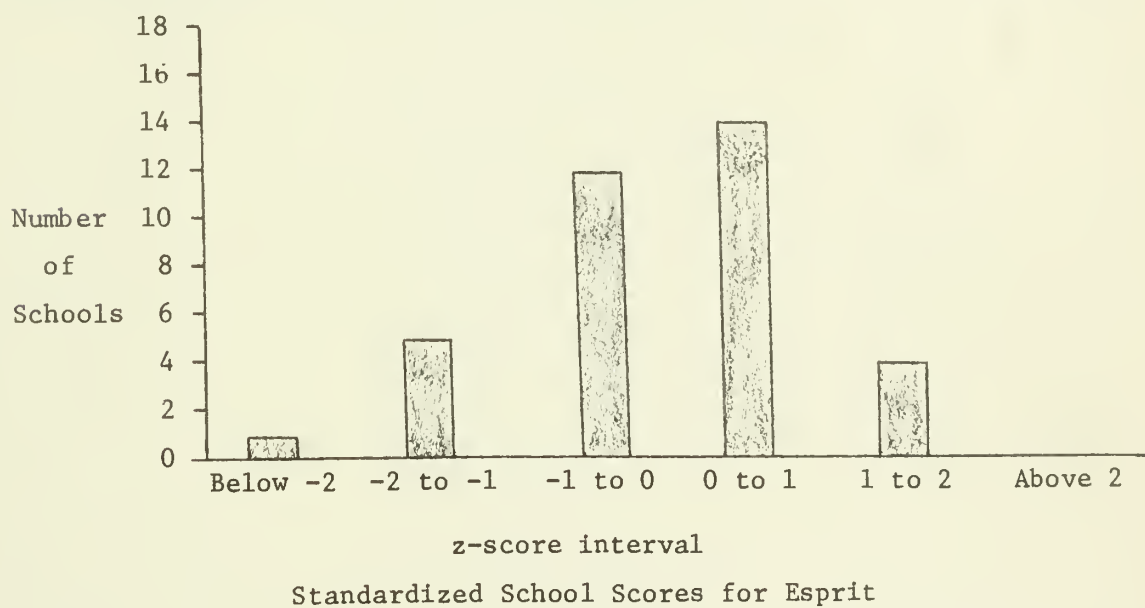
DISTRIBUTION OF STANDARDIZED SCHOOL SCORES
FOR THE TEACHER VARIABLE OF DISENGAGEMENT



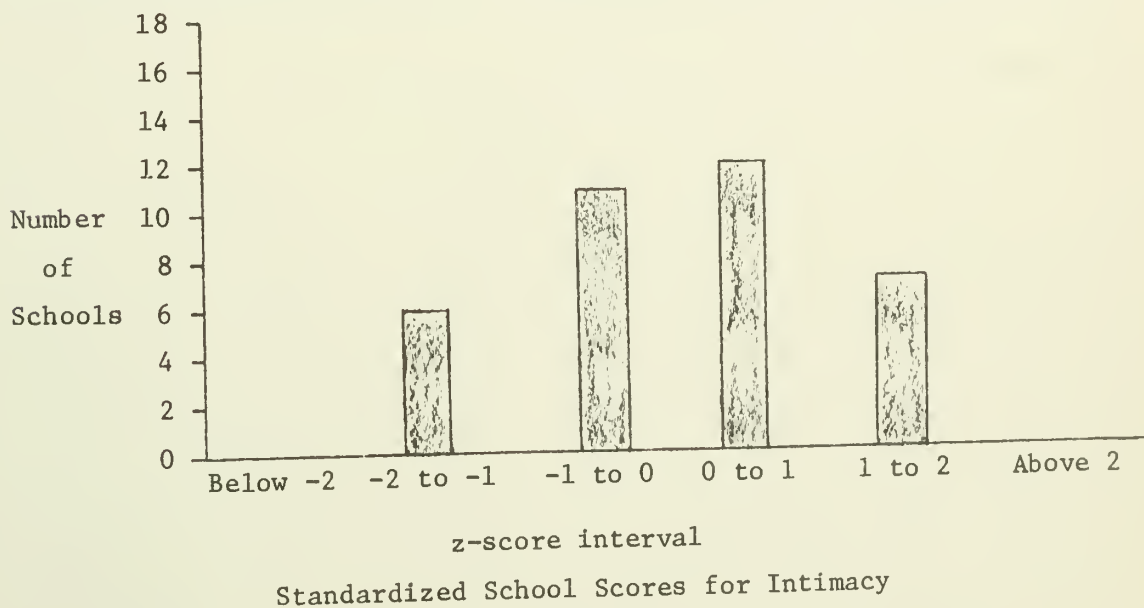
DISTRIBUTION OF STANDARDIZED SCHOOL SCORES
FOR THE TEACHER VARIABLE OF HINDRANCE



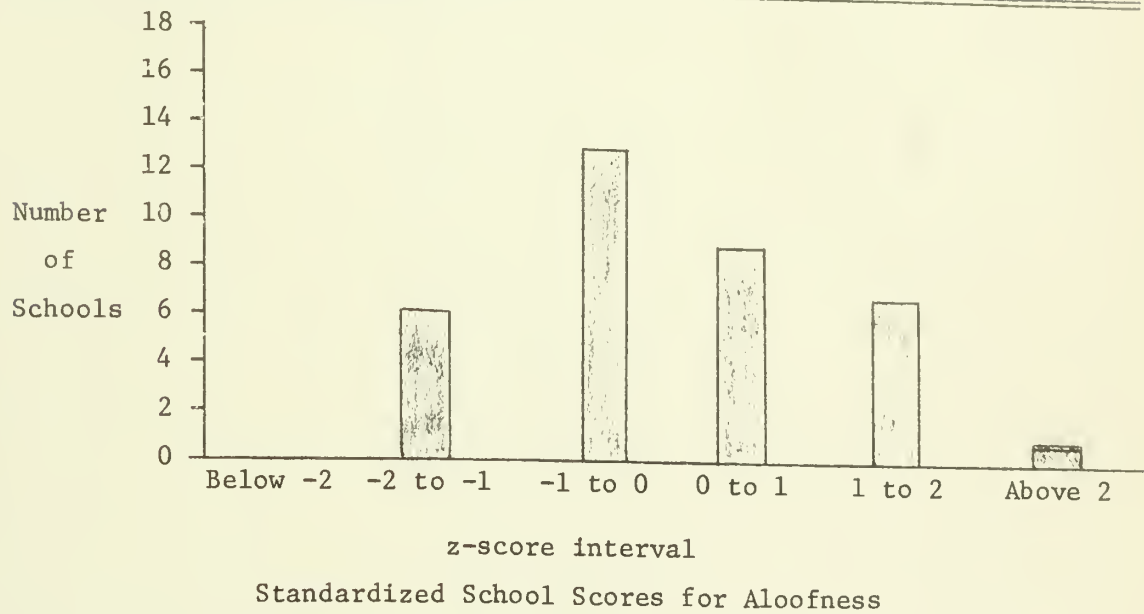
DISTRIBUTION OF STANDARDIZED SCHOOL SCORES
FOR THE TEACHER VARIABLE OF ESPRIT



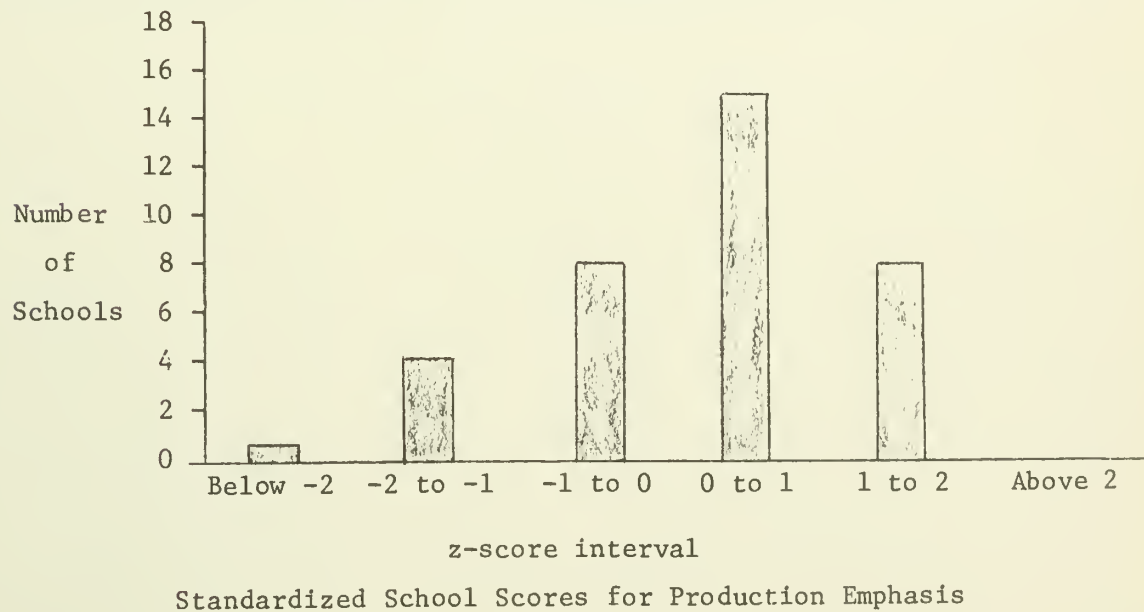
DISTRIBUTION OF STANDARDIZED SCHOOL SCORES
FOR THE TEACHER VARIABLE OF INTIMACY



DISTRIBUTION OF STANDARDIZED SCHOOL SCORES
FOR THE PRINCIPAL VARIABLE OF ALOOFNESS



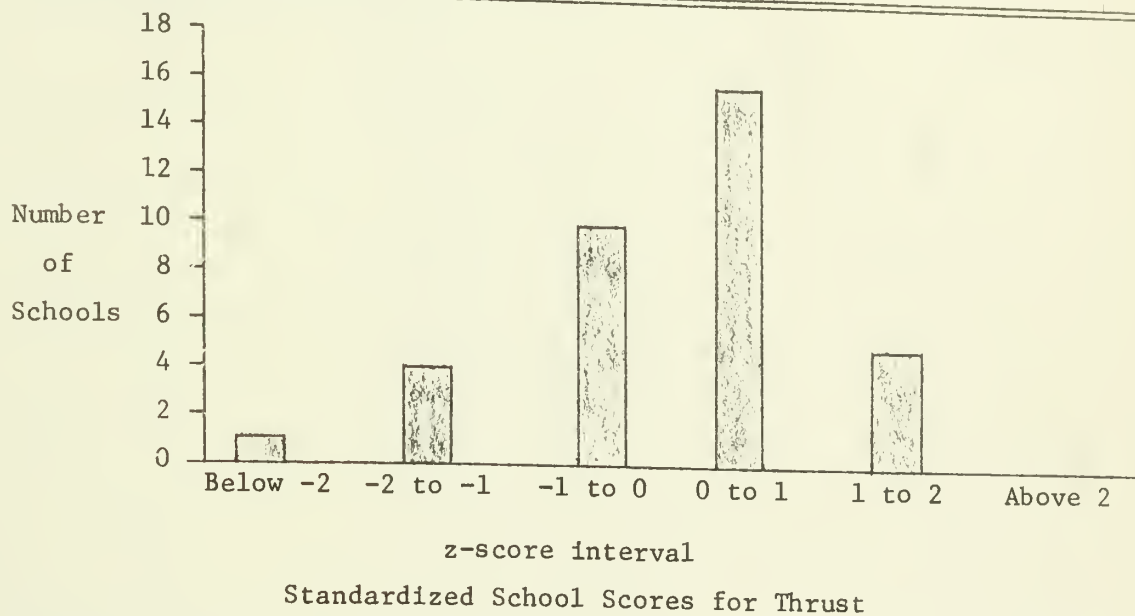
DISTRIBUTION OF STANDARDIZED SCHOOL SCORES
FOR THE PRINCIPAL VARIABLE OF PRODUCTION EMPHASIS



APPENDIX J

CORRELATION MATRIX FOR EDUCATIONAL ENVIRONMENT
VARIABLES, TEACHER-PRINCIPAL INTERACTION
VARIABLES, AND DEMOGRAPHIC FEATURES

DISTRIBUTION OF STANDARDIZED SCHOOL SCORES
FOR THE PRINCIPAL VARIABLE OF THRUST



DISTRIBUTION OF STANDARDIZED SCHOOL SCORES
FOR THE PRINCIPAL VARIABLE OF CONSIDERATION

