ABSTRACT

SYSTEMIC INTERPRETATION OF AN ANALYSIS OF THE RELATIONSHIP BETWEEN ACADEMIC CLIMATE VARIABLES AND ACHIEVEMENT IN PREDOMINANTLY BLACK ELEMENTARY SCHOOLS

By

Charles H. Beady, Jr.

This study was developed from what many perceive to be a need for establishing a data base that is specifically representative of populations of black Americans, a data base from which inferences can be made to facilitate the development of counseling models that will be effective in use with these populations.

The primary purpose of this study was to determine if an analysis of the relationship of academic climate variables to academic achievement in predominantly black elementary schools would support a major premise advanced by the proponents of the systemic approach to counseling. Proponents of systemic counseling view the cause of most mental health problems as originating within social systems as opposed to originating within the client. The premise advanced states that the social-psychological climate that prevails in a given social system is the primary cause of certain behaviors exhibited by that system's members.

Support for this premise was sought through the testing of the hypothesis which stated that the measures of school academic climate used in this study would significantly account for variance over and above that accounted for by measures of mean school socio-economic status (SES). SES is a crucial element in the hypothesis because of the commonly voiced notion that the effects of school environments are inseparable from the effects of SES.

Since the study was correlational, causal inferences could not be made concerning the findings. Thus, support for the premise stated above was determined by the direction of the findings. This means that if the findings of this study should not support the hypothesis advanced, a reconsideration of the hypothesis and/or the premise stated above would be in order. If the hypothesis should be supported, the implications of the correlations could be discussed, through causal inferences could not be made.

The units of analysis were 30 elementary schools having student body populations of greater than 50% black. These schools were randomly sampled from a population of 221 Michigan elementary schools, which comprise the state's total population of elementary schools having predominantly black student bodies.

The instruments used were revised versions of separate but interrelated teacher, student, and principal questionnaires developed by Brookover, Gigliotti, Henderson, and Schneider, (1973). The questionnaires were designed to measure different aspects of academic climate, based primarily upon student, teacher and principal perceptions. The mean responses of 4,747 students, 143 teachers, and 30 principals were analyzed in this study. Achievement data were provided by Research, Evaluation and Assessment Services, Michigan Department of Education. SES data were gathered from both students and principals and were coded using a modified version of the Duncan Socio-Economic Index scale (Reiss, Duncan, Hatt, & North, 1961).

The data were collected by black and/or integrated research teams consisting of individuals who had been trained to administer the questionnaires.

The academic climate variables used in this study were developed from factor analyses of data generated from a study by Brookover (1975) using the same instruments as those used in this study. The sample from which Brookover's data were collected consisted of 69 randomly sampled Michigan elementary schools, including seven schools that had predominantly black student bodies.

The data were analyzed using forward inclusion multiple regression. An a priori alpha level was set at .05. The hypothesis tested was supported when SES and academic climate variables were entered into multiple regression equations in varying orders. Three of the 14 academic climate variables entered into the regression equations significantly accounted for variance over and above that accounted for by SES. However, SES did not significantly account for variance over and above that accounted for by academic climate variables. SES accounted for 37.5% of the variance when it was entered into the regression equation first. An additional 31.1% of the variance was accounted for by entering the academic climate variables into the equation after SES. The academic climate variables accounted for 59.1% of the variance when they were entered into the regression equation before SES. SES did not significantly account for variance beyond that accounted for by academic climate variables.

The academic climate variable, student reported sense of futility, was identified as the single independent variable which accounted for most of the variance among the achievement levels of the schools in the sample. This variable was a measure of the students' perception of their ability to control or influence

the "system" around them, particularly those aspects of the school system which influence achievement. A coeficient of -.71 was obtained when student reported sense of futility was correlated with achievement. This variable alone was responsible for 85% of the total variance significantly accounted for by academic climate variables and SES, where academic climate variables were entered into the regression equation first and SES entered last. Thus, the evidence from the study supported the hypothesis advanced. The evidence further indicates that student reported sense of futility may have the single most important effect on achievement of all the independent variables considered in the study.

The analysis of the relationship between academic climate variables and achievement in predominantly black schools supported the following conclusions:

1. Student sense of futility, teacher perception of student drive for academic improvement, and teacher-principal efforts at improving achievement may significantly affect mean school achievement in Michigan's predominantly black elementary schools, regardless of the mean socio-economic status in these schools.

2. Student sense of futility may have the most significant impact of all the aspects of academic climate measured in the study, upon mean school achievement in Michigan's predominantly black elementary schools.
3. Changes in the mean socio-economic status (e.g., by busing) of Michigan's predominantly black elementary schools may not effectively improve achievement without concomitant changes in academic climate.
4. Since it is assumed that mean school socio-economic status cannot be as readily effected as changes in academic climate, it was concluded that improvement in the achievement levels of Michigan's predominantly black elementary schools may be most readily effected by changes in academic climate.
5. The social-psychological climate of a given social system may be the primary cause of certain behaviors exhibited by that system's members. This conclusion is congruent with a systemic interpretation of the results of the study.

The most salient implication derived from the preceding conclusions is that educators, counselors, and others in related fields should not look exclusively to the individual for the purpose of determining the cause of that individual's so-called "deviant" behaviors, and instead focus attention on the effects that social system "behavior" may have on individual behavior.

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By

Charles H. Beady, Jr.

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DEDICATION

To my wife, Maxine, for the continued love, support, understanding, and encouragement she has always given, and in memory of her mother, Starlight. Also, to my parents, Mr. and Mrs. Charles H. Beady, Sr., for all that they have done for me.

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Chapter I

STATEMENT OF THE PROBLEM

Need for the Study

Presently, there exist a number of theories and varying approaches to counseling, but few address themselves to the black experience. The few that do usually depict blacks in an unfavorable light (Gunnings, 1971). Traditionally, counselors have given little attention to the mental health needs of black Americans. In the spirit of Ralph Ellison's Invisible Man (Ellison, 1952), counselors have failed to make an objective assessment of cultural differences and the extent to which these differences warrant the formulation of new counseling models that will be effective tools for confronting the problems that affect the lives and mental health of black Americans.

The prevailing assumption has been that one simply could transfer counseling techniques from one culture to another. Bell (1971) pointed out that this notion is geared for failure. He stated that the black psychologist who practices traditional counseling methods often is shocked to find that his black clients

perceive him as being an "Oreo cookie" (black on the outside, and white on the inside).

The literature contains a plethora of articles written by black counselors and psychologists (Bell, 1971; Franklin, 1971; Gunnings, 1971; Mosby, 1972; Thomas, 1972; White, 1972; Williams & Kirkland, 1971) illuminating the need for formulating and seeking empirical support for psychological theories and models that will serve, not subjugate, black people in America.

Theories and models that accurately represent the black experience are essential to the formulation of effective solutions to problems that come to bear on black Americans. Traditional counseling models have been ineffective in this respect (Williams & Kirkland, 1971). The need for the research with which this study is concerned lies at the heart of what White (1972) had to say about the ineffectiveness of traditional theories.

> It is very difficult, if not impossible, to understand the life styles of black people using traditional theories developed by white psychologists to explain white people. Moreover, when these traditional theories are applied to the lives of black folks many incorrect, weakness-dominated, and inferiority-oriented conclusions come about. (p. 43)

Again, the field of counseling needs theories and models, and empirical support for models and theories that can serve black clients effectively. This project is an effort in that direction.

Purpose of the Study

Each year, disproportionate numbers of black students in this nation's schools continue to score well below national norms on standardized assessment instruments.

Counselors traditionally have asked "What is wrong with them?"--a posture that automatically places the onus of the problem upon the student. However, noted thinkers in the fields of counseling and psychology (Gunnings & Simpkins, 1972; Banks & Martens, 1973; Stubbins, 1970) have suggested that counselors who continue to ask this question are in effect, blaming the "victim" for the cause of the problem.

This new type of thinking has serious implications insofar as the fields of counseling and psychology are concerned. It suggests the possibility of alternative frameworks for assessing and moving toward eliminating the problems that millions of Americans, particularly urban residents, face daily.

As a result of the insight he has gathered in terms of the mental conditions of oppressed people in the United States, Gunnings (1973) has formulated what many feel to be an effective alternative for assessing and moving toward the elimination of these problems and the symptoms they produce, including

such symptoms as substandard achievement in the urban classroom. This approach is called "systemic counseling."

Proponents of the systemic approach to counseling argue that the prevailing climate of a given social system is the primary cause of behavior exhibited by that system's members, including those members whose status in the system--by virtue of age, race, socio-economic status, sex, and the like--renders them virtually powerless to affect that climate.

The purpose of this study is to determine whether or not an analysis of the correlations between system climate and achievement in predominantly black elementary schools yields results which are congruent with the preceding tenet.

Theory

In addition to counseling those individuals whose mental health is jeopardized by the climate maintained by a social system, the systemic approach to counseling suggests that social systems and subsystems should be "counseled" to change the prevailing climate.

Appelbaum (1970) discussed the major theories of social change. He concluded that these theories become relatively useless as one consults them in order to identify factors that may be manipulated to validate the theories or facilitate change.

Writing about the need for good, comprehensive theories of social change, and recognizing the inadequacies of existing theories of social change, Bennis and Peter (1966) have suggested the use of specially trained behavioral scientists as change agents. Their purpose would be to facilitate desired social change.

Several years later, Gunnings (1971) stated that the United States social system is the cause of many of the mental health problems that millions of Americans face. He suggested that counseling programs begin to train counselors as change agents.

Bennis and Peter (1966), and Gunnings and Simpkins (1972) see the change agent as necessary for bringing about social change. Unlike Gunnings, however, Bennis and Peter do not present undesirable social system characteristics as the reasons behind certain behavior. One can conclude, therefore, that although the function of the change agent is similarly intended, the purpose differs.

While Bennis and Peter emphasize the change agent's role as bringing about desired social change, Gunnings (1971) links social change to mental health. In his view, the process of systemic intervention involves bringing about desired social change by challenging and rectifying those inequities in the system that impinge upon the mental health of millions of oppressed Americans.

One finds, therefore, that the relationship between social change and mental health becomes crucial to the purpose of the systemic change agent.

Thoughts on social change and on changing systems are by no means a new occurrence. In the 19th century, for instance, Charles Darwin provided many of the analogies that social scientists needed for thinking about social change. Notions of evolution still dominate most theories of social change (Appelbaum, 1970). It was probably the volatile 1960's, however, that fostered the current emphasis on the need for social change.

In the early 1970's, the systemic philosophy was introduced. Concurrently, there appeared in the literature numerous articles addressing the types of issues that generally support the systemic approach to counseling as a viable alternative to more traditional approaches. Banks (1972), for instance, viewed the behavior that blacks were exhibiting, as they rioted and denounced the system, as normal, rational, and predictable responses to the behavior that social systems exhibited toward them. Sikes (1971) asked, "Can counseling psychology give some attention to our national illness" (p. 103)? Franklin (1971) questioned the direction of the counseling process where the counselor assumes that the client must learn to cope

with the world and disregards the inequities that the system has perpetrated upon the client. These writers and others (Williams & Kirkland, 1971; Bell, 1971; Lewis & Lewis, 1974; Dworkin & Dworkin, 1971; Caplan & Nelson, 1973) have called for a re-evaluation of the counselor's role and a reordering of the counseling process.

The systemic philosophy seeks to reorder the counseling process by placing a new emphasis on problem definition. In the past, counselors have sought the cause of the problem as residing within the client. The systemic philosophy maintains that, for the most part, the cause of the problem is external to the individual--residing within the climates of the systems or subsystems that prevail over the client. Thus, the counselor who is attending to the behavior of the client is merely treating a symptom that is the result of the problem. This is not to say that counselors should not consider the behaviors exhibited by their clients. This is to say, however, that (a) as long as causes remain unchecked, symptoms will continue to exist, and (b) how a problem is defined will determine how the solution to that problem will be pursued. If the location of the problem is incorrectly traced, the solution to the problem will be evasive. Caplan and Nelson (1973) have written:

> The way a social problem is defined determines the attempts at remediation--or even whether such attempts will be made--by suggesting both the 'foci' and the techniques of intervention and by ruling out alternative possibilities. More specifically, problem definition determines the change strategy, the selection of a social action delivery system and the criteria for evaluation. (p. 200)

If social systems are responsible for the symptoms that many clients bring to the counselor, then the preceding position more than justifies the need for new direction in the counseling process. Given the far-reaching implications of the systemic philosophy, its assumptions certainly warrant testing.

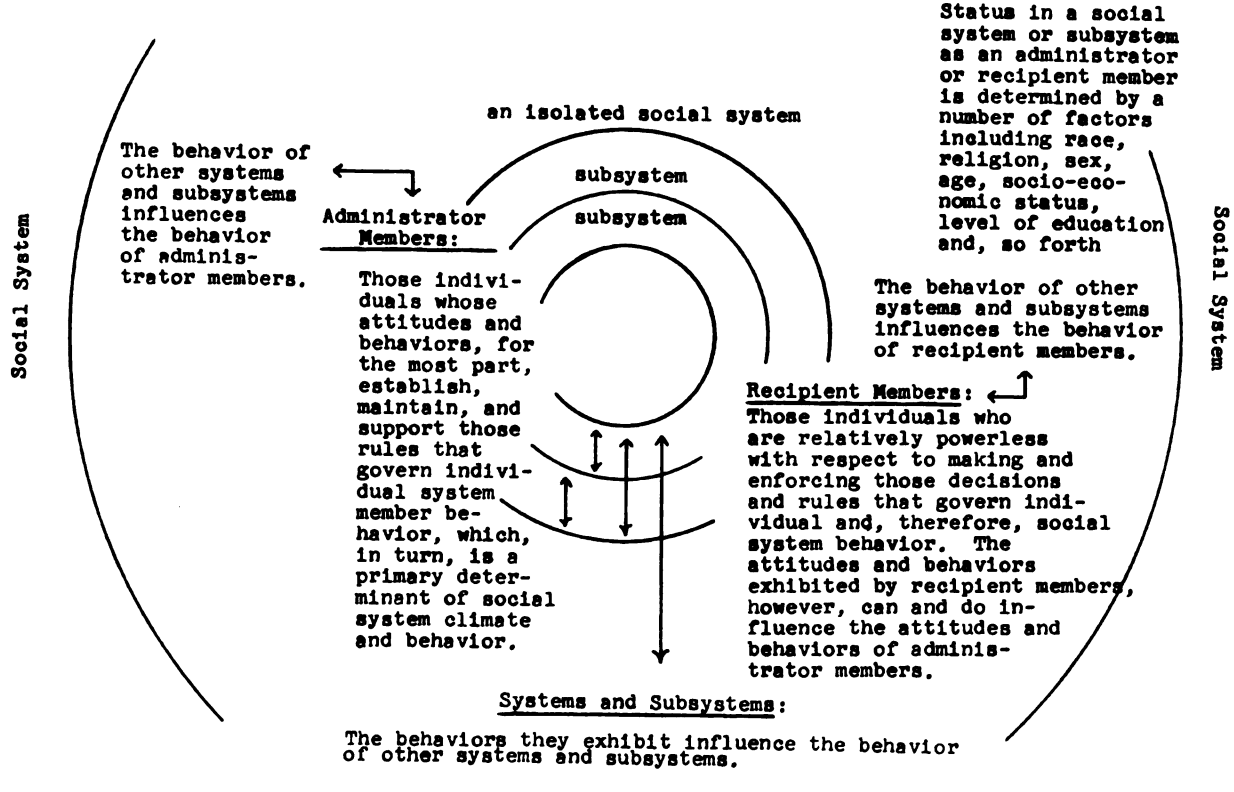
Reaction to the introduction of the systemic approach to counseling has ranged from skepticism to unqualified acceptance. The former reaction is usually generated by a lack of understanding of what is meant by "counseling the system."

Counseling the system involves formulating and implementing strategies designed to facilitate change in system behavior. There are no clear-cut abc's of strategy formulation because the formulation and implementation of strategy are dictated by the nature of the problem. The major undercurrent that guides and determines the "systemicness" of a strategy, however, is that the proponents of the systemic approach to counseling view the causation of the problem as residing within the system, and not the client. A

A clear and concise understanding of this notion is essential to obtaining a comprehensive grasp of the purpose and intent of systemic intervention. Likewise, an understanding of the process of systemic intervention is better facilitated through a working knowledge of the process and the components that determine social system behavior. The model presented in Figure 1.1 was developed by the writer as a graphic representation of this process and its determining components. The model illustrates the behavioral relationships that exist among social systems, subsystems, and the groups that constitute their population membership.

Figure 1.1

Model of the Process of Social System Behavior



Any group of interacting individuals may be said to constitute a social system if two major criteria are met. First, interaction is structured by social system members' perceptions of roles, status, and positions. Secondly, interaction is mediated by a defined set of rules, goals, and purposes.

A social system usually contains subsystems. As one examines the characteristics of a social subsystem, one finds that a social subsystem must meet the same criteria regarding individual interaction as does a social system. The major difference between the two rests in the determination of at what level the unit under analysis is to be studied. A social subsystem is, then, an infrastructure--one of the component parts whose interaction with other subsystems, together with their individual members, comprise the larger social system. If, for instance, one is considering achievement in a given elementary school, the school may be studied as a social system. If, on the other hand, one is considering achievement in a school district, the same school may be treated as a social subsystem.

Perhaps the most crucial point the model is intended to illustrate is that individual interaction is the primary component in the determination of social system and subsystem behavior.

The interacting individual members of social systems and subsystems may be conceptualized as constituting two groups--administrator members and recipient members. Membership in either group is determined by a number of factors including race, religion, sex, age, socio-economic status, level of education, and so forth. Administrator members of a social system are those members whose perceptions, attitudes, and behaviors, for the most part, establish, support, and maintain the climate that prevails in the social system. Administrator members make and enforce rules through utilizing the varying levels of power that are inherent in the roles, status, and positions they assume. Recipient members of a social system are those individuals who are relatively powerless with respect to making and enforcing the rules that govern individual, and therefore, social system behavior. The perceptions, attitudes, and behaviors exhibited by recipient social system members, however, can and do influence the perceptions, attitudes, and behaviors exhibited by administrator members. The degree of this influence is determined by the same kinds of factors that determine group membership. Again, these factors include race, religion, sex, age, socio-economic status, level of education, and so forth.

While an individual member of a social system or

subsystem will belong to either one group or the other, that individual will, almost without exception, simultaneously belong to a number of other social systems and subsystems. Moreover, the individual's status as a recipient member in one system may change to that of administrator member in another, and vice versa. A teacher, for instance, who is taking evening classes may be perceived as an administrator member while teaching in her classroom "social system." On the other hand, she may be perceived as a recipient member in the classes she is taking as an evening student. In her role as teacher, she makes and enforces many of the rules that, in part, determine the climate (i.e., academic climate) in her classroom. In her role as student, she abides by the rules that determine classroom climate, and has relatively little input into determining what those rules are.

As one grasps the nature and process of the behavioral relationships that exist among social systems, subsystems, and their individual members, it becomes apparent that the process of systemic intervention--system counseling--involves formulating strategies that will utilize these relationships to the client's benefit. Since recipient members and administrator members are identified as the primary determinants of social system behavior, either or both will likely

become the central focus of any strategy formulation.

While the process of systemic intervention is conducive to a holistic approach to changing social system behavior, it is not restricted to this macro level. The relationships among system members and among systems and subsystems can be even more conducive to intervention at a micro level. Any given problem, for instance, may dictate that the systemic counselor need not view the total United States social structure as the most appropriate "system" for which to develop modification strategies. A crucial point to be understood when discussing the process of systemic intervention is that social systems, subsystems, and the primary determinants of their behavior are interrelated, and that change in one will or can have substantial effect on the other.

A number of writers from a variety of educational backgrounds have addressed social issues and concerns in ways that substantiate the existence of reciprocal behavioral relationships among social systems, subsystems, and their individual members. Addressing the status of elementary school youngsters as recipients of praise and reproof, Jackson (1968) wrote:

> School is also a place in which the division between the weak and the powerful is clearly drawn....Teachers are indeed more powerful than students in the sense of having greater

> responsibility for giving shape to classroom events, and this sharp difference in authority is another feature of school life with which students must learn to deal. (p. 10)

Green (1974) saw the problems that plague urban schools as closely tied to the problems that plague the larger urban society. He suggested that teachers and administrators must do more than educate. They must, he suggested, crusade against the problems that prevail in urban America if the quality of education in the cities is to be improved. Banning (1974) suggested that in establishing effective educational programs, a mutually dependent partnership should exist between the student and his environment. Schoenauer (1972) wrote:

> The process of a system leads to the realization that the system under analysis is actually composed of many subsystems, the output of one such subsystem becoming an input to a subsequent subsystem. (p. 484)

These writers have clearly illustrated their commitment to the belief that a social system, its subsystems, and system members can and do influence one another's behavior.

Discussing social change vis-a-vis educational reform, Levin (1974) took the behavioral relationships that were illustrated in the system behavior model (page 10) to their logical conclusion. He suggested that the behavior of the American educational system

for the most part is determined by the climate that prevails in the total U.S. social structure. In this regard he wrote: "In short, only when there is a demand for educational reform by the polity will educational reform succeed" (p. 316).

Levin's argument is supported by Knowles and Prewitt's (1969) perceptions of a changing national attitude toward the role that this nation's institutions have played in propagating racism. His argument is further supported by William Ryan's (1971) victim-blaming model. What is implied in these works is that contradictions constantly being pointed out in the American system of democracy are becoming so apparent that the system finds itself in the precarious position of having to "put up" in order to keep from "shutting up."

One could, therefore, argue that because of this shift in the national climate, blacks and others who have suffered social injustices have made social gains that were all but impossible prior to the last decade. By following Levin's argument as it flows consistently with the behavioral relationships outlined in the system behavior model, it subsequently becomes apparent that continued social change in the United States will have to involve commitments from all sectors of the total society. An additional purpose of the systemic approach to counseling is to facilitate these commitments, for they are necessary to bring about the types of social

changes that are conducive to the positive mental health of all the system's members.

Definition of Terms

Although many of the following terms have been defined previously, their definitions are presented again, in this section, for the convenience of the reader.

Social System: Any group of interacting individuals may be said to constitute a social system if two major criteria are met. First, interaction is structured by social system members' perceptions of roles, status, and positions. Secondly, interaction is mediated by a defined set of rules, goals, and purposes.

Social Subsystem: A social subsystem must meet the same criteria regarding individual interaction as does a social system. The major difference between the two rests in the determination as to what level the unit under analysis will be studied. A social subsystem is, then, an infrastructure--one of the component parts whose interactions with other subsystems together with their individual members, comprise the larger social system.

The System: This term refers to the total United States social structure, including its social systems, subsystems, and individual members.

Academic Climate Variables: A set of social-psychological factors that reflect those norms, expectations, attitudes, and behaviors exhibited by teachers, principals, and students that are thought to account significantly for variance in achievement among schools.

Academic Climate: The interaction of those norms, expectations, attitudes, and behaviors exhibited by principals, teachers, and students that are thought to have a significant mediating impact upon student achievement.

Social System Climate: The interaction of those norms, expectations, attitudes, and behaviors exhibited by social system members that are thought to influence other attitudes and behaviors exhibited by social system members.

Social System Behavior: The resulting consequence of the interaction of certain norms, expectations, attitudes, and behaviors exhibited by social system members.

Administrator Members (of a social system): Those individuals whose attitudes and behaviors, for the most part, establish, maintain, and support those rules that govern individual system member behavior, which, in turn, is a primary determinant of social system climate and behavior.

Recipient Members (of a social system): Those individuals who are relatively powerless with respect to making and

enforcing those decisions and rules that govern individual and, therefore, social system behavior.

Systemic Counseling: An approach to counseling in which the cause of non-organic mental health problems is viewed as originating within social systems as opposed to originating within the client.

Testable Hypothesis

The following hypothesis was tested during this investigation: Measures of academic climate will significantly account for differences in achievement levels among predominantly black elementary schools, over and above variance accounted for by socio-economic status.

An additional question that was also investigated is: Which of the academic climate variables account for most of the variance in achievement levels among predominantly black elementary schools?

Overview

The need and purpose of this present research, along with the hypothesis and an additional question of interest to the study, have been presented in Chapter I. In Chapter II, a review of the literature pertinent to the study has been presented. Presented in Chapter III are descriptions of the population and sample, along with descriptions of the procedure, methodology, and decision

model used in gathering and analyzing the data. Chapter IV contains analyses of the data generated by the study, followed by a discussion of the results. Chapter V contains a summary of the study. Also in this chapter, limitations of the study and implications of the findings are discussed, followed by the conclusions drawn. The final section of Chapter V contains a list of recommended uses for the findings of the study.

Chapter II

RELATED LITERATURE

Overview

While the systemic approach to counseling was introduced in the early 1970's, almost no studies exist to confirm or refute its tenets. The literature, however, contains books, articles, and research efforts related to many of the issues in which the major premises of the systemic philosophy are deeply rooted.

This study will involve an attempt to determine if an analysis of the relationship between academic climate and achievement in predominantly black elementary schools is congruent with the supposition that the prevailing climate of a given social system is the primary cause of certain behaviors exhibited by its members. This supposition is a major premise of the philosophy that underlies the systemic approach to counseling. This chapter will examine literature dealing with systemic and school climate research, system behavior literature and urban counselor training literature.

In the first section, previous research on systemic counseling and on elementary school climate

will be reviewed. There is a paucity of research in both areas. As previously mentioned, almost no research exists that attempts to test the systemic approach to counseling or the tenets inherent in its philosophy. Only a few researchers have endeavored to study school climate as it relates to achievement. Braithwaite (1974) advocated a systemic interpretation of the data generated by a study he undertook. Gamble (1973) compared systemic counseling techniques versus traditional counseling techniques. These two studies will be discussed.

Two studies--Coleman, Campbell, Hobson, McPartland, Mood, Weinfield, and York (1966), and Brookover, Gigliotti, Henderson and Schneider (1973), have had a profound impact upon the elementary school climate literature. Therefore, these two studies will constitute the central focus of this first section.

The second section is concerned primarily with what counselors, psychologists, educators, and others in related fields have said about the impact that the United States social system and its subsystems have had on the behavior of its members. This section represents a sample of some of the issues that are inherently related to the systemic philosophy--issues that have been documented by professionals from a variety of backgrounds.

Finally, the third section focuses primarily on what has been written about training urban counselors. Black counselors and psychologists perhaps have had the loudest voice in criticizing traditional counseling programs for their lack of sensitivity to the needs of black Americans. Their criticisms will be examined and discussed along with the views of others on the need for reorienting the traditional counseling process.

Systemic Counseling And School Climate Research

In a study involving self-disclosure differences between black and white inmates in a federal prison, Braithwaite (1974) reported that both black and white inmates disclosed most about themselves to their "closest inmate friend." Braithwaite suggested that this finding has implications for the hiring practices that many correctional institutions presently maintain. These implications led him to advocate a systemic interpretation of his data. Braithwaite wrote:

> The most significant identifiable variable stifling the psychological well-being of minority inmates is undoubtedly the lack of Black and minority personnel at all levels. Affirmative action efforts aimed at recruitment of minority personnel are mandatory if minority inmates are to survive and return to society with rejuvenated role models. (p.94)

Also, as a result of another study involving

incarcerated inmates Braithwaite (1973) recommended that systemic intervention would probably play a significant role in increasing the amount of self-disclosure that an inmate is willing to maintain with a counselor.

Gamble (1973) tested for the effects that systemic counseling techniques (vs. traditional counseling techniques) would have on a group of black college freshmen. He found no significant differences between the effects of the independent variables (traditional counseling techniques and systemic counseling techniques) on the dependent measures (grade point average and credits earned). Considering the time factor involved (10 weeks), the strategies that Gamble employed would have needed to be more intense and comprehensive to have approached the types of changes suggested by his major hypothesis (differences in gradepoint average).

Although Gamble's study is presently the only one that poses an intended direct test of the systemic approach to counseling, other studies exist that address some of the issues that tend to support the systemic approach to counseling as an effective alternative to more traditional approaches. Perhaps the best known study that addresses one such issue is the "Coleman Report" (Coleman et al., 1966). The basic issue of the Coleman study is one that impacts heavily

upon the central premise of the systemic philosophy. It concerns the defining of variables to which variation in academic achievement among elementary schools can be attributed. The systemic philosophy argues that individual behavior (including academic behavior) is mediated to a large extent by the behavior of the social systems in which the individual functions.

James Coleman's work has contributed significantly to wide acceptance of the notion that socio-economic status (SES) accounts for the greatest portion of variance in achievement among schools. He contends, however, that the achievement levels among schools are also affected to a small degree by the differences in schools. These differences include factors such as curriculum, physical facilities, and teacher differences. Coleman suggested that school differences affect minority students more than they affect white students. That is, achievement levels among minority students depend more on the schools they attend than do achievement levels among white students.

Though there is no argument with respect to the direction of Coleman's findings, a study by Brookover et al. (1973) suggests that Coleman did not pursue the question of school differences as they relate to achievement. According to Brookover, Coleman failed to make a comprehensive analysis of the relationship

of social-psychological factors to achievement. Brookover's data suggest that the high correlations maintained by SES with respect to achievement may be due to the fact that SES and certain social-psychological factors that exist among schools are highly related. In that same study of academic climate in elementary schools, Brookover identified low SES schools with high mean achievement levels, and high SES schools with low mean achievement levels. Identification of these schools alone suggests that something other than SES may be the causal factor in mean achievement level differences for these schools.

Brookover hypothesized that measures of academic climate would account for variance in mean school achievement, over and above variance accounted for by SES. His data showed four climate variables accounting for over 63% of the variance in achievement among the schools in the sample when the effects of SES, race, and urban-rural community type were controlled. These variables were: (a) student sense of futility, (b) teacher future evaluations-expectations, (c) teacher reported push of individual students, and (d) student present evaluations-expectations.

In reviewing the literature on school climate Boocock (1966) reported that:

> On the level of the whole school. . .the research evidence indicates that certain

> types of environments, namely those in which intellectualism and academic achievement are positively valued, are productive of learning. The trick here is to understand just what combination of individual and system characteristics produce various intellectual climates. . . .(p. 41)

Brookover's study seems to have been a step in that direction. The identification of academic climate variables and the correlations between these variables and the achievement level of the schools in the sample suggest that high- and low-achieving schools differ with respect to the academic climates that they maintain. These findings have great significance for the systemic philosophy.

Coleman's conclusions do not contradict the notion espoused by the proponents of the systemic approach to counseling, being that, system behavior mediates the behavior exhibited by system members. If Brookover's conclusions are representative, however, then they have greater significance for the systemic philosophy, because the data identify a set of variables that may be used to improve the achievement of low-achieving youngsters. However, Brookover's findings warrant caution in generalizing beyond the sample because of statistical limitations and the sampling procedure used. Also, research concerning school climate has been rather neglected (Boocock, 1966; Brookover et al. (1973). Recently, however, researchers seem to be

giving more attention to the area. Several studies (Summers & Wolfe, 1975; Gies, Leonard, et al., 1973; Michigan Department of Education, 1975) tend to support Brookover's conclusions that school climate may play a significant role in determining achievement levels among schools.

Henderson (1972), comparing academic climate variables in black and white elementary schools, found significant differences in the climates that black and white elementary schools maintain. These findings are consistent with those of Brookover et al. (1973), and Coleman et al. (1966). That the academic climate in predominantly black schools would differ from that of white schools is consistent with the notion advanced by the proponents of the systemic approach to counseling, i.e., that there are culturally unique factors that must, of necessity, be considered in the formulation and use of counseling theories and procedures with black and other minority clients. This supposition is also consistent with Brookover's, Coleman's and Henderson's conclusions that black youngsters sense less control.

There appears to be agreement among the major research efforts on school climate that black youngsters suffer a greater sense of futility than do whites. Analyses of the data generated by the Coleman study (Coleman et al., 1966; Mayeske, Wisler, Beaton, Weinfield,

Cohen, Okada, Proshek, and Tabler (1972), suggest that school differences cannot be separated from the variance accounted for by SES. On the other hand, Brookover's data suggest that academic climate variables may cause achievement variations among schools.

This apparent greater sense of futility on the part of black students, coupled with the differences in academic climate between black and white schools reported by Brookover et al. (1973) and Henderson (1972), as well as the conclusions drawn by the Coleman study certainly warrant additional investigation of the relationship between academic climate and achievement in predominantly black elementary schools. In reviewing the literature one finds that a comprehensive analysis of the relationship between academic climate and achievement focusing exclusively on a random sample of predominantly black elementary schools has not been undertaken. In addition to seeking support for the philosophy that underlies the systemic approach to counseling, this study represents an effort toward rectifying that situation.

Again, previous studies concerning the relationship of school climate to achievement have far-reaching implications insofar as the systemic approach to counseling is concerned. Inherent in such studies is the testing of the supposition that the behavior of a social system mediates the behavior of that system's members.

This is the major premise of the systemic philosophy. Also, the nature of such studies directly relates them to important social issues in which this supposition becomes a central focus. Some of these issues will be examined in the following sections.

System Behavior Literature

Traditionally, counselors have sought the cause of the problem as residing within the client. Brookover and Erickson (1975) pointed out that in school, for instance, undue emphasis frequently is placed upon the child who has failed to learn a particular skill, and not enough emphasis is placed upon the social system in which learning occurs or does not occur. The same notions hold true when one considers the negative perceptions that black people often have about whites. Preoccupation with placing the onus of the problem upon the client often has rendered counselors blind to the fact that these perceptions are simply rational and predictable responses to hostilities often perpetrated by whites (Banks, 1972).

As a result of a study he conducted on a group of black college students, Banks (1970) concluded that black attitudes toward the white majority are growing increasingly unfavorable. He attributed this to the system's unfair treatment of blacks. He suggested that

counselors with traditional orientations are going to have to modify their approaches to counseling black students if they hope to play an effective role in resolving the problems in which these changing attitudes are entangled.

It seems that whenever counselors have been faced with "deviant" behavior they have consistently turned to assessing the psychological characteristics of the individual (Brookover & Erickson, 1975). If, for instance, one youngster appears to excel in mathmatics and another appears to be slow, generally it is assumed that the faster learner is more intelligent than the slow learner. Brookover and Erickson (1975) point out, however, that even retarded Russians learn to speak Russian better than some of America's "bright" students who endeavor to learn the language. The point here, they contend, is not to devalue the role of the relationship of individual characteristics to the learning process, but rather to point out that the right social conditions have a great deal to do with what is learned.

Kozol (1967) presented an excellent documentation of the effect that social conditions can have on a group of individuals. He pointed out that social conditions in the Boston school system had a devastating impact on the mental health and general welfare of black youngsters in that system. In addition, prevailing social

conditions had a delimiting impact on teacher effectiveness and a debilitating effect on what few positive attitudes existed in teachers. Certainly, the impact that a teacher can have on learning has been well demonstrated (see Rosenthal & Jacobson, 1968).

Kozol concluded that a lack of humane consideration stifled the cognitive and affective development of the youngsters, and survival for the teachers was contingent upon maintaining silence. Essentially this meant maintaining the status quo.

Baker and Hansen (1972) indicated that institutional employees often are, in fact pressured by the institution to perpetuate and not oppose its views. In a study of school counselors, the researchers tested the validity of that hypothesis. Their data suggested that school counselors in practice and school counselors in training prefer to practice counseling techniques that adhere to the "traditional" counseling model. That is, they prefer to maintain a counseling relationship that does not require the counselor to take action on behalf of the client.

Morgan (1974) concurred with the conclusions of the Baker and Hansen study. He suggested that most counselors have chosen not to rock the educational boat, and are not encouraged by their employers to do otherwise.

The conclusions reached by Baker and Hansen and

those reached by Morgan are consistent with what numerous thinkers and writers have had to say about the role that America's social institutions have played in the continuing story of social inequity. Knowles and Prewitt (1969), for instance, have put into historical perspective the roles that most of our major social institutions--from the schoolhouse to the courthouse--have played in denying black and other non-white Americans many of the rights and privileges granted to the mainstream culture. Their comprehensive account of institutional racism shows that America's institutions have resisted and continue to resist the types of changes necessary to bring about social equality. Knowles and Prewitt conclude that white America is slowly realizing that the so-called "Negro problem" may in fact be a white problem.

Ryan (1971) found that conclusions drawn by white researchers such as Moynihan--that the plight of black people in the United States results from the pathology inherent in the black family--is an attempt to rationalize the inequities and injustices that the system has perpetrated upon this group. Ryan cites many glaring examples of white America's attempts to blame the victim for causation of the problem.

Those who practice victim-blaming, Ryan suggested, are not necessarily blatant racists bent on dedicating

their lives to notions of white supremacy. Often they are well meaning individuals who sincerely want to help the victims of social injustice, but they cannot bring themselves to attack the system that has been so good to them. The result, Ryan concluded, is a national strategy of victim-blaming. This strategy manifests itself in a multitude of "patch-them-up" programs formulated to help the "culturally disadvantaged" overcome their "deficiencies." These notions are reflected in the goals and practices of compensatory education programs, rehabilitation centers, half-way houses, mental health organizations, counseling programs, and so forth, that exist around the nation (Ryan, 1971).

The literature indicates that many issues addressed in this section of the review of literature are reflected in the perceived inadequate training received by most counselors who are currently working, or who intend to work, in the urban setting. The issues surrounding the training of urban counselors are the topic of the following section.

Urban Counselor Training Literature

An excellent example of victim-blaming is apparent in the labels that the system affixes to victims of its injustice. Labels such as "culturally deprived" and "culturally disadvantaged" imply not only a lack of

culture but also pathology on the part of those to whom they are affixed.

Those who use and perpetuate the use of such labels obviously are influenced by the Deficit and not the Difference model of Afro-American behavior (Valentine, 1971; Simpkins, Williams, & Gunnings, 1971). The blame-the-victim model is so pervasive and ingrained in this society that it almost takes a conscious effort to avoid slipping into that mode. Its widespread use is apparent even among blacks. Nevertheless, these labels imply that there is something pathological and inherently deficient about the behaviors that blacks exhibit. Their use is not only unwarranted but wholly inaccurate (Simpkins, Williams, & Gunnings, 1971; Vontress, 1969).

Proponents of the Difference model of Afro-American behavior maintain that behaviors exhibited by blacks are not deficient but simply culturally determined and different (Simpkins, Williams, & Gunnings, 1971; Williams & Kirkland, 1971; Stikes, 1972). They hasten to point out that the pathology often associated with the behavior of blacks generally can be attributed to inherent deficiencies in the system. They suggest that the persistent clinging of counselors to the Deficit model of black American behavior obviates the need for counselors to become familiar with the psychodynamics of the black culture.

Cognizance of and sensitivity to cultural differences are essential in establishing effective therapeutic relationships with black clients (Gunnings, 1971; Sikes, 1971; Bell, 1971; Franklin, 1971; Patterson, 1971; Williams & Kirkland, 1971; Mitchell, 1971; Vontress, 1970; Calia, 1966). Establishing an effective therapeutic relationship with black clients also requires obtaining a complete and thorough understanding of the pathology inherent in those relationships that white institutions heretofore have established with the black community (Sikes, 1972). Finally, establishing effective counseling relationships with blacks involves introducing counselors to models that are potentially helpful in resolving the problems that impinge upon the mental health of black Americans (Mitchell, 1971; Franklin, 1971; Gunnings, 1971). The literature indicates that traditional counseling programs have failed to prepare counselors on all three counts.

The literature addressing itself to preparation of counselors who can work effectively with blacks is not extensive; however, what has been said and written has wide-ranging implications insofar as counseling is concerned. Some serious charges have been levied concerning the responsiveness of the field to the needs of black Americans. In many cases, these charges concern nor just responsiveness, but the ability to respond.

Lending support to charges that traditional counseling programs are ineffective in preparing black counselors are a number of articles by white counselors and psychologists suggesting that counseling programs in general need to reassess and modify their traditional orientations. Some go so far as to suggest that the survival of the field is contingent upon the reassessment and modification of these orientations. Morgan (1974), for instance, suggested that if counselors refuse to become true helpers by taking action on behalf of the client, they may find themselves dysfunctional and obsolete. These writers are also beginning to offer alternatives to traditional counseling orientations.

Consistent with his belief that an unsatisfactory school setting is a causal factor in unsatisfactory school outcomes, Malcom (1974) offers a Center/Satellite model for educational change. Banning and Kaiser (1974) came to the same conclusion with respect to the environment's impact on individual behavior. In the same vein, Dworkin and Dworkin (1971) suggested that "many counselors have never considered that the anxieties and frustrations of people may be attributed to sick environments that thwart normal, healthy, creative development" (p. 479). Therefore, they are not helping but hindering the client who comes to them seeking a resolution to a problem. Lewis and Lewis (1974) suggested that counselors who are leaving their offices and taking action on behalf of

their clients are developing a deep and pervasive understanding of the system that may be the major source of the client's anxieties. They, therefore, have outlined a series of steps that they felt will help in the formulation of effective change strategies.

For many, notions of intervening in the behavior of social systems is a novel concept. Hornstein (1973), however, suggested that strategies and tactics of social intervention are being implemented daily. He suggested that change agents have made their presence felt for some time, but what they do has developed in atheoretical fashion. Dustin (1974) concurred with Hornstein about the relationship of change agents to social change. He suggested that "the necessary behavior for change agents is to define a linkage role for themselves with access to decision makers and to members of the system at lower levels" (p. 423). Following these notions, Hornstein suggested that students ought to be exposed to individuals who are identified as change agents for the purpose of relating what they do and how they do it to theoretical frameworks. He concluded that such exposure will help students become more efficient in their abilities to conceptualize and formulate intervention strategies.

The literature suggests that one of the most salient shortcomings of counseling programs, with respect to the preparation of black counselors, has been their

consistent failure to admit black students in any significant numbers (Mitchell, 1971; Gunnings, 1971). This posture automatically excludes the training of many counselors who are most sensitive to the black culture and most dedicated to rectifying the inequities that the system has perpetrated.

If one could say that accepting blacks into counseling programs in significant numbers was not an obstacle, then the problem would be lessened considerably. Instead, potential counseling students who happen to be black are faced with two more obstacles. Not only are good candidates screened out by admissions policies and practices, but those who are admitted are exposed to curricula that do not prepare them to function effectively in the urban setting (Sikes, 1971; Bell, 1971).

Gunnings (1971) pointed out that as far as admitting blacks into counseling programs is concerned, the old game of "tokens" appears to be in operation--one or two won't hurt. Gunnings suggested that admissions committees should be restructured so as to include a meaningful amount of black input into the admissions process. This, he suggested, would increase the chances of accepting the black student who is not an academic "superstar" but simply a potentially good urban counselor.

Another obstacle of concern for the black student, as well as the white student who is interested in or

intends to counsel in the urban setting, is the lack of theories, courses, and models that adequately reflect the black experience or the urban experience. The field desperately needs researchers and counselors who can help move the field toward a better understanding of the psychodynamics of being black and living in America.

In formulating and implementing programs that will train effective urban counselors, Franklin (1971)--like Gunnings and Simpkins (1972), Banks (1970), and others--suggested that the practice of placing the onus of the problem on the victim be thoroughly examined. In defining the role of the urban counselor, these writers suggest that among his other obligations to the client, he also must be an agent of social change, an activist, and an advocate. Franklin (1971) wrote:

> This broader definition means that the counselor does not act on the client alone but instead actively confronts those systems within the larger community which contributes significantly to the conditions of the client. (p. 109)

Opinions expressed in the literature suggest that an effective urban counselor will have to be cognizant of the role that the system plays in the mental health of urban residents. They suggest that his effectiveness often will be contingent upon the extent to which he is prepared to act on behalf of the client. They suggest that with adequate training the urban counselor will recognize the inadequacies in the educational

system rather than blaming the students.

Opinions expressed in the literature also suggest that proper training will produce urban counselors who are quick to recognize why many social service systems are geared to fail those who need them most. They suggest that effective programs will produce urban counselors who are quick to recognize that hundreds of murders a year in cities such as Detroit, Michigan, are not the problem but rather a symptom. Finally, the opinions expressed in the literature suggest that these are the types of counselors who must be produced if counseling is going to establish a meaningful relationship in the urban community.

CHAPTER III

METHODOLOGY, PROCEDURES, INSTRUMENTATION, AND DECISION MODEL

Overview

The major thrust of this study was to determine whether or not an analysis of the correlations between academic climate variables and achievement in predominantly black elementary schools is consistent, or inconsistent, with a major premise of the philosophy underlying the systemic approach to counseling. This premise states that the prevailing climate in a given social system is the primary cause of certain behaviors that are exhibited by that system's members. The "social systems" that were chosen as the units of analysis for this study were randomly sampled predominantly black elementary schools. Questionnaires designed to measure academic climate were completed by the principal, fourth and fifth grade teachers, and fourth and fifth grade students in each of the schools in the sample. Collection of data for a given school was contingent upon the willingness of district administrators and the school's principal to have their teachers and students participate in the

study. In this chapter the population and sample will be described, as well as the methods, procedures, and the decision model used in collecting and analyzing the data for this investigation.

Population

The population from which the sample that was investigated in this study was drawn consisted of 221 predominantly black elementary schools in the state of Michigan containing fourth and fifth grade units. Fourth grade units were chosen to be used in the study because each year the Michigan Department of Education administers an assessment battery to all fourth grade students in the State. Fifth grade units were included in order to increase the sample size per school and, therefore, increase the reliability of mean student responses. An additional reason for including fifth grade units was that achievement data were available at the beginning of this study for fifth grade students (who were fourth grade students during the previous year). These achievement data were utilized in the study to compute preliminary statistics. A predominantly black elementary school is defined as one having a student body composition of greater than 50% black. The population of schools in the State of Michigan having a greater than 50% black student body

composition was determined from data provided by the Research, Evaluation and Assessment Service of the Michigan Department of Education.

Sample

The initial sample from which data were to be collected consisted of 40 schools, randomly drawn from the population cited above. School numbers, along with the location of the schools they represent, and 1973-74 mean achievement are presented in Table 3.1. Principals were assured that their schools would not be identified by name. Therefore, numbers have been substituted for school names. The method by which

Table 3.1

Original Sample of Predominantly Black Schools

School	Location	Mean Achievement, 1973-74
101	Flint	45.8
102	Flint	45.0
103	Detroit	45.9
104	Detroit	44.9
105	Port Huron	60.5
106	Detroit	42.7
107	Detroit	62.9
108	Covert	52.4
109	Detroit	39.9
110	Detroit	46.8
111	Detroit	58.5
112	Detroit	44.1
113	Detroit	50.9
114	Detroit	57.6
115	Detroit	55.5
116	Detroit	50.7
117	Detroit	31.6
118	Detroit	60.3
119	Detroit	41.3
120	Flint	62.7
121	Grand Rapids	34.3
122	Benton Harbor	35.8
123	Flint	55.8
124	Buena Vista	67.9
125	Ypsilanti	45.6
126	Detroit	53.4
127	Detroit	47.6
128	Detroit	50.6
129	Detroit	46.8
130	Detroit	43.3
131	Detroit	83.9
132	Detroit	67.3
133	Detroit	55.1
134	Detroit	33.8
135	Detroit	43.3
136	Detroit	49.0
137	Detroit	44.8
138	Detroit	47.3
139	Detroit	32.5
140	Highland Park	73.7
	Overall Mean =	50.3

schools were selected, was simple random sampling. Each population member was assigned a unique number. The sample was then drawn through the use of a table of random digits. Each school was chosen in the order of the appearance of the number it was assigned in the table of random digits.

Ten schools were lost from the initial sample because of the unwillingness of administrators to have their schools participate in the study. These schools along with their location and 1973-74 mean achievement, are presented in Table 3.2. The fact ten schools were lost from the initial sample

Table 3.2

Schools Dropping Out of Original Sample of Predominantly Black Schools

School	Location	Mean Achievement, 1973-74
106	Detroit	42.7
107	Detroit	62.9
116	Detroit	50.7
119	Detroit	41.3
120	Flint	62.7
123	Flint	55.8
125	Ypsilanti	45.6
127	Detroit	47.6
134	Detroit	33.8
137	Detroit	44.8
	Overall Mean =	48.77

constituted a potential problem with respect to the representativeness of the final sample. With this in mind, the researcher executed a "t" test to determine whether or not the schools dropping out of the initial sample were statistically different from the final sample with respect to achievement. At alpha = .05, no significant difference was found between the schools. The null hypothesis--that there is no significant difference in the final sample--was not rejected. It was, therefore, not reasonable to conclude that the schools in the final sample came from a different population (with respect to achievement) than those dropping out of the initial sample. As a result of the sampling

procedures employed, as well as the geographic distribution of the schools in the final sample, it is reasonable to assume that the 30 schools in the final sample--13.7% of the state's population of predominantly black schools--are representative of the population from which the sample was drawn. The final sample of schools, their location, and 1973-74 mean achievement are presented in Table 3.3. The geographic

Table 3.3

Final Sample of Predominantly Black Schools

School	Location	Mean Achievement, 1973-74
101	Flint	45.8
102	Flint	45.0
103	Detroit	45.9
104	Detroit	44.9
105	Port Huron	60.5
108	Detroit	52.4
109	Detroit	39.9
110	Covert	46.8
111	Detroit	58.5
112	Detroit	44.1
113	Detroit	50.9
114	Detroit	57.6
115	Detroit	55.5
117	Detroit	31.6
118	Detroit	60.3
121	Grand Rapids	34.3
122	Benton Harbor	35.8
124	Buena Vista	67.9
126	Detroit	53.4
128	Detroit	50.6
129	Detroit	46.8
130	Detroit	43.3
131	Detroit	83.9
132	Detroit	67.3
133	Detroit	55.1
135	Detroit	43.3
136	Detroit	49.0
138	Detroit	47.3
139	Detroit	32.5
140	Highland Park	73.7
	Overall Mean =	50.8

location of each school in the final sample is represented in Figures 3.1 and 3.2. The list containing the population of schools from which the sample was drawn was obtained from the Research, Evaluation and Assessment Service of the Michigan Department of Education.

Figure 3.1

Geographic Distribution of Schools in the Final Sample, Exclusive of the Detroit Area

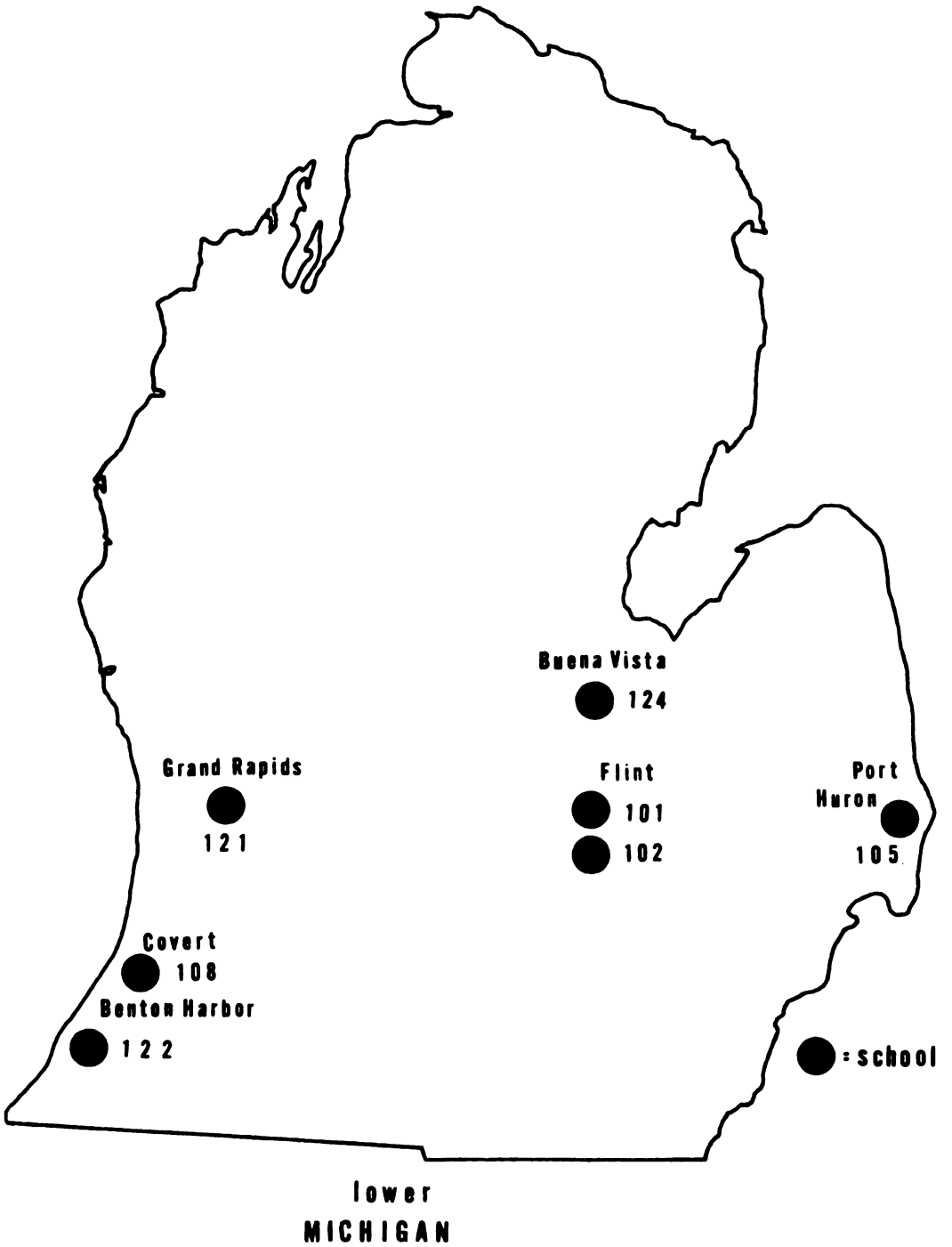
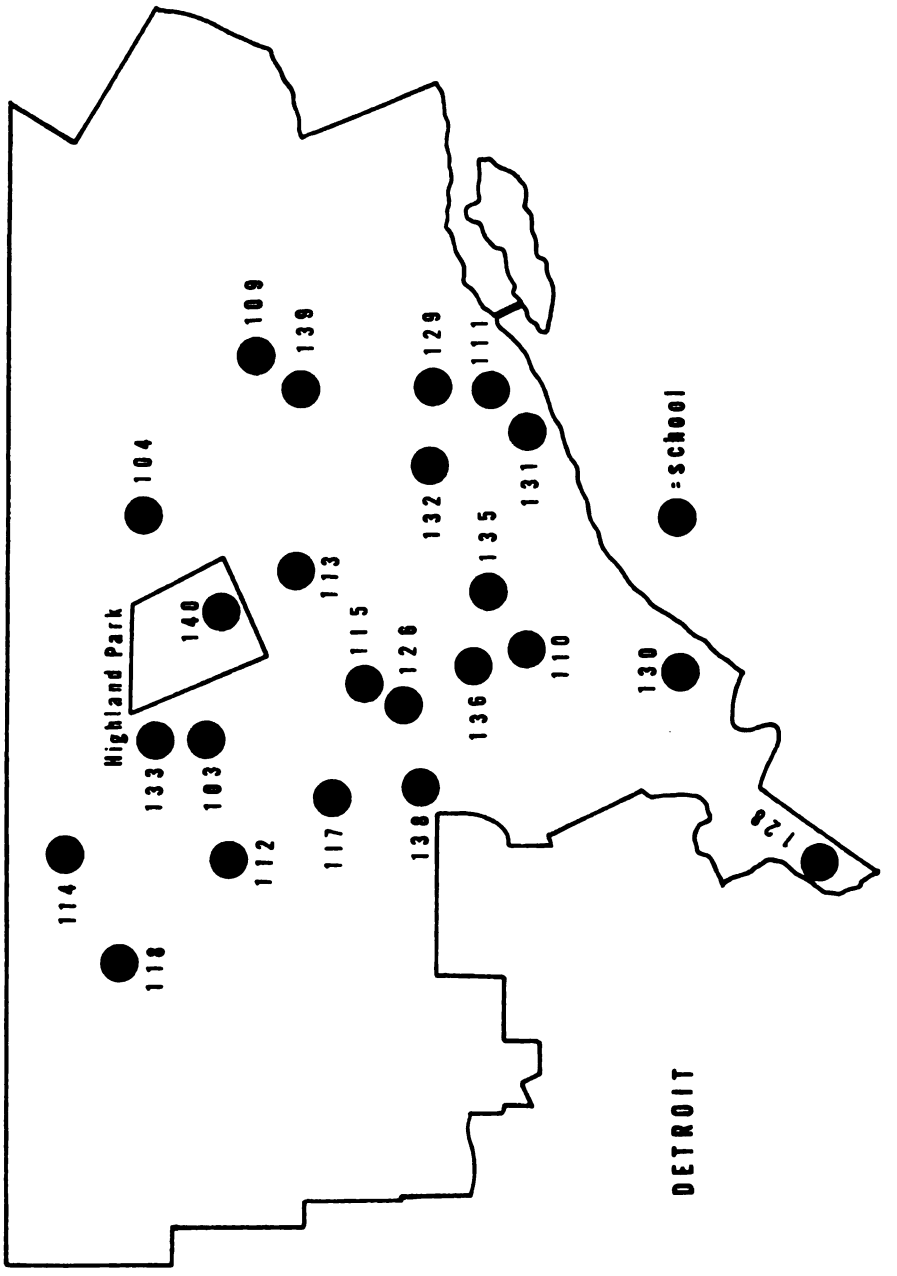


Figure 3.2

Geographic Distribution of Schools in the Final Sample, from the Detroit Area



A distribution of the fourth and fifth grade students taking the student questionnaire was computed for each school in the final sample, by race. The distribution showed a range of 47% to 100% black, with a mean of .86%. The distribution is presented in Table 3.4.

TABLE 3.4

Percent of Students Completing Questionnaires in Predominantly Black Elementary Schools, by Race.

School	Location	Race or Ethnic Background			
		Black	Chicano	White	American Indian
101	Flint	96	01	03	00
102	Flint	100	00	00	00
103	Detroit	99	00	01	00
104	Detroit	99	00	01	00
105	Port Huron	47	14	39	00
108	Covert	66	00	33	01
109	Detroit	100	00	00	00
110	Detroit	87	06	05	02
111	Detroit	100	00	00	00
112	Detroit	99	00	01	00
113	Detroit	100	00	00	00
114	Detroit	99	00	01	00
115	Detroit	100	00	00	00
117	Detroit	100	00	00	00
118	Detroit	100	00	00	00
121	Detroit	79	08	13	00
122	Benton Harbor	57	00	43	00
124	Buena Vista	79	14	05	02
126	Detroit	100	00	00	00
128	Detroit	100	00	00	00
129	Detroit	100	00	00	00
130	Detroit	58	08	34	00
131	Detroit	48	03	42	07
132	Detroit	99	00	01	00
133	Detroit	100	00	00	00
135	Detroit	93	01	06	00
136	Detroit	100	00	00	00
138	Detroit	100	00	00	00
139	Detroit	99	00	01	00
140	Highland Park	80	02	18	00

Procedures and Methodology

After the sample was drawn, letters were sent to the superintendent of schools of each district in which schools in the sample were located, asking for their cooperation in the study. Upon receiving consent from the superintendent of schools, letters were then sent to the principals of each school, soliciting their cooperation. Upon receiving the consent of the school principal, a date was arranged, at the convenience of the principal, to dispatch a team of data collectors to have the principal and each fourth and fifth grade homeroom teacher fill out a questionnaire, and to administer questionnaires to fourth and fifth grade students.

Seventeen individuals, a group consisting primarily of faculty wives and graduate and undergraduate students, including the researcher, were trained to administer the questionnaires used in the study. Two training sessions were devoted to the administration of the student questionnaires and the procedures by which information was to be obtained from principals and teachers. Those individuals collecting data were instructed to ask each principal to complete a questionnaire. Teachers were to be asked to complete their questionnaires away from their classrooms while a member of the data collection team administered the student questionnaire to that teacher's

students. Teachers were asked to leave their classrooms to insure that students would feel free to ask questions, and would not feel pressured by the teacher's presence to respond to the questions in a certain way. The students were told that their individual responses to the questionnaire items were confidential and, therefore, would not be seen by their principal or teacher.

Each data collector was instructed to read each question and each response to the students so as to insure that students did not fail to respond as a result of differential reading abilities.

The race or ethnic background of each student was recorded either by the data collector, or by the student circling the appropriate letter in the race-ethnic code contained on the first page of each student questionnaire.

After the two training sessions, practice was provided for those who desired it by having them collect data at Cornell Elementary School in Okemos, Michigan.

For the purpose of facilitating rapport with principals, teachers, and students, either all black or integrated teams of data collectors were sent into the schools to collect data.

After data were collected in each school, all questionnaires were coded. Principal questionnaires were coded

using a three-digit number representing the school. Teacher questionnaires were coded using a five-digit number identifying the school and teacher. In several cases one teacher served as the homeroom teacher for more than one class. In such cases, the teacher's questionnaire was duplicated for each additional homeroom the teacher taught. Teachers having more than one homeroom were asked if differences in the homerooms warranted changes in any of the responses in the duplicate questionnaires. Changes were made, when necessary, on that basis. Student questionnaires were coded using an eight-digit number identifying school teacher, student, and the student's race or ethnic background. Identification of individuals was made by reference to a number rather than a name.

Participation in the study by principals, teachers, and students was voluntary. Questionnaires were completed by 4,747 students. Participation for teachers was 96%, with 143 teachers completing questionnaires and six teachers refusing to participate. Principal participation was 100%, with all 30 principals completing questionnaires.

Securing SES and Achievement Data

During the period of data collection--November, 1974 to March, 1975--arrangements were made with the

director of the Research, Evaluation and Assessment Service (REAS) of the Michigan Department of Education to obtain socio-economic status (SES) and achievement data for each school selected in the sample. The SES information provided by REAS was used to test the reliability of the SES measures used in the study. The achievement data for the school year 1974-75 provided by REAS are a dependent variable of primary concern to this study. Achievement data for 1973-74 were also obtained from REAS in order to execute preliminary tests and correlations.

Each fall, the Michigan Department of Education administers, through REAS, a state-wide assessment battery to all fourth and seventh grade students. In the 1969-70 State assessment test, items were included to measure the socio-economic status of each student taking the battery. Because of the hostile reception those items received from a number of sources, including parents, teachers, and administrators, they were dropped after the administration of the 1970-71 assessment test. As a result, the SES data provided by REAS were outdated. The purpose of including these data, however, was to provide a test of the validity of the SES measures used in this study. For this purpose, the data were adequate.

The mean SES level of each school used in this study

was originally to have been determined by students' responses to item 8 on the student questionnaire:

> What type of work does your father do? (Give a short description of his job) 1

Students' responses to this item were to be coded by using a modified version of the Duncan Socio-Economic Index scale (Reiss, Duncan, Hatt, & North 1961). However, since questions previously administered by the Michigan Department of Education concerning SES had provoked hostile receptions by parents, teachers, and administrators, particularly in the Detroit school system, administrators in the Detroit school system were reluctant to have researchers asking students questions concerning their socio-economic backgrounds. As a result, admission into the sample of schools located in the Detroit school system became contingent upon research teams not having students respond to the question designed to measure SES.

A measure of SES was crucial to the study; therefore, in order to circumvent this problem, the principal in each of the sample schools located in the Detroit school system was asked to submit a random sample of the occupations of the parents of fourth and fifth graders. Sampling instructions were sent to each

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[1] When administering this question, data collectors were instructed to ask, "What type of work does your father do, or the person who takes care of your family financially?"

of the principals to insure that sampling procedures were uniform and random. Each of the 30 principals in the sample returned a list of 50 occupations, randomly sampled from the occupations of the parents of all fourth and fifth grade students. These occupations, like the occupations listed under student questionnaire item number 8 by students in the sample who were not in the Detroit school system, were converted to a corresponding number on the Duncan Socio-Economic Index scale. Either the SES information provided by principals or the SES information provided by students was used as a measure of SES for the schools in the sample. The SES data provided by the Research, Evaluation and Assessment Service and the SES data collected in the study were correlated, yielding a correlation coefficient of .65. The probability of the random occurrence of this correlation was .001. Considering the fact that the SES data provided by REAS were four years old at the time of this study, a correlation of .65 was considered reasonable.

Until recently, the State assessment battery administered to Michigan students consisted of norm referenced tests. In 1973, however, as a result of pressure brought to bear primarily by the State legislature, criterion referenced tests were substituted for the norm referenced tests, and continue to be used.

The results of criterion referenced tests used by the State of Michigan are not as readily compared, one against the other, as are the results of the norm referenced tests previously used by the State. This is because the results of the criterion referenced tests, unlike the results of the norm referenced tests, are not presented in single score form. This fact posed a problem to the study in that a single score summary was necessary for inclusion in the statistical model used for analyzing the data generated by the study. This problem was resolved, however, after it was determined that the criterion referenced test results could be reduced to single score form by averaging the percent of objectives each student obtained on the tests contained in the State assessment battery. Split-half reliabilities between the single score summaries of odd and even items yielded correlation coefficients of .99 for reading and .98 for mathematics, indicating that the single score summaries have very high internal consistency. Single summary achievement scores for the mathematics and reading tests contained in the State assessment battery were then correlated, yielding a coefficient of .97. Combined mathematics and reading summary scores were also correlated with the word relationship tests included in the State assessment battery, as a test of validity. This correlation yielded a coefficient of .84. Correlations of the mean achievement of each school in the sample between 1973-74 and 1974-75

assessment data yielded a coefficient of .83. These correlations are presented in table 3.5.

TABLE 3.5

Summary of Split-Half Correlations, Test-to-Test Correlations (1974-75), and Correlations of 1973-74 and 1974-75 Michigan Assessment Tests, Administered in a Random Sample of 30 Predominantly Black Michigan Elementary Schools

Tests Correlated	Correlation (r)	Probability of Chance Occurence
Odd Items Reading with Even Items Reading	.99	.000
Odd Items Mathematics with Even Items Mathematics	.98	.000
Mathematics with Reading	.97	.000
Word Relationship with Mathematics and Reading	.84	.000
1973-74 Mathematics and Reading with 1974-75 Mathematics and Reading	.83	.000

Instrumentation

Three instruments were used in collecting the data for this study. They were revisions of the separate but interrelated principal, student, and teacher questionnaires developed by Brookover et al. (1973) for use in a study of elementary school academic climate. In that study Brookover analyzed the differences in academic climate among several pairs of elementary schools. Two criteria were used in the selection of schools for each of the matched pairs. First, the schools had to be similar with respect to the control variables--SES, racial composition of student bodies, and community type. Secondly, the schools had to be dissimilar with respect to the dependent variable, achievement (i.e., high-achieving schools were paired with low-achieving schools). The purpose of the study was to identify school social climate factors that would significantly predict the variation in mean school achievement. The results of factor analyses of the data generated by Brookover's school climate study helped to identify 10 factors as constituting academic climate. These factors were: (a) students' perceptions of present evaluations-expectations, (b) students' perceptions of future evaluations-expectations, (c) students' perceptions of schools' academic norms, (d) student reported sense of futility, (e) teacher present evaluations-expectations, (f) teacher future

evaluations-expectations, (g) teacher perceptions of parent-student achievement push, (h) teacher reported push of individual students, (i) teacher reported feelings of job satisfaction, and (j) teacher perception of student academic improvability.

Four of the 10 climate factors accounted for 63% of the variation in mean achievement when the effects of SES, race, and urban-rural community type were controlled. Those factors were: (a) student sense of futility, (b) teacher future evaluations-expectations, (c) teacher push of individual students, and (d) student present evaluations-expectations. "Student sense of futility" alone, accounted for nearly 45% of the variance. These figures demonstrate the construct validity, and to some extent, the reliability of the initial instruments. Caution in generalizing the validity and reliability of the instruments beyond the sample is warranted, however, because the sample was not randomly selected.

The results of the analyses of the data generated by this study (see Chapter IV) showed that the revised research instruments demonstrated construct validity with respect to the sample. The construct validity of the instruments--their ability to do what they were designed to do--was demonstrated in that they supported the hypothesis advanced in this study by

significantly accounting for variance beyond that accounted for by SES.

The internal consistency of the items in each of the academic climate variables was computed using the reliability subprogram of the Statistical Package for the Social Sciences, or SPSS (Nie, Hull, Jenkins, Steinbrenner & Bent, 1970). Resulting coefficients indicated high internal consistency for almost all of the academic climate variables, thus high reliability for the research instruments. These results are presented in Table 3.6.

TABLE 3.6

Summary of the Reliability Coefficients for the Internal Consistency of Academic Climate Variables.

Academic Climate Variable	Reliability Coefficient
Student Reported Sense of Futility	.92
Student Perceived Teacher Push for Student Improvement	.88
Student Academic Competition Norms	.82
Student Perceived Present Evaluations-Expectations	.88
Student Perceived Future Evaluations-Expectations	.93

(continued)

TABLE 3.6 (continued)

Academic Climate Variable	Reliability Coefficient
Teacher Present Evaluation-Expectations of Students	.88
Teacher Future Evaluations-Expectations of Students	.93
Teacher Perception of Parents' Value of Education	.64
Teacher Perceived Student Competition and Teacher Push	.48
Teacher-Perception of Student Drive for Academic Improvement	.70
Teacher-Principal Encouragement for Improvement	.62
Principal Future Evaluations-Expectations of Students	.79
Principal Perception of Parental Concern	.78
Principal Evaluation of School	.49
Principal Present Evaluation-Expectations of Students	.25
Principal Efforts at Improving Achievement	.89

Decision Model

The statistical model that was used to analyze the data generated by this study was forward inclusion multiple regression. The nature of the multiple regression model is such that it establishes the degree of relationship that exists between independent and dependent variables. The study, therefore, is not experimental. This subject warrants attention because of the general acceptance of the notion that causation cannot be implied from a non-experimental study. Campbell and Stanley (1963), for instance, advance the experiment as "the only means for settling disputes regarding educational practice" (p. 2). Though the writer concurs with this position, this concurrence does not preclude recognition of the value of correlational research.

Baggaley (1964), defending the status of the correlational study as a viable research tool, finds that some conditions are not conducive, or as conducive, to experimentation as others. He also suggests that the non-experimental study can provide valuable "negative" evidence that can be used in solving research problems.

The identification of variables, through correlational methods, whose inclusion in an experimental study is not necessary or critical, could prove to be

a crucial investment in terms of eliminating those variables where they serve to inhibit the study for reasons of finance, expenditure of time, energy, and so forth.

In accordance with the preceding rationale, the findings of this study should offer a valuable contribution to the literature by identifying variables that may or may not be critical to future research, through the use of correlational statistics and the multiple regression model.

The multiple regression model has the power and capability for handling the number of variables generated by the data collected in this study.

This model is appropriate for data having more than one measured independent or predictor variable. The linear regression model relating the dependent variable to the independent variables is:

$$Y_i = \beta_0 + \beta_1 X_{i1} + \beta_2 X_{i2} + \ldots + \beta_q + E_i$$

Where there is only one predictor variable, the model is the simple regression model. Where there is more than one predictor variable, the model is the multiple regression model. The model that was used to analyze the data generated by this study is:

$$Y_1 = \beta_0 + \beta_1 X_{11} + \beta_2 X_{12} + \ldots + \beta_q X_{1q} + E_1$$

$$Y_2 = \beta_0 + \beta_1 X_{21} + \beta_2 X_{22} + \ldots + \beta_q X_{2q} + E_2$$

$$Y_N = \beta_0 + \beta_1 X_{N1} + \beta_2 X_{N2} + \ldots + \beta_q X_{Nq} + E_N$$

Legend: Y = The dependent variable, achievement.

β = A regression weight relating observed values of X to observed values of Y.

X = An independent variable.

E = Error.

The model, as it relates to this study, may be interpreted as follows:

Achievement_1 $\quad$ SES_1 $\quad$ $(\text{Climate Variable } 12\ldots F)_1$

Achievement_2 are predicted by SES_2 $\quad$ $(\text{Climate Variable } 12\ldots f)_2$

Achievement_N $\quad$ SES_N $\quad$ $(\text{Climate Variable } 12\ldots f)_N$

SES accounted for a certain percentage of the variation in achievement levels among the schools in the sample. Residual variance was accounted for by academic climate variables. Residual variance is the primary focus of the hypothesis advanced in this study.

The accuracy of prediction in multiple regression

analysis will vary as a function of the proportion of the number of variables entered into the regression equation to the number of units in the sample. The number of parameters being estimated in the multiple regression model is equal to the number of predictor variables entered into the equation plus one (number of predictor variables + 1). Where the number of variables entered into the equation is equal to the number of observations in the sample (number of variables in equation = number of observations in the sample), the amount of variance accounted for by the equation will always equal 100%. This means that the model over-estimates the amount of variance accounted for. However, as the number of observations in the sample is increased over the number of variables entered into the equation, this over-estimation of variance is accounted for and, therefore, the accuracy of prediction is increased.

The number of units in the sample used in this study was 30. With this in mind, the number of variables to be entered into the regression equation was set at 15 or less.

Assumptions of the Model

The multiple regression model assumes that:

1. The sample was drawn at random from a specified population.

2. Observations were made independently.

3. Error is normally distributed with a mean of zero and variance σ^2.

The methodology and selection procedures for this study were carefully assessed and designed to meet these assumptions. An a priori alpha was set at .05 as the level of significance for this study.

CHAPTER IV

ANALYSIS OF DATA

Overview

In this chapter, the analyses of the data generated by this study will be presented. The data were computed on the Control Data Corporation (CDC) 6500 computer at Michigan State University, utilizing the subprogram multiple regression analysis, forward inclusion, developed by Nie et al. (1970).

The major purpose of this study was to determine whether an analyis of the relationship of academic climate variables to achievement in a random sample of predominately black elementary schools would be congruent with the notion advanced by the proponents of the systemic approach to counseling which states that the social-psychological climate that prevails in a given social system is the primary cause of certain behaviors exhibited by the system's members.

Support for the preceding tenet was determined by whether the hypothesis advanced in this study, which was concerned with whether or not measures of academic climate would significantly account for variance in achievement beyond that accounted for by the mean

socio-economic status (SES) of the students in a given school, was supported or refuted. The study also sought to determine which of the academic climate variables accounted for most of the variance in the achievement levels among the schools in the sample.

In the final section of this chapter, the results of the test of the hypothesis, along with discussion, and some implications of other findings, will be presented. An alpha level of .05 was selected to determine the statistical significance in testing the hypothesis advanced in this study.

Factor Analysis

Several varimax rotation factor analyses were executed using either the mean student, principal, or teacher response to each questionnaire item, across all schools sampled, for the purpose of determining which questionnaire items loaded together as measures of different aspects of academic climate. The resulting factors proved to be inconsistent with the loadings that were anticipated based on the logical construction of the questionnaire items. The fact that the questions did not load as they were logically keyed to do was attributed, in part, to the probability that a sample of 30 units was so small as to render the factor analyses unstable.

Brookover (1975), studying academic climate in Michigan elementary schools, factor-analyzed the

responses to the items contained in the same instruments used in this study. His analyses were executed on data collected from a random sample of 69 Michigan elementary schools. The sample included 62 predominantly white and seven predominantly black schools. The resulting factors were consistent with anticipated loadings. It was therefore decided that the variables constructed on the basis of Brookover's factor analyses would be used as measures of academic climate in this study.

Construction of Academic Climate Variables

Factor analysis has often been described as a "hunting license." It is a statistical procedure that creates factors based on correlations. Brookover (1975) executed three varimax rotation factor analyses. The first analyzed the responses to 52 items contained in the student questionnaire. The second analysis was performed on 48 items contained in the teacher questionnaire. The third factor analysis was performed on 20 items contained in the principal questionnaire. The factors that emerged from the analyses were used as guidelines for the construction of academic climate variables.

After the results of the factor analyses were obtained, Brookover and his research staff determined

which questionnaire items statistically and/or logically fit into which climate variables. Items were deleted, retained, or shifted from one variable to another on this basis. Thus, the items contained in the academic climate variables were finalized on the basis of logical as well as statistical considerations. In total, 16 variables were produced as measures of academic climate --five student variables, six teacher variables, and five principal variables.

Student Variable 1. Student Reported Sense of Futility

Five items in this variable are a modification of the "sense of control" variable used by Coleman et al. (1966). This variable is concerned with the student's perception of the extent to which he or she can influence those factors in the academic environment that impact upon his or her academic achievement. This variable contains 16 items.

Student Variable 2. Student Perceived Present Evaluations-Expectations

This variable was constructed to reflect students' expectations and evaluations of "significant others" --parents, teachers, and friends--concerning how they perceive students' chances of going to, and completing high school. It contains six items.

Student Variable 3. Student Perceived Future Evaluations-Expectations

This variable was constructed to reflect students' expectations and evaluations of parents, teachers, and friends concerning how they perceive students' chances of going to, and completing college. It contains 11 items.

Student Variable 4. Student Perceived Teacher Push for Student Improvement

The items in this variable are concentrated upon students' perception of the extent to which teachers do or do not urge students to improve academic achievement. The items are also intended to measure students' perceptions of how hard the teacher will work to insure the academic success of students. This variable contains four items.

Student Variable 5. Student Academic Competition Norms

This variable is concerned with how students compared their school to other schools academically. It also reflects students' perception of the importance that peers place on doing school work. This variable contains six items.

Teacher Variable 1. Teacher Present Evaluations-Expectations of Students

The items forming this variable reflect the

immediate evaluations that teachers have of their students and the expectations they hold with respect to how many students will go to and complete high school. This variable contains eight items.

Teacher Variable 2. Teacher Future Evaluations-Expectations of Students

The items in this variable are concerned primarily with the expectations teachers hold with respect to how many of their students will go to and complete college. This variable contains nine items.

Teacher Variable 3. Teacher Perception of Parents' Value of Education

This variable measures teachers' perception of the value that parents place on education and their desire for feedback from the school concerning the progress of their children. It contains four items.

Teacher Variable 4. Teacher Perceived Student Competition and Teacher Push

This variable was designed to measure teachers' perception of student competition for good grades and the extent to which teachers push their students to achieve higher academically, particularly those who they do not feel have the resources or ability to do so. It contains seven items.

Teacher Variable 5. Teacher Perception of Student Drive for Academic Improvement

This variable measures teachers' perception of the extent to which students voluntarily attempt to improve upon previous school work, and the number of students who seem content to just "get by" in their school work. It contains six items.

Teacher Variable 6. Teacher-Principal Encouragement for Improvement

The items in this variable reflect teachers' expressed desire to help students improve upon previous school work and teachers' assessment of the amount of support and assistance the principal is willing to provide for better educational programs. This variable contains four items.

Principal Variable 1. Principal Present Evaluations-Expectations of Students

The items forming this variable reflect the immediate evaluations that the principal has of his or her students and the expectations the principal holds with respect to how many students will go to and complete high school. This variable contains four items.

Principal Variable 2. Principal Future Evaluations-Expectations of Students

One item in this variable reflects principals' perception of their schools to other schools academically.

The other items measure the expectations that principals hold with respect to how many of their students will go to and complete college. This variable contains four items.

Principal Variable 3. Principal Perception of Parental Concern

This variable measures principals' perception of parents' concern for the academic progress of their children. It contains five items.

Principal Variable 4. Principal Evaluation of School

The items in this variable are concerned primarily with how principals view the present academic status of their schools and the improvability of that status. This variable also concentrates on principals' perception of how others view the academic status of their schools. It contains five items.

Principal Variable 5. Principal Efforts at Improving Achievement

This variable reflects how often principals suggest ways of improving student achievement to teachers and how often principals meet with teachers to discuss ways of improving achievement. It contains two items. (the preceding explanation of variables was taken, in part, from Brookover and Schneider, 1975).

Multiple Regression Analysis

Multiple regression analysis (forward inclusion) was used to test the hypothesis and explore the additional question of concern to this study.

Hypothesis: The social-psychological variables used as measures of elementary school academic climate will significantly account for variance in achievement levels among the schools in the sample, as measured by the Michigan State School Assessment Index, over and above variance accounted for by SES, as measured by the research instruments.

Question: Which of the academic climate variables account for most of the variance in achievement levels among the schools in the sample?

An a priori alpha level was set at .05 to represent the level of significance acceptable for this investigation.

Explanation of Forward Inclusion

The statistical program utilizing the forward inclusion multiple regression procedure used in analyzing the data was developed by Nie et al. (1975). The program allows for hierarchical, non-hierarchical, or mixed inclusion of variables into the regression equation.

When variables are not entered into the equation by a predetermined hierarchy, the program will enter independent variables into the equation on the basis of partial correlations.

The first variable the computer enters into the equation, where no a priori hierarchy has been determined, is the one having the highest simple r or zero order correlation with the dependent variable. Succeeding variables are entered on the basis of the next highest partial correlation of the remaining independent variables with the dependent variable. That is, remaining variables are entered in the order of the highest correlation that one of them maintains with the dependent variable after the effects of the preceding variable have been removed by entering it into a multiple regression equation. This means that if three independent variables are to be entered into a multiple regression equation using forward inclusion, with no a priori hierarchy established, the variable having the highest zero order correlation will be entered first. The next of the remaining two variables having the highest partial correlation to the dependent variable will be entered second. The third variable will be listed last because it has the lowest partial correlation with the dependent variable, which was determined by its intercorrelation with the first two variables, as well as with the dependent variable.

Where an a priori hierarchy has been determined,

the computer will enter independent variables into the multiple regression equation in the order specified, regardless of next highest partial correlation.

The situation in which one or more independent variables is to be entered into the equation in some specified order, followed by, or preceded by a group of independent variables with no specified order, is considered mixed inclusion. Where it is specified that a group of variables with no a priori hierarchy established is to be entered preceding one or more remaining independent variable(s) whose order has been specified, the first variable listed from that group will be the one having the highest zero order correlation with the dependent variable. The second variable entered will be the one having the next highest partial correlation, and so forth. Where it is specified that a group of independent variables will follow one or more independent variables whose order has been specified, the first variable listed after those whose order has been specified is that variable in the non-ordered group that maintains the highest partial correlation after the effects of the preceding variables have been removed. This variable is then followed by the one with the next highest partial correlation, and so forth.

Results of Test of Hypothesis

In the first analysis, SES was entered into the regression equation first. Fourteen academic climate variables were entered into the equation next, with no a priori hierarchy established. SES plus three academic climate variables--teacher perception of student drive for academic improvement, student reported sense of futility, and teacher-principal encouragement for improvement, respectively--significantly accounted for 68.6% of the variance in achievement among the schools in the sample. The results of this analysis are presented in Table 4.1.

TABLE 4.1

TABLE 4.1

Summary of Multiple Regression (Forward Inclusion) of Mean School Socio-Economic Status and Academic Climate Variables on Mean School Achievement in a Random Sample of 30 Predominantly Black Michigan Elementary Schools, Where SES Was Entered First and 14 Academic Climate Variables Entered Next with No A Priori Hierarchy Established

Step	Variable Entered	Simple r	Multiple R	R^2	R^2 Change	F Ratio	P less than
1	SES	.612	.612	.375	.375	16.78	.000*
2	Teacher Perception of Student Drive for Academic Improvement	.372	.725	.525	.150	08.56	.007*
3	Student Reported Sense of Futility	-.709	.785	.616	.091	06.17	.020*
4	Teacher-Principal Encouragement for Improvement	.182	.828	.686	.070	05.52	.027*
5	Student Future Evaluations-Expectations	.324	.836	.700	.014	01.10	.304

(continued)

TABLE 4.1 (continued)

Step	Variable Entered	Simple r	Multiple R	R^2	R^2 Change	F Ratio	P less than
6	Teacher Present Evaluations-Expectations of Students	.552	.847	.718	.018	01.48	.236
7	Teacher Future Evaluations-Expectations of Students	.480	.867	.751	.033	02.96	.099
8	Student Academic Competition Norms	.337	.873	.762	.011	00.99	.330
9	Principal Evaluation of School	.327	.880	.774	.012	01.05	.317
10	Student Perceived Teacher Push for Student Improvement	.190	.884	.781	.007	00.60	.448

(continued)

TABLE 4.1 (continued)

Step	Variable Entered	Simple r	Multiple R	R^2	R^2 Change	F Ratio	P less than
11	Principal Efforts at Improving Achievement	-.241	.890	.791	.010	00.87	.364
12	Principal Present Evaluations-Expectations of Students	.236	.892	.796	.005	00.38	.547
13	Principal Future Evaluations-Expectations of Students	.439	.897	.804	.008	00.67	.424
14	Teacher Perception of Parents' Value of Education	.437	.898	.806	.002	00.18	.675
15	Principal Perception of Parental Concern	.184	.899	.807	.001	00.08	.780

*Significant at alpha = .05

Table 4.1 and succeeding tables that will be presented concerning forward inclusion multiple regression analysis should be interpreted as follows:

Step: Reflects the order in which independent variables have been entered into the equation.

Variable Entered: Indicates which independent variable has been entered into the equation at a given step.

Simple r: The zero order correlation of a given independent variable with the dependent variable. The Simple r also reflects the direction of the correlation.

Multiple R: The combined correlation of all independent variables that have been entered into the multiple regression equation, with the dependent variable. The Multiple R does not reflect the direction of the multiple correlation.

R^2: The product of the Multiple R when squared. It represents the combined variance accounted for by all independent variables that have been entered into the multiple regression equation.

R^2 Change: Reflects the amount of variance accounted for by an independent variable, beyond that accounted for by the variable that preceded its entry into the multiple regression equation. It should be noted that where only one variable has been entered, R^2 change is simply represented by the numerical

value of R^2, since there has been no change.

F Ratio: Provides a test of the null hypothesis that a given independent variable is not significantly accounting for variance beyond that accounted for by those variables that have preceded its entry into the multiple regression equation.

P less than: Reflects the extent to which an obtained F Ratio may be a function of chance. For instance, where an a priori alpha level has been set at .05, probability values of greater than .05 would indicate that an obtained F Ratio is probably due to chance. It is therefore concluded that the independent variable considered, is not significantly accounting for variance beyond that accounted for by those variables that have preceded its entry into the multiple regression equation. Where probability values are less than .05, the opposite conclusion is drawn.

Of the 14 academic climate variables entered into the multiple regression equation, three--teacher perception of student drive for academic improvement, student reported sense of futility, and teacher-principal encouragement for improvement--significantly accounted for 31.1% of the variance in achievement levels among schools in the sample, over and above that accounted for by SES at alpha = .05. The hypothesis is supported by this analysis.

At this point, the major question of concern to this study has been answered. The final interpretation of the results, however, is also contingent upon whether or not SES would significantly account for variance beyond that accounted for by academic climate variables, and if it did significantly account for residual variance, how much? Thus, a second multiple regression analysis was executed entering academic climate variables into the equation first with SES set to be entered last.

This analysis showed student reported sense of futility, and teacher perception of student drive for academic improvement, respectively, as significantly accounting for a total of 59.1% of the variance in achievement among the schools in the sample. The variance accounted for by the remaining academic climate variables entered into the regression equation was not significant.

This regression analysis was terminated by the computer when it attempted to enter the thirteenth academic climate variable, student perceived teacher push for student improvement, into the multiple regression equation; therefore, that independent variable along with principal perception of parental concern and SES, was not entered into the equation (the computer will terminate the multiple regression procedure when the F level of variables that are to be entered into the equation, with no a priori hierarchy established, is

too low and therefore insufficient for further computation). Since the procedure was terminated before SES was entered, it could not be determined from this analysis if SES would significantly account for variance beyond that accounted for by academic climate variables. The results of this analysis are presented in Table 4.2.

TABLE 4.2

Summary of Multiple Regression (Forward Inclusion) of Mean School Socio-Economic Status and Academic Climate Variables on Mean School Achievement in a Random Sample of 30 Predominantly Black Michigan Elementary Schools, Where 14 Academic Climate Variables Were to be Entered First with No A Priori Hierarchy Established and SES Entered Last

Step	Variable Entered	Simple r	Multiple R	R^2	R^2 Change	F Ratio	P less than
1	Student Reported Sense of Futility	-.709	.709	.502	.502	28.25	.000*
2	Teacher Perception of Student Drive for Academic Improvement	.327	.769	.591	.089	05.85	.023*
3	Teacher Present Evaluations-Expectations of Students	.552	.798	.637	.046	03.34	.079
4	Teacher-Principal Encouragement for Improvement	.182	.819	.670	.033	02.51	.126

(continued)

TABLE 4.2 (continued)

Step	Variable Entered	Simple r	Multiple R	R^2	R^2 Change	F Ratio	P less than
5	Teacher Future Evaluations-Expectations of Students	.480	.847	.717	.047	03.96	.058
6	Principal Present Evaluations-Expectations of Students	.236	.853	.728	.011	00.94	.343
7	Student Academic Competition Norms	.337	.861	.740	.012	01.04	.318
8	Principal Future Evaluations-Expectations of Students	.439	.865	.749	.009	00.68	.420

(continued)

TABLE 4.2 (continued)

Step	Variable Entered	Simple r	Multiple R	R^2	R^2 Change	F Ratio	P less than
9	Student Perceived Future Evaluations-Expectations	.324	.867	.752	.003	00.26	.613
10	Principal Evaluation of School	.327	.870	.756	.004	00.33	.574
11	Teacher Perception of Parents' Value of Education	.437	.870	.756	.000	00.03	.865
12	Principal Efforts at Improving Achievement	-.241	.870	.750	.000	00.01	.905
	* *						

*Significant at alpha = .05

* *Regression procedure terminated

Since SES was not entered into the preceding equation, a third multiple regression analysis was executed, leaving out the academic climate variable that caused the termination, with SES again set to be entered last. Again, the variables student reported sense of futility, and teacher perception of student drive for academic improvement, significantly accounted for a total of 59.1% of the variance. SES, upon being entered last, did not significantly account for additional variance. The results of this analysis are entered in Table 4.3.

TABLE 4.3

TABLE 4.3

Summary of Multiple Regression (Forward Inclusion) of Mean School Socio-Economic Status and Academic Climate Variables on Mean School Achievement in a Random Sample of 30 Predominantly Black Michigan Elementary Schools, Where 13 Academic Climate Variables Were Entered First with No A Priori Hierarchy Established and SES Entered Last

Step	Variable Entered	Simple r	Multiple R	R^2	R^2 Change	F Ratio	P less than
1	Student Reported Sense of Futility	-.709	.709	.502	.502	28.25	.000*
2	Teacher Perception of Student Drive for Academic Improvement	.372	.769	.591	.089	05.84	.023*
3	Teacher Present Evaluations-Expectations of Students	.552	.798	.637	.046	03.34	.079
4	Teacher-Principal Encouragement for Improvement	.182	.819	.670	.033	02.51	.126
5	Teacher Future Evaluations-Expectations of Students	.480	.847	.717	.047	03.96	.058

(continued)

TABLE 4.3 (continued)

Step	Variable Entered	Simple r	Multiple R	R^2	R^2 Change	F Ratio	P less than
6	Principal Present Evaluations-Expectations of Students	.236	.853	.728	.011	00.94	.343
7	Student Academic Competition Norms	.337	.861	.740	.012	01.04	.318
8	Principal Future Evaluations-Expectations of Students	.439	.865	.749	.009	00.68	.420
9	Student Perceived Future Evaluations-Expectations	.324	.867	.752	.003	00.26	.613

(continued)

TABLE 4.3 (continued)

Step	Variable Entered	Simple r	Multiple R	R^2	R^2 Change	F Ratio	P less than
10	Principal Evaluation of School	.327	.870	.756	.004	00.33	.574
11	Teacher Perception of Parents' Value of Education	.437	.870	.756	.000	00.03	.865
12	Principal Efforts at Improving Achievement	-.241	.870	.756	.000	00.01	.905
13	SES	.612	.892	.795	.039	03.03	.101

*Significant at alpha = .05

The factor analyses mentioned in the first section of this chapter helped to produce a total of 16 academic climate variables. Including SES, the total number of independent variables totaled 17. Since the total number of variables to be entered into the regression equations was set at 15 (see page 70, Decision Model) two academic climate variables were eliminated from inclusion into the preceding regression analysis. This elimination was made on the basis of lowest zero order correlation with achievement. That is, the two academic climate variables having the lowest zero order correlation with the dependent variable, achievement, were eliminated.

Because two variables were eliminated on the basis of lowest zero order correlations with the dependent variable, it was felt that this procedure may have biased the results in favor of academic climate variables and against SES. It was therefore decided to repeat the procedure, eliminating two of the 16 academic climate variables on the basis of lowest zero order correlation with SES.

By eliminating on the basis of lowest zero order correlation with achievement, the two academic climate variables--student perceived present evaluations-expectations, and teacher perceived student competition and teacher push--were excluded. By eliminating on the

basis of lowest zero order correlation with SES, the two academic climate variables--teacher perception of student drive for academic improvement, and principal perception of parental concern--were excluded. The zero order correlations of academic climate variables and SES to achievement, and of academic climate variables to SES are presented in Table 4.4.

TABLE 4.4

Summary of Zero Order Correlations Maintained by 16 Academic Climate Variables and SES with Mean School Achievement and Mean School SES of a Random Sample of 30 Predominantly Black Michigan Elementary Schools

Mean School Achievement		Mean School SES	
Variable	Zero Order Correlation	Variable	Zero Order Correlation
Student Reported Sense of Futility	-.709	SES	1.00
SES	.612	Student Reported Sense of Futility	-.767
Teacher Future Evaluations-Expectations of Students	.480	Principal Future Evaluations-Expectations of Students	.579
Principal Future Evaluations-Expectations of Students	.439	Student Perceived Future Evaluations-Expectations	.535
Teacher Perception of Parents' Value of Education	.437	Principal Evaluation of School	.467
Teacher Present Evaluations-Expectations of Students	.552	Teacher Future Evaluations-Expectations of Students	.412
Teacher Perception of Student Drive for Academic Improvement	.372	Teacher Perceived Student Competition and Teacher Push	-.367
Principal Evaluation of School	.326	Principal Efforts at Improving Achievement	.390

(continued)

TABLE 4.4 (continued)

Mean School Achievement		Mean School SES	
Variable	Zero Order Correlation	Variable	Zero Order Correlation
Student Academic Competition Norms	.326	Principal Present Evaluations-Expectations of Students	.313
Student Perceived Future Evaluations-Expectations	.327	Teacher-Principal Encouragement for Improvement	-.298
Principals' Efforts at Improving Achievement	-.241	Teacher Present Evaluations-Expectations of Students	.498
Principal Present Evaluations-Expectations of Students	.236	Student Perceived Present Evaluations-Expectations	.227
Student Perceived Teacher Push for Student Improvement	.190	Student Perceived Teacher Push for Student Improvement	.217
Principal Perception of Parental Concern	.184	Teacher Perception of Parents' Value of Education	.130
Teacher-Principal Encouragement for Improvement	.181	Student Academic Competition Norms	.088
Student Perceived Present Evaluations-Expectations	.127	Principal Perception of Parental Concern	.084
Teacher Perceived Student Competition and Teacher Push	-.022	Teacher Perception of Student Drive for Academic Improvement	-.026

After two academic climate variables were eliminated on the basis of lowest zero order correlation to SES, three additional multiple regression analyses were executed to determine what differences would result from having excluded two academic climate variables on that basis.

In the first analysis, SES was entered into the regression equation, and the 14 academic climate variables were entered next, with no a priori hierarchy established. The results of the analysis showed SES accounting for 37.5% of the variance in achievement. Two academic climate variables, teacher-principal encouragement for improvement, and student reported sense of futility, significantly accounted for an additional 24.6% of the variance over that accounted for by SES. This analysis also supported the hypothesis. The results of the analysis are presented in Table 4.5.

TABLE 4.5

Summary of Multiple Regression (Forward Inclusion) of Mean School Socio-Economic Status and Academic Climate Variables on Mean School Achievement in a Random Sample of 30 Predominantly Black Michigan Elementary Schools, Where SES Was Entered First and 14 Academic Climate Variables Entered Next with No A Priori Hierarchy Established

Step	Variable Entered	Simple r	Multiple R	R^2	R^2 Change	F Ratio	P less than
1	SES	.612	.612	.375	.375	16.78	.000*
2	Teacher-Principal Encouragement for Improvement	-.182	.721	.520	.145	08.16	.008*
3	Student Reported Sense of Futility	-.709	.788	.621	.101	06.91	.014*
4	Student Academic Competition Norms	.337	.809	.655	.034	02.46	.129
5	Student Perceived Present Evaluations-Expectations	.127	.835	.697	.042	03.33	.081
6	Teacher Present Evaluations-Expectations of Students	.552	.852	.726	.029	02.50	.127

(continue)

TABLE 4.5 (continued)

Step	Variable Entered	Simple r	Multiple R	R^2	R^2 Change	F Ratio	P less than
7	Principal Evaluation of School	.327	.870	.756	.030	02.70	.115
8	Student Perceived Teacher Push for Student Improvement	.190	.888	.788	.032	03.13	.091
9	Principal Efforts at Improving Achievement	-.241	.892	.796	.008	00.84	.369
10	Principal Present Evaluations-Expectations of Students	.236	.896	.803	.007	00.59	.451

(continued)

TABLE 4.5 (continued)

TABLE 4.5 (continued)

Step	Variable Entered	Simple r	Multiple R	R^2	R^2 Change	F Ratio	P less than
11	Teacher Future Evaluations-Expectations of Students	.480	.903	.816	.013	01.27	.275
12	Teacher Perceived Student Competition and Teacher Push	-.022	.909	.826	.010	01.00	.331
13	Principal Future Evaluations-Expectations of Students	.439	.913	.833	.007	00.65	.432
14	Student Perceived Future Evaluations-Expectations	.324	.914	.835	.002	00.23	.637
	* *						

* Significant at alpha = .05

* * Multiple regression procedure terminated

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In the next analysis, SES was to be entered last. Academic climate variables were entered first with no a priori hierarchy established. This analysis showed two academic climate variables, student reported sense of futility, and teacher-principal encouragement for improvement, as significantly accounting for 58.0% of the achievement variance.

This regression procedure was also terminated when the computer attempted to enter the fourteenth academic climate variable, principal efforts at improving achievement, into the equation. Thus, SES was not entered. The results of this analysis are presented in Table 4.6.

TABLE 4.6

Summary of Multiple Regression (Forward Inclusion) of Mean School Socio-Economic Status and Academic Climate Variables on Mean School Achievement in a Random Sample of 30 Predominantly Black Michigan Elementary Schools, Where 14 Academic Climate Variables Were to be Entered First with No A Priori Hierarchy Established and SES Entered Last

Step	Variable Entered	Simple r	Multiple R	R^2	R^2 Change	F Ratio	P less than
1	Student Reported Sense of Futility	-.709	.709	.502	.502	28.25	.000*
2	Teacher-Principal Encouragement for Improvement	-.182	.762	.580	.078	04.99	.034*
3	Teacher Present Evaluations-Expectations of Students	.552	.794	.630	.050	03.52	.072
4	Student Academic Competition Norms	.337	.813	.662	.032	02.32	.140
5	Student Perceived Present Evaluations-Expectations	.127	.835	.697	.035	02.80	.107

(continued)

TABLE 4.6 (continued)

TABLE 4.6 (continued)

Step	Variable Entered	Simple r	Multiple R	R^2	R^2 Change	F Ratio	P less than
6	Principal Evaluation of School	.327	.848	.719	.022	01.83	.189
7	Teacher Future Evaluations-Expectations of Students	.480	.860	.740	.021	01.79	.195
8	Principal Present Evaluations-Expectations of Students	.236	.869	.756	.016	01.34	.261
9	Principal Future Evaluations-Expectations of Students	.439	.874	.764	.008	00.71	.408

(continued)

TABLE 4.6 (continued)

Step	Variable Entered	Simple r	Multiple R	R^2	R^2 Change	F Ratio	P less than
10	Student Perceived Teacher Push for Student Improvement	.190	.876	.768	.004	00.32	.577
11	Student Perceived Future Evaluations-Expectations	.324	.879	.773	.005	00.40	.537
12	Teacher Perceived Student Competition and Teacher Push	-.022	.881	.776	.003	00.22	.647
13	Teacher Perception of Parents' Value of Education	.437	.882	.778	.002	00.11	.748
	* *						

* Significant at alpha = .05

* * Multiple regression procedure terminated

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Again, a third analysis was executed leaving out the variable that caused the regression procedure to terminate, entering SES last. The results showed that SES did not significantly account for additional variance beyond the variance significantly accounted for by the academic climate variables, student reported sense of futility, and teacher-principal encouragement for improvement. The results of this analysis are presented in Table 4.7.

TABLE 4.7

Summary of Multiple Regression (Forward Inclusion) of Mean School Socio-Economic Status and Academic Climate Variables on Mean School Achievement in a Random Sample of 30 Predominantly Black Michigan Elementary Schools, Where 13 Academic Climate Variables Were Entered First with No A Priori Hierarchy Established and SES Entered Last

Step	Variable Entered	Simple r	Multiple R	R^2	R^2 Change	F Ratio	P less than
1	Student Reported Sense of Futility	-.709	.709	.502	.502	28.25	.000*
2	Teacher-Principal Encouragement for Improvement	-.182	.762	.580	.078	04.99	.034*
3	Teacher Present Evaluations-Expectations of Students	.552	.794	.630	.050	03.52	.072
4	Student Academic Competition Norms	.337	.813	.662	.032	02.32	.140
5	Student Perceived Present Evaluations-Expectations	.127	.835	.697	.035	02.80	.107

(continued)

TABLE 4.7 (continued)

TABLE 4.7 (continued)

Step	Variable Entered	Simple r	Multiple R	R^2	R^2 Change	F Ratio	P less than
6	Principal Evaluation of School	.327	.848	.719	.022	01.83	.189
7	Teacher Future Evaluations-Expectations of Students	.480	.860	.740	.021	01.79	.195
8	Principal Present Evaluations-Expectations of Students	.236	.869	.756	.016	01.34	.261
9	Principal Future Evaluations-Expectations of Students	.439	.874	.764	.008	00.71	.408

(continued)

TABLE 4.7 (continued)

Step	Variable Entered	Simple r	Multiple R	R^2	R^2 Change	F Ratio	P less than
10	Student Perceived Teacher Push for Student Improvement	.190	.876	.768	.004	00.32	.577
11	Student Perceived Future Evaluations-Expectations	.324	.879	.773	.005	00.40	.537
12	Teacher Perceived Student Competition and Teacher Push	-.022	.881	.776	.003	00.22	.647
13	Teacher Perception of Parents' Value of Education	.437	.882	.778	.002	00.11	.748
14	SES	.612	.905	.819	.041	03.44	.083

* Significant at alpha = .05

Paired comparisons of the amount of variance that was accounted for by SES, and the academic climate variables that were selected to be entered into the regression equations on the basis of highest zero order correlations with achievement or SES, showed differences ranging from 0.0% to 6.5% depending upon the pair of analyses considered. A summary of the paired comparisons of the regression analysis is presented in Table 4.8.

TABLE 4.8

Paired Comparisons of Variance Significantly Accounted for by SES and Academic Climate Variables, Where Academic Climate Variables Were Included in Regression Equations on the Basis of Highest Zero Order Correlations with Achievement or SES

Academic Climate Variables: Selected on the Basis of Highest Zero Order Correlations with Achievement	Academic Climate Variables: Selected on the Basis of Highest Zero Order Correlations with SES
Regression Equation Command: Enter SES First. Enter 14 academic climate variables next, with no a priori hierarchy established.	
Variance significantly accounted for by SES = 37.5%	Variance significantly accounted for by SES = 37.5%
	difference = 00.0%
Variance significantly accounted for by academic climate variables = 31.1%	Variance significantly accounted for by academic climate variables = 24.6%
	difference = 06.5%

(continued)

TABLE 4.8 (continued)

Academic Climate Variables: Selected on the Basis of Highest Zero Order Correlations with Achievement	Academic Climate Variables: Selected on the Basis of Highest Zero Order Correlations with SES
Regression Equation Command: Enter 14 academic climate variables first, with no a priori hierarchy established. Enter SES last (Regression was terminated)	
Variance significantly accounted for by academic climate variables = 59.1%	Variance significantly accounted for by academic climate variables = 58.0%
difference = 01.1%	
SES was not entered because the F level of variables preceding SES were insufficient for further computation	SES was not entered because the F level of vaviables preceding SES were insufficient for further computation

(continued)

TABLE 4.8 (continued)

Academic Climate Variables: Selected on the Basis of Highest Zero Order Correlations with Achievement	Academic Climate Variables: Selected on the Basis of Highest Zero Order Correlations SES
Regression Equation Command: Enter 13 academic climate variables first, with no a priori hierarchy established. Enter SES last.	
Variance significantly accounted for by academic climate variables = 59.1%	Variance significantly accounted for by academic climate variables = 58.0%
difference = 01.1%	
Variance significantly accounted for by SES = 00.0%	Variance significantly accounted for by SES = 00.0%
difference = 00.0%	

Multicollinearity

The fact that SES significantly accounted for variation in the achievement levels among the schools sampled, when entered into the multiple regression equation first, yet did not significantly account for variation in achievement when entered into the equation last, is attributable to the effects of multicollinearity. According to Nie et al. (1975), "Multicollinearity refers to the situation in which some or all of the independent variables are very highly related" (p.340). In effect, what happens in the situation where three independent variables, for instance, are highly related, the entry of any one of the variables first, will reduce the partial correlations that the second and third variables maintain with the dependent variable. This reduction may or may not function to the extent that the second and third variables fail to significantly account for variance beyond that accounted for by the first variable, where a predetermined alpha level has been established. This is because the ability of an independent variable to account for residual variance, where multicollinearity exists, is contingent upon the zero order correlation that all independent variables considered maintain

with the dependent variable.

The zero order correlations of all independent variables used in this study, presented in Appendix C, show that many of these variables are highly related. The correlation of SES and student reported sense of futility, for instance, yielded a coefficient of -.77. Obviously, these two variables are highly related. Moreover, the measure of student reported sense of futility was more highly related to the dependent variable achievement (-.71) than was the measure of SES (.61). Therefore, the finding that SES did not significantly account for variance beyond that significantly accounted for by student reported sense of futility and other academic climate variables, yet student reported sense of futility and teacher perception of student drive for academic improvement did significantly account for variance beyond that accounted for by SES, is assumed to be reasonable. One should not misconstrue these findings as suggesting that the variance initially accounted for by SES (Table 4.1), was rendered insignificant in the third analysis (Table 4.3) where SES was entered into the multiple regression equation last. Rather, the findings mean that the variance initially accounted for by SES was masked by the effects of multicollinearity where SES was entered last. Likewise, the great reduction

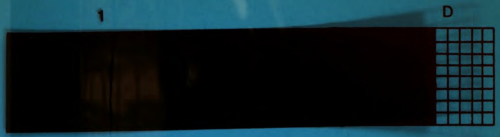
in the amount of variance significantly accounted for by student reported sense of futility, where it was entered into the multiple regression equation third instead of first, is also a result of the masking effect of multicollinearity.

In the first multiple regression analysis (Table 4.1), upon being entered first, SES significantly accounted for 37.5% of the variance in achievement among the schools in the sample. Three academic climate variables--teacher perception of student drive for academic improvement, student reported sense of futility, and teacher-principal encouragement for improvement--significantly accounted for 15.0%, 9.1% and 7.0% of the variance, respectively, for a total of 31.1% of the variance in achievement beyond that accounted for by SES. On the other hand, when academic climate variables were entered into the multiple regression equation first (Table 4.3) two of the previous three academic climate variables, student reported sense of futility, and teacher perception of student drive for academic improvement, significantly accounted for 50.2% and 8.9% of the variance, respectively, for a total of 59.1% of the variance in achievement among the schools in the sample. SES, upon being entered last, did not significantly account for variance beyond that significantly accounted for by these two academic climate variables.

The preceding figures illustrate the masking effect of multicollinearity, where certain variables were entered into the multiple regression equation in varying orders. That is, when the results of the two analyses are considered simultaneously, SES concealed a great percentage of the variance that student reported sense of futility significantly accounted for (Table 4.1) because SES and student reported sense of futility are highly related. However, the additional 9.1% of the variance that student reported sense of futility accounted for beyond that accounted for by SES indicated that it accounted for variance beyond that which was also accounted for by SES.

The fact that in the first analysis, three academic climate variables significantly accounted for variance beyond that accounted for by SES, whereas only two academic climate variables significantly accounted for achievement variance in the third analysis, is also attributable to the masking effect of multicollinearity. The notion of the masking of variance is further illustrated in Figure 4.1, where the results of the first and third multiple regression analyses have been simultaneously represented graphically.

To summarize thus far, the fact that SES significantly accounted for variance in the first analysis but did not significantly account for variance in the third

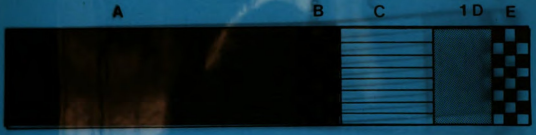


1 = Variance significantly accounted for by student reported sense of futility, upon being entered into the equation first.

D = Residual variance significantly accounted for by teacher perception of student push for academic improvement

I = Variance significantly accounted for by student reported sense of futility, upon being entered into the equation first.

D = Residual variance significantly accounted for by teacher perception of student push for academic improvement



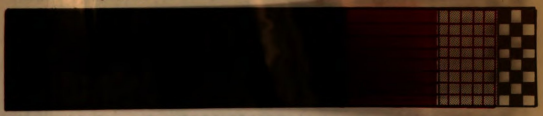
B = Variance accounted for by teacher-principal encouragement for improvement that was masked by the effects of multicollinearity, where student reported sense of futility was entered into the equation first.

A = Variance significantly accounted for by SES that was masked by the effects of multicollinearity, where student reported sense of futility was entered into the equation first.

C, 1D, E = Residual variance accounted for by teacher perception of student push for academic improvement, student reported sense of futility, and teacher-principal encouragement for improvement, respectively, where SES was entered into the equation first.

FIGURE 4.1

Illustration of the Masking of Variance Due to the Effects of Multicollinearity Where the Results of the First and Third Multiple Regression Analyses are Considered Simultaneously



1 = Variance significantly accounted for by student reported sense of futility, upon being entered into the equation first.

D = Residual variance significantly accounted for by teacher perception of student push for academic improvement

B = Variance accounted for by teacher-principal encouragement for improvement that was masked by the effects of multicollinearity, where student reported sense of futility was entered into the equation first.

A = Variance significantly accounted for by SES that was masked by the effects of multicollinearity, where student reported sense of futility was entered into the equation first.

C, 1D, E = Residual variance accounted for by teacher perception of student push for academic improvement, student reported sense of futility, and teacher-principal encouragement for improvement, respectively, where SES was entered into the equation first.

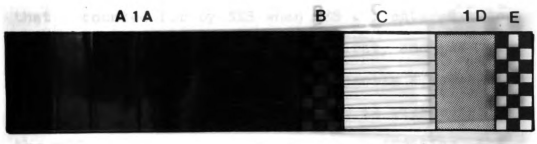
1A = Variance significantly accounted for by student reported sense of futility that was masked by the effects of multicollinearity, where SES was entered into the equation first.

D = Residual variance significantly accounted for by teacher perception of student push for academic improvement

I = Variance significantly accounted for by student reported sense of futility, upon being entered into the equation first.

FIGURE 4.1

Illustration of the Masking of Variance Due to the Effects of Multicollinearity Where the Results of the First and Third Multiple Regression Analyses are Considered Simultaneously



B = Variance accounted for by teacher-principal encouragement for improvement that was masked by the effects of multicollinearity, where student reported sense of futility was entered into the equation first.

A = Variance significantly accounted for by SES that was masked by the effects of multicollinearity, where student reported sense of futility was entered into the equation first.

C, 1D, E = Residual variance accounted for by teacher perception of student push for academic improvement, student reported sense of futility, and teacher-principal encouragement for improvement, respectively, where SES was entered into the equation first.

1A = Variance significantly accounted for by student reported sense of futility that was masked by the effects of multicollinearity, where SES was entered into the equation first.

B = Variance accounted for by teacher-principal encouragement for improvement that was masked by the effects of multicollinearity, where student reported sense of futility was entered into the equation first.

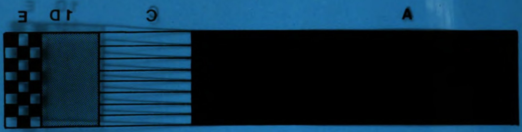
FIGURE 4.1

Illustration of the Masking of Variance Due to the Effects of Multicollinearity Where the Results of the First and Third Multiple Regression Analyses are Considered Simultaneously

A = Variance significantly accounted for by SES that was masked by the effects of multicollinearity, where student reported sense of futility was entered into the equation first.

C, 1D, E = Residual variance accounted for by teacher perception of student push for academic improvement, student reported sense of futility, and teacher-principal encouragement for improvement, respectively, where SES was entered into the equation first.

1A = Variance significantly accounted for by student reported sense of futility that was masked by the effects of multicollinearity, where SES was entered into the equation first.

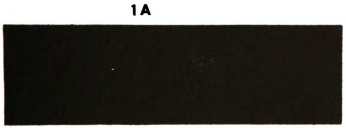


A = Variance significantly accounted for by SES that was masked by the effects of multicollinearity, where student reported sense of futility was entered into the equation first.

C, 1D, E = Residual variance accounted for by teacher perception of student push for academic improvement, student reported sense of futility, and teacher-principal encouragement for improvement, respectively, where SES was entered into the equation first.

FIGURE 4.1

Illustration of the Masking of Variance Due to the Effects of Multicollinearity Where the Results of the First and Third Multiple Regression Analyses are Considered Simultaneously



1A = Variance significantly accounted for by student reported sense of futility that was masked by the effects of multicollinearity, where SES was entered into the equation first.

analysis is attributable to the effects of multicollinearity--the intercorrelations that the four independent variables considered, maintained among themselves. By the same token, the fact that three academic climate variables significantly accounted for variance beyond that accounted for by SES when SES was entered into the multiple regression equation first, and only two academic climate variables significantly accounted for variance when SES was entered last, is attributable to the effects of multicollinearity. In addition, the fact that the academic climate variable, teacher perception of student drive for academic improvement, significantly accounted for 15.0% of the variance in achievement in the first analysis yet only accounted for 8.9% of the variance in the third analysis, and student reported sense of futility significantly accounted for 50.2% of the variance in the third analysis yet only accounted for an additional 9.1% beyond the variance accounted for SES in the first analysis, is also attributable to the effects of the interrelationship of the variables presently considered.

The fact that SES was entered behind 13 academic climate variables in the third multiple regression analysis executed (Table 4.3) may raise some doubts concerning the ability of SES to significantly account for variance beyond that accounted for by academic climate variables simply because of the number of variables that

preceded its entry into the multiple regression equation. This is not the case however. As was previously indicated, the ability of an independent variable to significantly account for variance beyond that significantly accounted for by variables that have preceded its entry into the multiple regression equation is a function of the intercorrelations existing among independent variables and/or the strength of a given variable's relationship to the dependent variable.

To illustrate the preceding notion, six additional multiple regression analyses were executed entering the independent variables SES and student reported sense of futility into the multiple regression equations with predetermined hierarchies established, along with the two other academic climate variables--teacher perceived student push for academic improvement, and teacher-principal encouragement for improvement--that significantly accounted for variance in either the first or third initial multiple regression analyses (Tables 4.1 and 4.3).

In three of the six analyses, SES was entered first into the multiple regression equation. In the next three, student reported sense of futility was entered first. Also, in the first three analyses, student reported sense of futility was entered second, third, and fourth behind SES. Likewise, SES was entered second, third, and fourth

behind student reported sense of futility in the next three analyses.

The analyses show that in each case where SES was entered first, it significantly accounted for 37.5% of variance in achievement among the schools in the sample. They further show that in each case where SES was entered first, three academic climate variables significantly accounted for an additional 31.1% of the variance beyond that accounted for by SES, and that student reported sense of futility significantly accounted for residual variance regardless of whether it was entered second, third, or fourth behind SES. Changes in the amount of residual variance significantly accounted for by student reported sense of futility are, again, attributable to the interrelationship existing between student reported sense of futility and the variable(s) preceding its entry into the multiple regression equation.

The analyses show that where student reported sense of futility was entered into the multiple regression equation first, it significantly accounted for 50.2% of the achievement variance. SES failed to significantly account for variance beyond that accounted for by academic climate variables, whether it was entered

second, third, or fourth behind student reported sense of futility.

The results of the six analyses indicate that although SES significantly accounted for variance in the achievement levels of the schools sampled, it failed to significantly account for variance beyond that significantly accounted for by academic climate variables regardless of the point at which it was entered into the multiple regression equation. The fact that the significance level of the variance accounted for by SES changed depending upon its point of entry into the multiple regression equation is, again, attributable to the effects of multicollinearity, which means that in each case where SES was not entered first, the variables preceding its entry into the multiple regression equation reduced the partial correlation of SES to the dependent variable achievement, to the extent that it was insufficient to account for variance beyond that accounted for by academic climate variables. The opposite was true in each case where student reported sense of futility was not entered first. A summary of the partial correlations maintained by SES and student reported sense of futility as they were each entered into three multiple regression equations is presented in Table 4.9. The results of the six multiple regression analyses are presented in Tables 4.10 and 4.11.

TABLE 4.9

Summary of Partial Correlations Maintained by Student Reported Sense of Futility and Mean School Socio-Economic Status with Achievement, Where Student Reported Sense of Futility Was Entered in Three Separate Multiple Regression Equations behind SES, and SES Entered in Three Separate Multiple Regression Equations behind Student Reported Sense of Futility

Student Reported Sense of Futility Entered behind SES					SES Entered behind Student Reported Sense of Futility				
Equation	Step	Partial Correlation	F Ratio	P less than	Equation	Step	Partial Correlation	F Ratio	P less than
1	2	-.471	07.71	.010*	1	2	.151	00.63	.435
2	3	-.438	06.17	.020*	2	3	.249	01.72	.201
3	4	-.434	05.80	.024*	3	4	.374	04.06	.055

*Significant at alpha = .05

TABLE 4.10

Summary of Three Separate Multiple Regressions (Forward Inclusion) of Mean School Socio-Economic Status and Three Academic Climate Variables* on Mean School Achievement, Where SES Was Entered into the Equations First, and Student Reported Sense of Futility Was Entered in Varying Order

Equation 1							
Step	Variable Entered	Simple r	Multiple R	R^2	R^2 Change	F Ratio	P less than
1	SES	.612	.612	.375	.375	16.78	.000 **
2	Student Reported Sense of Futility	-.709	.717	.514	.139	07.71	.010**
3	Teacher Perception of Student Drive for Academic Improvement	.372	.785	.616	.102	06.96	.014**
4	Teacher-Principal Encouragement for Improvement	.182	.828	.686	.070	05.52	.027**

(continued)

TABLE 4.10 (continued)

Equation 2							
Step	Variable Entered	Simple r	Multiple R	R^2	R^2 Change	F Ratio	P less than
1	SES	.612	.612	.375	.375	16.78	.000**
2	Teacher Perception of Student Drive for Academic Improvement	.372	.725	.525	.150	08.56	.007**
3	Student Reported Sense of Futility	-.709	.785	.616	.091	06.17	.020**
4	Teacher-Principal Encouragement for Improvement	.182	.828	.686	.070	05.52	.027**

(continued)

TABLE 4.10 (continued)

Equation 3							
Step	Variable Entered	Simple r	Multiple R	R^2	R^2 Change	F Ratio	P less than
1	SES	.612	.612	.375	.375	16.78	.000**
2	Teacher Perception of Student Drive for Academic Improvement	.372	.725	.525	.150	08.56	.007**
3	Teacher-Principal Encouragement for Improvement	.182	.783	.613	.088	05.86	.023**
4	Student Reported Sense of Futility	-.709	.828	.686	.073	05.80	.024**

*Academic climate variables that significantly accounted for variance beyond that accounted for by SES

**Significant at alpha = .05

TABLE 4.11

Summary of Three Separate Multiple Regressions (Forward Inclusion) of Mean School Socio-Economic Status and Three Academic Climate Variables* on Mean School Achievement, Where Student Reported Sense of Futility Was Entered into the Equations First, and SES Was Entered in Varying Order

Equation 1

Step	Variable Entered	Simple r	Multiple R	R^2	R^2 Change	F Ratio	P less than
1	Student Reported Sense of Futility	-.709	.709	.502	.502	28.25	.000**
2	SES	.612	.717	.514	.012	00.63	.435
3	Teacher Perception of Student Drive for Academic Improvement	.372	.785	.616	.102	06.96	.014**
4	Teacher-Principal Encouragement for Improvement	.182	.828	.686	.070	05.12	.027**

(continued)

TABLE 4.11 (continued)

Equation 2							
Step	Variable Entered	Simple r	Multiple R	R^2	R^2 Change	F Ratio	P less than
1	Student Reported Sense of Futility	-.709	.709	.502	.502	28.25	.000**
2	Teacher Perception of Student Drive for Academic Improvement	.327	.769	.591	.089	05.85	.023**
3	SES	.612	.785	.616	.025	01.72	.201
4	Teacher-Principal Encouragement for Improvement	.182	.828	.686	.070	05.52	.027**

(continued)

TABLE 4.11 (continued)

Equation 3							
Step	Variable Entered	Simple r	Multiple R	R^2	R^2 Change	F Ratio	P less than
1	Student Reported Sense of Futility	-.709	.709	.502	.502	28.25	.000**
2	Teacher Perception of Student Drive for Academic Improvement	.372	.769	.591	.089	05.85	.023**
3	Teacher-Principal Encouragement for Improvement	.182	.797	.635	.044	03.11	.090
4	SES	.612	.828	.686	.051	04.06	.055

*Academic climate variables that significantly accounted for variance beyond that accounted for by SES

**Significant at alpha = .05

Identification of Academic Climate Variable Accounting for Most Variance

The question of which academic climate variable would account for most of the variation in achievement is answered by examining the zero order correlations that academic climate variables maintained with achievement, as well as by examining the results of the regression analyses. When correlated with achievement, the academic climate variable, student reported sense of futility yielded the largest coefficient of all independent variables, including SES. The coefficient yielded was -.71.

When academic climate variables were entered into the regression equation first, with no a priori hierarchy established and SES entered last (see Table 4.3), the academic climate variable, student reported sense of futility, alone accounted for 50.2% of the variance in achievement where the total variance significantly accounted for was 59.1%. In the multiple regression analyses where SES was entered first and academic climate variables next, with no a priori hierarchy established (Table 4.1) student reported sense of futility was listed third, behind SES and teacher perception of student drive for academic improvement. As was previously noted, the fact that student reported sense of futility only contributed an additional 9.1% to the total variance significantly accounted for was attributed to its relationship to SES. When correlated, SES and student reported

sense of futility yielded a coefficient of -.77. The effects of this relationship caused the partial correlation that student reported sense of futility maintained with achievement, after SES was entered into the multiple regression equation, to drop below the partial correlation maintained by teacher perception of student drive for academic improvement. Thus, student reported sense of futility was listed third behind SES instead of second. However, the fact that student reported sense of futility was able to account for 85% of the total variance accounted for when academic climate variables were entered first into the multiple regression equation with no a priori hierarchy established and SES entered last (50.2% = 85% of 59.1%) clearly establishes it as the single independent variable that accounts for most of the variance in achievement among the schools in the sample.

Discussion

On the basis of paired comparisons of the initial multiple regression analyses executed (Table 4.8), it was determined that eliminating two academic climate variables on the basis of lowest zero order correlations with achievement as opposed to eliminating two variables on the basis of lowest zero order correlations to SES resulted in differences with respect to the magnitude of the amounts of variance accounted for by SES and

academic climate variables. The variables chosen for entry on the basis of correlations with achievement almost consistently accounted for more variance in achievement than did the variables chosen for entry on the basis of correlations with SES. There were, however, no differences with respect to the direction of the results. That is, in the first pair of analyses, academic climate variables significantly accounted for variance beyond that significantly accounted for by SES. In the second pair, academic climate variables significantly accounted for variance before the analyses were terminated. Finally, in the third pair, SES did not significantly account for variance beyond that accounted for by academic climate variables.

The results of the preceding analyses support the hypothesis advanced in this study. Several of the measures of academic climate used in the study significantly account for variance beyond that accounted for by academic climate variables.

Because of the apparent interrelationship of academic climate variables and SES, as indicated by zero order correlations of academic climate variables with SES, as well as the results of the regression analyses, the findings suggest that increasing the mean socio-economic status of students in schools like the ones in the sample used in this study without concomitant changes in academic climate, may not significantly improve

academic achievement. On the other hand, the results suggest that it may be possible to improve academic achievement by changing the academic climate that prevails in a given school, regardless of the mean socio-economic status of the students in that school.

Next, the six additional multiple regression equations that were executed using the four independent variables that significantly accounted for variance in the initial analyses, illustrated how the variance significantly accounted for by an independent variable in one analysis was masked by the effects of multicollinearity where that variable was entered at a different step in other analyses. These six analyses also illustrated that where SES was entered into the multiple regression equation second, third, or fourth, behind student reported sense of futility, it failed to significantly account for variance beyond that accounted for by the variables that preceded its entry into the equation. In contrast, however, where student reported sense of futility was entered second, third, or fourth behind SES it consistently accounted for variance beyond that accounted for by SES, and the other variables that preceded its entry into the multiple regression equation, thus indicating that the ability of an independent variable to account for residual variance is primarily a function of the strength of the relationship of that independent variable to the dependent variable over the effects of multicollinearity. These analyses supported the initial

finding that SES does not significantly account for variance beyond that accounted for by academic climate variables.

The identification of the academic climate variable, student reported sense of futility, as accounting for most of the variance in achievement among the schools in the sample was supported by the findings of Coleman et al. (1966), Henderson (1972), and Brookover et al. (1973). These researchers found that where they made comparisons, black students reported a higher sense of futility, or lower sense of control over their academic environments than white students. It was therefore anticipated that a high negative coefficient would result when achievement and student reported sense of futility were correlated.

The negative coefficient yielded when student reported sense of futility and achievement were correlated was the only negative correlation that was anticipated. Upon examining the zero order correlations presented in Table 4.4, however, it can be seen that two additional academic climate variables, principal efforts at improving achievement, and teacher perceived competition and teacher push, were negatively correlated with achievement.

The zero order correlations presented in Table 4.4 reflect the direction of the correlation of academic climate variables and SES with higher

achievement. That is, based on a priori considerations, it was determined how teachers, students, and principals in higher achieving schools would probably respond to the questions contained in the academic climate variables. The actual direction of the responses of teachers and principals to the questions contained in the academic climate variables, principal efforts at improving achievement and teacher perceived student competition and teacher push, were inconsistent with the directions that were anticipated. The direction of these two correlations with achievement warrants discussion.

Based upon the questions contained in the two variables and the direction of their correlations with higher achievement, the correlations suggest that principals of the higher achieving schools contained in the sample rarely discuss ways of improving student achievement with their teachers. It is also suggested that teachers in the higher achieving schools in the sample do not perceive a high sense of competition for the best grades among their students. Also, the teachers in the higher achieving schools indicated that they do not encourage those students who they feel do not have the resources or ability to achieve higher academically.

One explanation of the negative correlation of the academic climate variable, principal efforts at improving achievement, and the dependent variable,

achievement is that principals in the higher achieving schools are probably satisfied with the achievement levels of their schools and thus see no need to suggest ways of improving it. On the other hand, the principal of a lower achieving school would seem to be an individual who would be most concerned with improving achievement.

With respect to the negative correlation of the academic climate variable, teacher perceived student competition and teacher push, teachers in the higher achieving schools in the sample would probably suggest that there is no need for competition among students for the best grade when they can all get the best grade without competing among themselves. These same teachers probably feel that it does not make sense to encourage a student to do something that he or she cannot do, whatever the reason. On the other hand, teachers in lower achieving schools may feel that only a few will "make it" and that competition helps to strengthen determination. Thus, they may encourage an atmosphere of competition that extends even to those who they feel may not have the resources or ability to achieve higher. Investigation of these notions certainly seems warranted.

Further examination of the zero order correlations presented in Table 4.4 indicates that a number of the academic climate variables maintained high correlations

with the dependent variable, achievement. The fact that only three academic climate variables significantly accounted for variance beyond that accounted for by SES suggests that the relationship of the remaining variables to achievement may have been rendered insignificant in the multiple regression analyses due to their inter-relationship with the variables that did significantly account for variance. Therefore, the results of the analyses should not be interpreted to mean that the remaining academic climate variables may not have some impact upon achievement. This notion should be further investigated before any conclusions are drawn.

CHAPTER V

SUMMARY, LIMITATIONS, CONCLUSIONS, DISCUSSION, AND RECOMMENDATIONS

Summary

This study was developed from what many perceive to be a need for establishing a data base that is specifically representative to populations of black Americans, a data base from which inferences can be made to facilitate the development of counseling models that will be effective in use with these populations.

The primary purpose of this study was to determine if an analysis of the relationship of academic climate variables to academic achievement in predominantly black elementary schools would support a major premise advanced by the proponents of the systemic approach to counseling. Proponents of systemic counseling view the cause of most mental health problems as originating within social systems as opposed to originating within the client. The premise advanced states that the social-psychological climate that prevails in a given social system is the primary cause of certain behaviors exhibited by that system's members.

Support for this premise was sought through the

testing of the hypothesis which stated that the measures of school academic climate used in this study would significantly account for variance over and above that accounted for by measures of mean school socio-economic status (SES). SES is a crucial element in the hypothesis because of the commonly voiced notion that the effects of school environments are inseparable from the effects of SES.

Since the study was correlational, causal inferences could not be made concerning the findings. Thus, support for the premise stated above was determined by what Baggaley (1964) called "negative evidence." This means that if the findings of this study should not support the hypothesis advanced, a reconsideration of the hypothesis and/or the premise stated above would be in order. If the hypothesis should be supported, the implications of the correlations could be discussed, though causal inferences could not be made.

The units of analysis were 30 elementary schools having student body populations of greater than 50% black. These schools were randomly sampled from a population of 221 Michigan elementary schools, which comprise the state's total population of elementary schools having predominantly black student bodies.

The instruments used were revised versions of separate but interrelated teacher, student, and principal

questionnaires developed by Brookover et al. (1973). The questionnaires were designed to measure different aspects of academic climate, based primarily upon student, teacher and principal perceptions. The mean responses of 4,747 students, 143 teachers, and 30 principals were analyzed in this study. Achievement data were provided by Research, Evaluation and Assessment Services, Michigan Department of Education. SES data were gathered from both students and principals and were coded using a modified version of the Duncan Socioeconomic Index scale (Reiss et al., 1961).

The data were collected by black and/or integrated research teams consisting of individuals who had been trained to administer the questionnaires.

The academic climate variables used in this study were developed from factor analyses of data generated from a study by Brookover (1975) using the same instruments as those used in this study. The sample from which Brookover's data were collected consisted of 69 randomly sampled Michigan elementary schools, including seven schools that had predominantly black student bodies.

The data were analyzed using forward inclusion multiple regression analysis. An a priori alpha level was set at .05. The hypothesis tested was supported when SES and academic climate variables were entered into multiple regression equations in varying orders.

Three of the 14 academic climate variables entered into the regression equations significantly accounted for variance over and above that accounted for by SES. However, SES did not significantly account for variance over and above that accounted for by academic climate variables. SES accounted for 37.5% of the variance when it was entered into the regression equation first. An additional 31.1% of the variance was accounted for by entering the academic climate variables into the equation after SES. The academic climate variables accounted for 59.1% of the variance when they were entered into the regression equation before SES. SES did not significantly account for variance beyond that accounted for by academic climate variables.

Thus, the lack of negative evidence suggests that the social-psychological climate that prevails in a given social system may be the cause of certain behaviors exhibited by that system's members.

The academic climate variable, student reported sense of futility, was identified as the single independent variable which accounted for most of the variance among the achievement levels of the schools in the sample. This variable was a measure of the students' perception of their ability to control or influence the "system" around them, particularly those aspects of the school system which influence achievement. A coefficient of -.71 was obtained when student reported sense of futility

was correlated with achievement. This variable alone was responsible for 85% of the total variance significantly accounted for by academic climate variables and SES, where academic climate variables were entered into the regression equation first and SES entered last. Thus, the evidence from the study supported the hypothesis advanced. The evidence further indicates that student reported sense of futility may have the single most important effect on achievement of all the independent variables considered in the study.

Limitations

Several limitations regarding the execution of this present research have emerged after reviewing the procedures, methodology, instruments, and the decision model used in gathering and analyzing the data. They are as follows:

1. Occupation has long been considered the single, most accurate measure of socio-economic status (SES). A commonly accepted definition of SES, however, is yet to be formulated. Therefore the same uncertainties that center around the lack of a commonly accepted definition of socio-economic status are applicable to the findings of this study.
2. As was previously noted, this research was correlational rather than experimental.

That is, variables were identified and their statistical relationships were computed. However, no empirical evidence was provided concerning whether or not the effects of a certain variable or combination of variables was responsible for these relationships. Because of this fact, causal inferences cannot be made regarding the findings of this study.

3. One of the primary underlying assumptions of this study was that aspects of elementary school academic climate could be identified, and that academic climate significantly accounts for varying levels of achievement among elementary schools beyond that accounted for by mean school socio-economic status. It was further assumed that elementary school students could, and would, differentiate between their perceptions of school-level and classroom-level academic climate, and that student questionnaire items would reflect this differentiation. Since this study did not offer empirical evidence that student responses reflected school-level or classroom-level academic climate, the preceding factor must be considered a limitation.

4. An additional underlying assumption of this study was that subjects' reported perception's would accurately reflect whether or not, or the extent to which certain situations, behaviors or attitudes actually existed on the part of others. For instance, the question, "How many of the students in this school do more studying for weekly tests than they have to?" serves as a good example of this assumption. The research instruments were designed, for the most part, to solicit perceptions, for it is generally accepted that an individual's perceptions are real, for that individual. The study did not seek to determine the accuracy of respondents' perceptions because the study was concerned with responses to these perceptions, as measured by mean school achievement. However, the extent to which respondents were able to accurately assess certain situations, behaviors, or attitudes of others may possibly be considered a limitation.

Hopefully, the preceding limitations reflect an objective review of this research. In general, the study appears to be sound with respect to the procedures, methodology, and the decision model used in collecting and analyzing the data. For the most part, the limitations that have been identified do not appear to

jeopardize the external validity of the findings. However, some question can be raised concerning whether or not students' responses reflect their perceptions of classroom-level or school-level academic climate.

The construction of student questionnaire items suggests the assumption that elementary school students could and would differentiate between their perceptions of school-level and classroom-level academic climate. However, conclusions regarding this particular assumption cannot be made until this question has been investigated.

Conclusions

Based upon the findings of this study, as well as the procedures, methodology, and assumptions, the following conclusions can be drawn:

1. Since the sample used in this study was randomly selected and the methods of data collection are assumed to be consistent, the findings are therefore applicable to the population from which the sample was drawn, namely, (a) Certain academic climate variables significantly accounted for variance beyond that accounted for by SES, (b) SES did not significantly account for variance beyond that accounted for by academic climate variables, and (c) Student reported sense of futility was the academic climate variable that accounted for the most variance in achievement among the schools sampled.
2. Student sense of futility, teacher perception of student drive for academic improvement, and teacher-principal efforts at improving achievement, as measured by the research instruments used in this study, may significantly affect mean school achievement in Michigan's predominantly black schools, regardless of mean socio-economic status in these schools.

3. Student sense of futility may have the most significant impact of all the aspects of academic climate measured in the study, upon mean school achievement in Michigan's predominantly black elementary schools.
4. Changes in the mean socio-economic status (e.g., by busing) of Michigan's predominantly black elementary schools may not effectively improve achievement without concomitant changes in academic climate.
5. The results of this study should not be interpreted to suggest that mean school socio-economic status has no impact upon mean school achievement. However, since it is assumed that changes in mean school SES cannot be as readily effected as changes in academic climate, it is concluded that improvement in the achievement levels of Michigan's predominantly black elementary schools may be most readily effected by changes in academic climate.
6. Since it was assumed that social systems have similar components and behavioral properties, as defined in Figure 1.1, the findings concerning the social systems (schools or classrooms) in this study are apparently generalizable to other social systems. Thus, the lack of "negative evidence" from the findings of this study suggests that the social-psychological climate of a given social system may be the primary cause of certain behaviors exhibited by

that system's members. Because evidence has not been presented indicating whether student responses reflect school-level or classroom-level perceptions, the specific findings of this study concerning student perceptions, cannot be generalized to the school as a whole. However, because the classroom social system and the school social system are assumed to have similar components and behavioral properties to other social systems thus, to each other, the behavioral properties of the social system that was the focus of student responses can apparently be generalized to the school as a whole.

Discussion

The conclusions drawn from this study have far-reaching implications for education, counseling, and related fields. For those educators who are concerned with improving achievement in schools like those in the sample, the evidence from this study suggests that it may be possible to improve achievement regardless of the mean socio-economic status of the students. In this study, a set of academic climate variables that may be significantly contributing to the variation in the achievement levels among the schools in the sample has been

identified. The findings indicate that changing the mean socio-economic status of the students in these schools without concomitant changes in academic climate may not effectively enhance academic achievement.

The results of this study seriously challenge the potential effectiveness of counselors who simply attempt to modify the behavior of their clients to accommodate social system norms, since the data suggest that some social system norms may not be conducive to the growth, development, and general welfare of the client. The evidence from this study suggests that this may, in fact, be the case for many black youngsters in Michigan's predominantly black elementary schools. If the way a social problem is defined determines the attempts at remediation by suggesting the foci and techniques of intervention (Caplan & Nelson, 1972), and if clients' behaviors are mediated in part by the social-psychological climates that prevail in social systems, as the results of this study indicate may be the case, then it stands to reason that those intervention techniques that fail to consider the possible effects of social system climate on client behavior will probably be ineffective with respect to problem solving.

As was pointed out in Chapter I, the proponents of the systemic approach to counseling advocate a reordering of the direction of counseling techniques. They believe

that social systems are primarily responsible for many of the so-called "deviant" behaviors that individuals exhibit. Again, if social system climates are primarily responsible for certain behaviors that clients exhibit, then the counselor who is able to recognize that the cause of the problem lies outside of the client is in a more reasonable position to formulate a resolution of the problem.

The review of the literature pertinent to this study reflected concern over attempts to generalize research findings to black populations where no attempts to explore differences between black and other populations were made. This concern appears to be justified when the results of this study are compared to findings concerning academic climate in predominantly white elementary schools.

Upon examining the results of an analysis of the relationship of some of the measures of academic climate and SES used in this study to the achievement levels of a random sample of 62 predominantly white Michigan schools by Brookover and Schneider (1975), it was found that a number of differences existed between the results of their analyses and the results of the analyses executed in this study, even though the same types of analyses and many of the same measures of academic climate were used (Brookover and Schneider did not use the five academic

climate variables obtained from principal responses to questionnaire items). It was found that differences existed with respect to which academic climate variables significantly accounted for variance, the direction of some of the zero order correlations, and the means and standard deviations of variable scores.

Brookover and Schneider found that the academic climate variable, student reported sense of futility, emerged as the academic climate variable that accounted for most of the variance in achievement among the schools in their sample. Their results show, however, that student reported sense of futility did not significantly account for variance beyond that accounted for by SES. This finding suggests that the impact that "futility" probably has on achievement, in part depends upon the racial composition of a school's student body. The apparent differences in academic climate between predominantly black and predominantly white schools lend credence to the concern voiced in the literature over the ineffectiveness of traditional counseling models with black populations. These apparent differences between black and white populations require counseling models equipped to handle those differences--models that are effective in resolving problems related to racial or cultural differences.

Although the perceived effectiveness of the systemic

approach to counseling is not limited to a single population, its development was fostered by a need to formulate counseling models that will be effective in use with populations of black Americans.

Previous research (Henderson, 1972; Brookover et al., 1973) support the notion that differences in academic climate exist between predominantly black and predominantly white schools. If academic climate is causally related to achievement, then given the differences that exist between predominantly black and predominantly white schools with respect to academic climate, different strategies would be necessary to effect positive changes in achievement depending upon whether the school is predominantly black or predominantly white. Thus, factors related to achievement may differ in terms of importance and impact, depending upon the racial composition of a school's student body.

Finally, the model of social system behavior which was formulated in Chapter I (Figure 1.1), based on the premise that the climate in a given social system is the primary cause of certain behaviors exhibited by that system's members, can be used to explain the findings of this study and thus, has construct validity.

For instance, the model advances the notion that administrator members of a social system, in part, determine certain behaviors exhibited by that system's recipient members. Evidence from this study suggests that this behavioral relationship may exist between the teachers (administrator members) and students (recipient members) of the schools in the sample.

A comparison of Brookover and Schneider's findings (1975) to the findings of this study suggest that black students report a higher sense of futility than do white students. This notion is supported by previous research (Coleman et al., 1966; Henderson, 1972; Brookover et al., 1973). That students in predominantly black schools would report a higher sense of futility is a phenomenon that can also be accounted for by the model. The model does so by advancing the notion that recipient social system members are characterized by feelings of "powerlessness," and that race, among other things, is a factor that can contribute to this feeling.

To summarize, the evidence from this research lends credence to many of the issues and concerns that were found while reviewing the literature pertinent to this study. The lack of negative evidence concerning the philosophy underlying systemic intervention suggests that this approach to counseling may prove to be an effective alternative to traditional counseling models.

Recommendations

In this final section, a list of recommendations is presented concerning the findings and how they might be used in future research, education, counseling, and counselor training programs.

Research

The findings of this study have suggested answers to some questions concerning the relationship of academic climate to achievement; a number of questions still remain. Based upon the questions that have been answered, and the ones that remain, it is recommended that future researchers:

1. Attempt to determine what causal relationships exist between the academic climate variables identified in this study and academic achievement, including those that did not significantly account for variance.
2. Determine what effects school climates have on other behaviors exhibited by students.
3. Make a comprehensive assessment of the differences in academic climate that exist between predominantly black and predominantly white elementary schools.

It is further recommended that research concerning social-psychological climates in other social systems, such as family, business, and secondary school, be

undertaken. The findings of this research have helped give direction to the approach that such studies should take. More specifically, it is recommended that these studies:

1. First, identify those social system climate variables that may be affecting certain behavior(s) exhibited by system members.
2. After identifying these variables, determine what causal relationships exist between them and the behavior(s) considered.

Education

Based upon the findings of this study, the following recommendations are made concerning their use in education. It is recommended that educators:

1. Formulate and test strategies that are designed to improve achievement through changes in academic climate.
2. Encourage further research concerning school climate as it relates to student behavior.
3. Expose teachers in training to the literature concerning school climate and achievement.

Counseling

Concerning the application of the findings of this study by counselors, it is recommended that practicing counselors:

1. Determine whether they and their clients perceive the techniques that they commonly practice to be more or less effective than techniques that are guided by the notion that social systems cause many of the problems that they are asked to resolve. That is, they should test their methods against the methods advocated by the proponents of systemic intervention.
2. Consider the possibility that certain behaviors exhibited by a client may be caused by a social system's behavior toward that client's color or culture. This consideration would also involve the testing of presently practiced techniques against those advocated by the proponents of systemic intervention.

Counselor Training Programs

With respect to counselor training programs, the following recommendations are made based on the findings of this study. It is recommended that counselor training programs:

1. Expose counselors in training to the literature concerned with the relationship of social system environment to human behavior.

2. Support and encourage research by counselors in training concerning the effects of social climate on human behavior.
3. Provide for the study of the cultural dynamics of those minority groups with whom counselors in training intend to practice.

APPENDICES

APPENDIX A

FACTORS PRODUCED BY BROOKOVER (1975), USED IN DETERMINING MEASURES OF ACADEMIC CLIMATE

APPENDIX A

FACTORS PRODUCED BY BROOKOVER (1975), USED IN DETERMING MEASURES OF ACADEMIC CLIMATE

Student Factor 1 Formed the Basis of the Academic Climate Variable, Student Reported Sense of Futility

Factor Loading Score	
.61	13. How many students in this school don't care if they get bad grades? Almost all of the students.....1 Most of the students.....2 Half of the students.....3 Some of the students.....4 Almost None of the students.....5
.71	14. How many students in this school do more studying for weekly tests than they have to? Almost all of the students.....1 Most of the students.....2 Half of the students.....3 Some of the students.....4 Almost none of the students.....5
.42	19. How many students in this class think reading is a fun thing to do and read even when they don't have to? Almost all of the students.....1 Most of the students.....2 About half of the students.....3 Some of the students.....4 None of the students.....5

Factor Loading Score	
.68	20. How many students in this school make fun of or tease students who get real good grades? Almost all of the students.....1 Most of the students.....2 About half of the students.....3 Some of the students.....4 None of the students.....5
.79	21. How many students don't do as well as they could do in school because they are afraid other students won't like them as much? Almost all of the students.....1 Most of the students.....2 About half of the students.....3 Some of the students.....4 None of the students.....5
.80	22. How many students don't do as well as they could do in school because they are afraid their friends won't like them as much? Almost all of the students.....1 Most of the students.....2 About half of the students.....3 Some of the students.....4 None of the students.....5
.65	23. How many students in this school would study hard if their work wasn't graded by the teachers? Almost all of the students.....1 Most of the students.....2 About half of the students.....3 Some of the students.....4 None of the students.....5

Factor Loading Score	
.63	24. People like me will not have much of a chance to do what we want to in life. Strongly agree.....1 Agree.....2 Disagree.....3 Strongly disagree.....4
.72	25. People like me will never do well in school even though we try hard. Strongly agree.....1 Agree.....2 Disagree.....3 Strongly disagree.....4
.71	27. In this school, students like me don't have any luck. Strongly agree.....1 Agree.....2 Disagree.....3 Strongly disagree.....4
.80	28. You have to be lucky to get good grades in this school. Strongly agree.....1 Agree.....2 Disagree.....3 Strongly disagree.....4
.77	40. How many teachers in this school tell students to try and get better grades than their classmates? Almost all of the teachers.....1 Most of the teachers.....2 Half of the teachers.....3 Some of the teachers.....4 Almost none of the teachers.....5

Factor Loading Score		
.77	41.	Of the teachers that you know in this school, how many don't care if the students get bad grades? Almost all of the teachers.....1 Most of the teachers.....2 Half of the teachers.....3 Some of the teachers.....4 Almost none of the teachers.....5
.56	42.	Of the teachers that you know in this school, how many tell students to do extra work so that they can get better grades? Almost all of the teachers.....1 Most of the teachers.....2 Half of the teachers.....3 Some of the teachers.....4 Almost none of the teachers.....5
.66	43.	Of the teachers that you know in this school, how many make the students work too hard? Almost all of the teachers.....1 Most of the teachers.....2 Half of the teachers.....3 Some of the teachers.....4 Almost none of the teachers.....5
.82	44.	Of the teachers that you know in this school, how many don't care how hard the student works, as long as he passes? Almost all of the teachers.....1 Most of the teachers.....2 Half of the teachers.....3 Some of the teachers.....4 Almost none of the teachers.....5

Factor Loading Score	
.60	47. Think of your teacher. Would your teacher say you can do school work better, the same or poorer than other people your age? Better than all of them.....1 Better than some of them.....2 Same as most of them.....3 Poorer than most of them.....4 Poorer than all of them.....5
.56	57. How good of a student do your parents expect you to be in school? One of the best.....1 Better than most of the students.....2 Same as most of the students.....3 Not as good as most of the students.....4 One of the worst.....5
.77	58. Think of your parents. Do your parents say you can do school work better, the same or poorer than your friends? Better than all of them.....1 Better than most of them.....2 Same as most of them.....3 Poorer than most of them.....4 Poorer than all of them.....5
.59	59. Would your parents say that your grades would be with the best, same as most or below most of the students when you finish high school? One of the best.....1 Better than most of the students.....2 Same as most of the students.....3 Not as good as most of the students.....4 One of the worst.....5

Student Factor 2 Formed the Basis of the Academic Climate Variable, Student Perceived Future Evaluations-Expectations

Factor Loading Score	
.88	9. If you could go as far as you wanted in school, how far would you like to go? Finish grade school.....1 Go to high school for a while.....2 Finish high school.....3 Go to college for a while.....4 Finish college.....5
.86	10. Sometimes what you want to happen is not what you think will happen. How far do you think you will go in school? Finish grade school.....1 Go to high school for a while.....2 Finish high school.....3 Go to college for a while.....4 Finish college.....5
.72	15. If most of the students here could go as far as they wanted in school, how far would they go? Finish grade school.....1 Go to high school for a while.....2 Finish high school.....3 Go to college for a while.....4 Finish college.....5
.82	38. How far do you think your best friend believes you will go in school? Finish grade school.....1 Go to high school for a while.....2 Finish high school.....3 Go to college for a while.....4 Finish college.....5

Factor Loading Score		
.78	45.	How far do you think the teacher you like the best believes you will go in school? Finish grade school.....1 Go to high school for a while.....2 Finish high school.....3 Go to college for a while.....4 Finish college.....5
-.53	48.	Would your teacher say that your grades would be with the best, same as most or below most of the students when you graduate from high school? One of the best.....1 Better than most of the students.....2 Same as most of the students.....3 Below most of the students.....4 One of the worst.....5
.79	56.	How far do you think your parents believe you will go in school? Finish grade school.....1 Go to high school for a while.....2 Finish high school.....3 Go to college for a while.....4 Finish college.....5
-.82	60.	Do you parents think you could finish college? Yes, for sure.....1 Yes, probably.....2 Maybe.....3 No, probably not.....4 No, for sure.....5
-.68	61.	Remember, you need more than four years of college to be a teacher or doctor. Do your parents think you could do that? Yes, for sure.....1 Yes, probably.....2 Maybe.....3 No, probably not.....4 No, for sure.....5

Student Factor 3 Formed the Basis of the Academic Climate Variable, Student Perceived Teacher Push for Student Improvement

Factor Loading Score	
.51	39. Of the teachers that you know in this school, how many tell students to try hard to do better on tests? Almost all of the teachers.....1 Most of the teachers.....2 Half of the teachers.....3 Some of the teachers.....4 Almost none of the teachers.....5
.57	46. How good of a student does the teacher you like the best expect you to be in school? One of the best.....1 Better than most of the students.....2 Same as most of the students.....3 Not as good as most of the students.....4 One of the worst.....5
.78	49. How often do teachers in this school try to help students who do badly on their school work? They always try to help.....1 They usually try to help.....2 They sometimes try to help.....3 They seldom try to help.....4 They never try to help.....5
.49	51. Compared to students from other schools, how well will most of the students from this school do in high school? They will be among the best.....1 They will do better than most.....2 They will do about the same as most.....3 They will do poorer than most.....4 They will be among the worst.....5

Factor Loading Score	
.70	52. How important is it to teachers in this school that their students learn their school work? It is the most important thing to the teachers.....1 It is very important to the teachers.....2 It is somewhat important to the teachers.....3 It is not very important to the teachers.....4 It is not important at all to the teachers.....5
.69	53. Think about the teachers you know in this school. Do you think the teachers in this school care more, or less, than teachers in other schools about whether or not their students learn their school work? Teachers in this school care a lot more.....1 Teachers in this school care a little more.....2 There is no difference.....3 Teachers in this school care a little less.....4 Teachers in this school care a lot less.....5
.61	54. Does your teacher think you could finish college? Yes, for sure.....1 Yes, probably.....2 Maybe.....3 Probably not.....4 No, for sure.....5
.60	55. Remember you need more than four years of college to be a teacher or doctor. Does your teacher think you could do that? Yes, for sure.....1 Yes, probably.....2 Maybe.....3 Probably not.....4 No, for sure.....5

Student Factor 4 Formed the Basis of the Academic Climate Variable, Student Academic Competition Norms

Factor Loading Score	
	11. How many students in this school try hard to get a good grade on their weekly tests?
.63	
	Almost all of the students.....1 Most of the students.....2 Half of the students.....3 Some of the students.....4 Almost none of the students.....5
.76	12. How many students in this school will work hard to get a better grade on the weekly tests than their friends do?
	Almost all of the students.....1 Most of the students.....2 Half of the students.....3 Some of the students.....4 Almost none of the students.....5
	17. How important do most of the students in this class feel it is to do well in school work?
.56	
	They feel it is very important.....1 They feel it is important.....2 They feel it is somewhat important.....3 They feel it is not very important.....4 They feel it is not important at all.....5
	18. How important do you think most of the students in this school feel it is to do well in school work?
.67	
	They feel it is very important.....1 They feel it is important.....2 They feel it is somewhat important.....3 They feel it is not very important.....4 They feel it is not important at all.....5

Factor Loading Score	
.51	50. Compared to students in other schools, how much do students in this school learn?

They learn a lot more in this school.....1
They learn a little more in this school.....2
About the same as in other schools.....3
They learn a little bit less in this school.....4
They learn a lot less in this school.....5

Student Factor 5 Formed the Basis of the Academic Climate Variable, Student Perceived Present Evaluations-Expectations

Factor Loading Score		
.58	16.	How important is it to you to be a good student? Very important.....1 Important.....2 Somewhat important.....3 Not very important.....4 Not important at all.....5
.61	26.	I can do well in school if I work hard. Strongly agree.....1 Agree.....2 Disagree.....3 Strongly disagree.....4

Teacher Factor 1 Formed the Basis of the Academic Climate Variable, Teacher Future Evaluations-Expectations of Students

Factor Loading Score		
.41	20.	On the average, what level of achievement can be expected of the students in your class? Much above national norm.....1 Slightly above national norm.....2 Approximately at national norm.....3 Slightly below national norm.....4 Much below national norm.....5
.85	23.	What percent of the students in this school do you expect to attend college? 90% or more.....1 70% to 89%.....2 50% to 69%.....3 30% to 49%.....4 Less than 30%.....5
.78	24.	What percent of the students in your class do you expect to attend college? 90% or more.....1 70% to 89%.....2 50% to 69%.....3 30% to 49%.....4 Less than 30%.....5
.88	25.	What percent of the students in this school do you expect to complete college? 90% or more.....1 70% to 89%.....2 50% to 69%.....3 30% to 49%.....4 Less than 30%.....5

Factor Loading Score	
.80	26. What percent of the students in your <u>class</u> do you expect to <u>complete</u> college? 90% or more.....1 70% to 89%.....2 50% to 69%.....3 30% to 49%.....4 Less than 30%.....5
.62	27. How many of the students in this <u>school</u> are capable of getting mostly A's and B's? 90% or more.....1 70% to 89%.....2 50% to 69%.....3 30% to 49%.....4 Less than 30%.....5
.53	28. How many of the students in your <u>class</u> are capable of getting mostly A's and B's? 90% or more.....1 70% to 89%.....2 50% to 69%.....3 30% to 49%.....4 Less than 30%.....5
.59	29. How would you rate the academic ability of the students in this <u>school</u> compared to other schools? Ability here is much higher.....1 Ability here is somewhat higher.....2 Ability here is about the same.....3 Ability here is somewhat lower.....4 Ability here is much lower.....5
.80	32. What percent of the students in this <u>school</u> would you say <u>want</u> to go to college? 90% or more.....1 70% to 89%.....2 50% to 69%.....3 30% to 49%.....4 Less than 30%.....5

Factor Loading Score		
.69	33.	What percent of the students in your <u>class</u> would you say <u>want</u> to go to college? 90% or more.....1 70% to 89%.....2 50% to 69%.....3 30% to 49%.....4 Less than 30%.....5
.81	38.	What percent of the students in this school do you think the principal expects to <u>attend</u> college? 90% or more.....1 70% to 89%.....2 50% to 69%.....3 30% to 49%.....4 Less than 30%.....5
.84	39.	What percent of the students in this school do you think the principal expects to <u>complete</u> college? 90% or more.....1 70% to 89%.....2 50% to 69%.....3 30% to 49%.....4 Less than 30%.....5
.67	40.	How many students in this school do you think the principal believes are capable of getting mostly A's and B's? 90% or more.....1 70% to 89%.....2 50% to 69%.....3 30% to 49%.....4 Less than 30%.....5

Factor Loading Score		
.58	41.	How do you think your principal rates the academic ability of the students in this school, compared to other schools? Rates it much higher.....1 Rates it somewhat better.....2 Rates it the same.....3 Rates it somewhat lower.....4 Rates it much lower.....5
.65	43.	Completion of college is a realistic goal which you set for what percentage of your students? 90% or more.....1 70% to 89%.....2 50% to 69%.....3 30% to 49%.....4 Less than 30%.....5
.49	58.	How many students in this <u>school</u> will seek extra work so that they can get better grades? Almost all of the students.....1 Most of the students.....2 About half of the students.....3 Some of the students.....4 Almost none of the students.....5
.58	63.	How many of the parents of the students in this school expect their children to complete college? Almost all of the parents.....1 Most of the parents.....2 About half of the parents.....3 Some of the parents.....4 Almost none of the parents.....5

Teacher Factor 2 Formed the Basis of the Academic Climate Variable, Teacher Present Evaluations-Expectations of Students

Factor Loading Score		
.81	21.	What percent of the students in this school do you expect to complete high school? 90% or more.....1 70% to 89%.....2 50% to 69%.....3 30% to 49%.....4 Less than 30%.....5
.81	22.	What percent of the students in your class do you expect to complete high school? 90% or more.....1 70% to 89%.....2 50% to 69%.....3 30% to 49%.....4 Less than 30%.....5
.97	30	What percent of the students in this school would you say want to complete high school? 90% or more.....1 70% to 89%.....2 50% to 69%.....3 30% to 49%.....4 Less than 30%.....5
.91	31.	What percent of the students in your class would you say want to complete high school? 90% or more.....1 70% to 89%.....2 50% to 69%.....3 30% to 49%.....4 Less than 30%.....5

Factor Loading Score		
.60	37.	What percent of the students in this school do you think the principal expects to complete high school? 90% or more.....1 70% to 89%.....2 50% to 69%.....3 30% to 49%.....4 Less than 30%.....5
.70	42.	Completion of high school is a realistic goal which you set for what percentage of your students? 90% or more.....1 70% to 89%.....2 50% to 69%.....3 30% to 49%.....4 Less than 30%.....5
-.50	44.	How often do you stress to your students the necessity of a high school education for a good job and/or a comfortable life? Very often.....1 Often.....2 Sometimes.....3 Seldom.....4 Never.....5
.64	62.	How many of the parents of students in this school expect their children to complete high school? Almost all of the parents.....1 Most of the parents.....2 About half of the parents.....3 Some of the parents.....4 Almost none of the parents.....5

Teacher Factor 3 Formed the Basis of the Academic Climate Variable, Teacher Perception of Parents' Value of Education

Factor Loading Score		
.53	19.	On the average, what level of achievement can be expected of the students in this school? Much above national norm.....1 Slightly above national norm.....2 Approximately at national norm.....3 Slightly below national norm.....4 Much below national norm.....5
-.77	60.	The parents of students in this school regard this school primarily as a "baby-sitting" agency. Strongly agree.....1 Agree.....2 Not sure.....3 Disagree.....4 Strongly disagree.....5
.67	61.	The parents of students in this school are deeply concerned that their children receive a top quality education. Strongly agree.....1 Agree.....2 Not sure.....3 Disagree.....4 Strongly disagree.....5
-.78	64.	How many of the parents of students in this school don't care if their children obtain low grades? Almost all of the parents.....1 Most of the parents.....2 About half of the parents.....3 Some of the parents.....4 Almost none of the parents.....5

Factor Loading Score	
.74	65. How many of the parents of students in this school want feedback from the principal and teachers on how their children are doing in school? Almost all of the parents.....1 Most of the parents.....2 About half of the parents.....3 Some of the parents.....4 Almost none of the parents.....5

Teacher Factor 4 Formed the Basis of the Academic Climate Variable, Teacher Perceived Student Competition and Teacher Push

Factor Loading Score		
.48	45.	Do you encourage your students who do not have sufficient economic resources to aspire to go to college? Always.....1 Usually.....2 Sometimes.....3 Seldom.....4 Never.....5
.57	46.	Do you encourage your students who do not have sufficient academic ability to aspire to go to college? Always.....1 Usually.....2 Sometimes.....3 Seldom.....4 Never.....5
-.57	48.	It would be unfair for teachers in this school to insist on a higher level of achievement from students than they now seem capable of achieving? Strongly agree.....1 Agree.....2 Not sure.....3 Disagree.....4 Strongly disagree.....5
-.48	49.	If I think a student is not able to do some school work, I don't try to push him very hard? Strongly agree.....1 Agree.....2 Not sure.....3 Disagree.....4 Strongly disagree.....5

Factor Loading Score	
-.49	50. I am generally very careful not to push students to a level of frustration. Strongly agree.....1 Agree.....2 Not sure.....3 Disagree.....4 Strongly disagree.....5
.74	54. How many students in this <u>school</u> will try hard to do better school work than their friends do? Almost all of the students.....1 Most of the students.....2 About half of the students.....3 Some of the students.....4 Almost none of the students.....5
.78	55. How many students in your <u>class</u> will try hard to do better school work than their classmates do? Almost all of the students.....1 Most of the students.....2 About half of the students.....3 Some of the students.....4 Almost none of the students.....5

Teacher Factor 5 Formed the Basis of the Academic Climate Variable, Teacher Perception of Student Drive for Academic Improvement

Factor Loading Score	
.60	52. How many students in this school try hard to improve on previous work? Almost all of the students.....1 Most of the students.....2 About half of the students.....3 Some of the students.....4 Almost none of the students.....5
.66	53. How many students in your class try hard to improve on previous work? Almost all of the students.....1 Most of the students.....2 About half of the students.....3 Some of the students.....4 Almost none of the students.....5
-.40	56. How many students in this school are content to do less than they should? Almost all of the students.....1 Most of the students.....2 About half of the students.....3 Some of the students.....4 Almost none of the students.....5
-.69	57. How many students in your class are content to do less than they should? Almost all of the students.....1 Most of the students.....2 About half of the students.....3 Some of the students.....4 Almost none of the students.....5

Factor Loading Score	
.51	59. How many students in your <u>class</u> will seek extra work so that they can get better grades?

Almost all of the students.....1
Most of the students.....2
About half of the students.....3
Some of the students.....4
Almost none of the students.....5

Teacher Factor 6 Formed the Basis of the Academic Climate Variable, Teacher-Principal Encouragement for Improvement

Factor Loading Score		
.71	47.	How many teachers in this school feel that all their students should be taught to read well and master other academic subjects, even though some students may not appear to be interested? Almost all of the teachers.....1 Most of the teachers.....2 Half of the teachers.....3 Some of the teachers.....4 Almost none of the teachers.....5
.43	51.	How many teachers encourage students to seek extra school work so that the students can get better grades? Almost all of the teachers.....1 Most of the teachers.....2 About half of the teachers.....3 Some of the teachers.....4 Almost none of the teachers.....5
.77	75.	How often does the principal and/or other administrators in this school assist and give support to the teachers on ways to improve their students' academic achievement? Very often.....1 Often.....2 Sometimes.....3 Seldom.....4 Never.....5
.78	78.	When you are trying to improve your instructional program, how easy or difficult is it to get the principal's assistance? Very easy.....1 Easy.....2 Varies from time to time.....3 Difficult.....4 Very difficult.....5

Teacher Factor 7 Also Formed the Basis of the Academic Climate Variable, Teacher Present Evaluations-Expectations of Students

Factor Loading Score	
.58	76. One important criterion for evaluating a teacher's performance should be how well his/her students achieve academically.

Strongly agree.....1
Agree.....2
Not Sure.....3
Disagree.....4
Strongly disagree.....5

-.37	77. In this school, there is really very little a teacher can do to insure that all of his/her students achieve at a high level.

Strongly agree.....1
Agree.....2
Not sure.....3
Disagree.....4
Strongly disagree.....5

Principal Factor 1 Formed the Basis of the Academic Climate Variable, Principal Future Evaluations-Expectations of of Students

Factor Loading Score	
.37	19. With regard to student achievement, how good a school do you think this school <u>can</u> be? Among the best.....1 Better than average.....2 About average.....3 Below average.....4 Inferior.....5
.82	38. What percent of the students in this school do you expect to <u>attend</u> college? 90% or more.....1 70% to 89%.....2 50% to 69%.....3 30% to 49%.....4 Less than 30%.....5
.83	39. What percent of the students in this school do you expect to <u>complete</u> college? 90% or more.....1 70% to 89%.....2 50% to 69%.....3 30% to 49%.....4 Less than 30%.....5
.57	41. How would you rate the academic ability of the students in this school compared to other schools? Ability here is much higher.....1 Ability here is somewhat higher.....2 Ability here is about the same.....3 Ability here is somewhat lower.....4 Ability here is much lower.....5

Factor Loading Score	
.63	45. How many of the parents of students in this school expect their children to complete college? Almost all of the parents.....1 Most of the parents.....2 About half of the parents.....3 Some of the parents.....4 Almost none of the parents.....5

Principal Factor 2 Formed the Basis of the Academic Climate Variable, Principal Perception of Parental Concern

Factor Loading Score		
-.46	42.	The parents of students in this school regard this school as primarily a "baby-sitting" agency. Strongly agree.....1 Agree.....2 Unsure.....3 Disagree.....4 Strongly disagree.....5
.72	43.	The parents of students in this school are deeply concerned that their children receive a top quality education. Strongly agree.....1 Agree.....2 Unsure.....3 Disagree.....4 Strongly disagree.....5
.68	44.	How many of the parents of students in this school expect their children to complete high school? Almost all of the parents.....1 Most of the parents.....2 About half of the parents.....3 Some of the parents.....4 Almost none of the parents.....5
-.73	46.	How many of the parents of students in this school don't care if their children obtain low grades? Almost all of the parents.....1 Most of the parents.....2 About half of the parents.....3 Some of the parents.....4 Almost none of the parents.....5

Factor Loading Score	
.73	47. How many of the parents of students in this school want feedback from the principal and teachers on how their children are doing in school? Almost all of the parents.....1 Most of the parents.....2 About half of the parents.....3 Some of the parents.....4 Almost none of the parents.....5

Principal Factor 3 Formed the Basis of the Academic Climate Variable, Principal Evaluation of School

Factor Loading Score		
.68	17.	In your judgement, what is the general reputation of this school among educators? Among the best.....1 Better than average.....2 About average.....3 Below average.....4 Inferior.....5
.69	18.	With regard to student achievement, how would you rate this school? Among the best.....1 Better than average.....2 About average.....3 Below average.....4 Inferior.....5
.70	70.	In general, how do your students' parents feel about the achievement of their children? Nearly all feel they are doing well.....1 Most think students are achieving as well as they should.....2 Most think their children are NOT achieving high enough.....3 Nearly all think they are NOT achieving high enough.....4
.85	71.	In general, how do you feel about the achievement of the students in this school? Nearly all students are achieving as well as they can.....1 Most students are achieving as well as they can.....2 Less than half of the students are achieving as well as they can.....3 Only a few of the students are achieving as well as they can.....4

Principal Factor 4 Formed the Basis of the Academic Climate Variable, Principal Efforts at Improving Achievement

Factor Loading Score		
.89	56.	How often do you suggest ways of improving student achievement to your teachers? Very often.....1 Often.....2 Sometimes.....3 Seldom.....4 Never.....5
.89	57.	How often do you meet with the teachers as a group to discuss ways of improving student achievement? Very often.....1 Often.....2 Sometimes.....3 Seldom.....4 Never.....5

Principal Factor 5 Formed the Basis of the Academic Climate Variable, Principal Present Evaluations-Expectations of Students

Factor Loading Score		
.58	36.	On the average, what achievement level can be expected of the students in this school? Much above national norm.....1 Slightly above national norm.....2 Approximately at national norm.....3 Slightly below national norm.....4 Much below national norm.....5
.58	37.	What percent of the students in this school do you expect to complete high school? 90% or more.....1 70% to 89%.....2 50% to 69%.....3 30% to 49%.....4 Less than 30%.....5
.65	40.	How many of the students in this school are capable of getting good grades? 90% or more.....1 70% to 89%.....2 50% to 69%.....3 30% to 49%.....4 Less than 30%.....5
.35	54.	What percentage of the students in this school do you feel are capable of learning to read by the end of second grade? 100%.....1 90% to 99%.....2 80% to 89%.....3 70% to 79%.....4 50% to 69%.....5 Less than 50%.....6

APPENDIX B

QUESTIONS CONTAINED IN EACH ACADEMIC CLIMATE VARIABLE

APPENDIX B

QUESTIONS CONTAINED IN EACH ACADEMIC CLIMATE VARIABLE

Student Climate Variable 1:
Student Reported Sense of Futility

13. How many students in this school don't care if they get bad grades?

Almost all of the students.....1
Most of the students.....2
Half of the students.....3
Some of the students.....4
Almost none of the students.....5

14. How many students in this school do more studying for weekly tests than they have to?

Almost all of the students.....1
Most of the students.....2
Half of the students.....3
Some of the students.....4
Almost none of the students.....5

19. How many students in this class think reading is a fun thing to do and read even when they don't have to?

Almost all of the students.....1
Most of the students.....2
About half of the students.....3
Some of the students.....4
None of the students.....5

20. How many students in this school make fun of or tease students who get real good grades?

Almost all of the students.....1
Most of the students.....2
Almost half of the students....3
Some of the students.....4
None of the students.....5

21. How many students don't do as well as they could do in school because they are afraid other students won't like them as much?

Almost all of the students.....1
Most of the students.....2
About half of the students.....3
Some of the students.....4
None of the students.....5

22. How many students don't do as well as they could do in school because they are afraid their friends won't like them as much?

Almost all of the students.....1
Most of the students.....2
About half of the students.....3
Some of the students.....4
None of the students.....5

23. How many students in this school would study hard if their work wasn't graded by the teachers?

Almost all of the students.....1
Most of the students.....2
About half of the students.....3
Some of the students.....4
None of the students.....5

24. People like me will not have much of a chance to do what we want to in life.

Strongly agree.....1
Agree.....2
Disagree.....3
Strongly disagree.....4

25. People like me will never do well in school even though we try hard.

Strongly agree.....1
Agree.....2
Disagree.....3
Strongly disagree.....4

26. I can do well in school if I work hard.

Strongly agree.....1
Agree.....2
Disagree.....3
Strongly disagree.....4

27. In this school, students like me don't have any luck.

Strongly agree.....1
Agree.....2
Disagree.....3
Strongly disagree.....4

28. You have to be lucky to get good grades in this school.

Strongly agree.....1
Agree.....2
Disagree.....3
Strongly disagree.....4

40. How many teachers in this school tell students to try and get better grades than their classmates?

Almost all of the teachers.....1
Most of the teachers.....2
Half of the teachers.....3
Some of the teachers.....4
Almost none of the teachers.....5

41. Of the teachers that you know in this school, how many don't care if the students get bad grades?

Almost all of the teachers.....1
Most of the teachers.....2
Half of the teachers.....3
Some of the teachers.....4
Almost none of the teachers.....5

42. Of the teachers that you know in this school, how many tell students to do extra work so that they can get better grades?

Almost all of the teachers.....1
Most of the teachers.....2
Half of the teachers.....3
Some of the teachers.....4
Almost none of the teachers.....5

44. Of the teachers that you know in this school, how many don't care how hard the student works, as long as he passes?

Almost all of the teachers.....1
Most of the teachers.....2
Half of the teachers.....3
Some of the teachers.....4
Almost none of the teachers.....5

Student Climate Variable 2:
Student Perceived Present Evaluations-Expectations

16. How important is it to you to be a good student?

Very important.....1
Important.....2
Somewhat important.....3
Not very important.....4
Not important at all.....5

46. How good of a student does the teacher you like the best expect you to be in school?

One of the best.....1
Better than most of the students.....2
Same as most of the students.....3
Not as good as most of the students.....4
One of the worst.....5

48. Would your teacher say that your grades would be with the best, same as most or below most of the students when you graduate from high school?

One of the best.....1
Better than most of the students.....2
Same as most of the students.....3
Below most of the students.....4
One of the worst.....5

57. How good of a student do your parents expect you to be in school?

One of the best.....1
Better than most of the students.....2
Same as most of the students.....3
Not as good as most of the students.....4
One of the worst.....5

58. Think of your parents. Do your parents say you can do school work better, the same or poorer than your friends?

Better than all of them.....1
Better than most of them.....2
Same as most of them.....3
Poorer than most of them.....4
Poorer than all of them.....5

59. Would your parents say that your grades would be with the best, same as most or below most of the students when you finish high school?

One of the best.....1
Better tham most of the students.....2
Same as most of the students.....3
Not as good as most of the students.....4
One of the worst.....5

Student Climate Variable 3:
Student Perceived Future Evaluations-Expectations

9. If you could go as far as you wanted in school, how far would you like to go?

Finish grade school.....1
Go to high school for a while.....2
Finish high school.....3
Go to college for a while.....4
Finish college.....5

10. Sometimes what you want to happen is not what you think will happen. How far do you think you will go in school?

Finish grade school.....1
Go to high school for a while.....2
Finish high school.....3
Go to college for a while.....4
Finish college.....5

15. If most of the students here could go as far as they wanted in school, how far would they go?

Finish grade school.....1
Go to high school for a while.....2
Finish high school.....3
Go to college for a while.....4
Finish college.....5

38. How far do you think your best friend believes you will go in school?

Finish grade school.....1
Go to high school for a while.....2
Finish high school.....3
Go to college for a while.....4
Finish college.....5

45. How far do you think the teacher you like the best believes you will go in school?

Finish grade school.....1
Go to high school for a while.....2
Finish high school.....3
Go to college for a while.....4
Finish college.....5

47. Think of your teacher. Would your teacher say you can do school work better, the same or poorer than other people your age?

Better than all of them.....1
Better than most of them.....2
Same as most of them.....3
Poorer than most of them.....4
Poorer than all of them.....5

54. Does your teacher think you could finish college?

Yes, for sure.....1
Yes, probably.....2
Maybe.....3
Probably not.....4
No, for sure.....5

55. Remember you need more than four years of college to be a teacher or doctor. Does your teacher think you could do that?

Yes, for sure.....1
Yes, probably.....2
Maybe.....3
Probably not.....4
No, for sure.....5

56. How far do you think your parents believe you will go in school?

Finish grade school.....1
Go to high school for a while.....2
Finish high school.....3
Go to college for a while.....4
Finish college.....5

60. Do your parents think you could finish college?

Yes, for sure.....1
Yes, probably.....2
Maybe.....3
No, probably not.....4
No, for sure.....5

61. Remember, you need more than four years of college to be a teacher or doctor. Do your parents think you could do that?

Yes, for sure.....1
Yes, probably.....2
Maybe.....3
No, probably not.....4
No, for sure.....5

Student Climate Variable 4:
Student Perceived Teacher Push for Student Improvement

39. Of the teachers that you know in this school, how many tell students to try hard to do better on tests?

Almost all of the teachers.....1
Most of the teachers.....2
Half of the teachers.....3
Some of the teachers.....4
Almost none of the teachers.....5

49. How often do teachers in this school try to help students who do badly on their school work?

They always try to help.....1
They usually try to help.....2
They sometimes try to help.....3
They seldom try to help.....4
They never try to help.....5

52. How important is it to teachers in this school that their students learn their school work?

It is the most important thing to the teachers.....1
It is very important to the teachers.....2
It is somewhat important to the teachers.....3
It is not very important to the teachers.....4
It is not important at all to the teachers.....5

53. Think about the teachers you know in this school. Do you think the teachers in this school care more, or less, than teachers in other schools about whether or not their students learn their school work?

Teachers in this school care a lot more.....1
Teachers in this school care a little more.....2
There is no difference.....3
Teachers in this school care a little less.....4
Teachers in this school care a lot less.....5

Student Climate Variable 5:
Student Academic Competition Norms

11. How many students in this school try hard to get a good grade on their weekly tests?

Almost all of the students.....1
Most of the students.....2
Half of the students.....3
Some of the students.....4
Almost none of the students.....5

12. How many students in this school will work hard to get a better grade on the weekly tests than their friends do?

Almost all of the students.....1
Most of the students.....2
Half of the students.....3
Some of the students.....4
Almost none of the students.....5

17. How important do most of the students in this class feel it is to do well in school work?

They feel it is very important.....1
They feel it is important.....2
They feel it is somewhat important.....3
They feel it is not very important.....4
They feel it is not important at all.....5

18. How important do you think most of the students in this school feel it is to do well in school work?

They feel it is very important.....1
They feel it is important.....2
They feel it is somewhat important.....3
They feel it is not very important.....4
They feel it is not important at all.....5

50. Compared to students in other schools, how much do students in this school learn?

They learn a lot more in this school.....1
They learn a little more in this school.....2
About the same as in other schools.....3
They learn a little bit less in this school.....4
They learn a lot less in this school.....5

51. Compared to students from other schools, how well will most of the students from this school do in high school?

They will be among the best.....1
They will do better than most.....2
They will do about the same as most.....3
They will do poorer than most.....4
They will be among the worst.....5

Teacher Climate Variable 1:
Teacher Present Evaluations-Expectations of Students

19. On the average, what level of achievement can be expected of the students in this school?

Much above national norm.....1
Slightly above national norm.....2
Approximately at national norm.....3
Slightly below national norm.....4
Much below national norm.....5

20. On the average, what level of achievement can be expected of the students in your class?

Much above national norm.....1
Slightly above national norm.....2
Approximately at national norm.....3
Slightly below national norm.....4
Much below national norm.....5

21. What percent of the students in this <u>school</u> do <u>you</u> expect to complete high school?

90% or more.....1
70% to 89%.....2
50% to 69%.....3
30% to 49%.....4
Less than 30%.....5

22. What percent of the students in your <u>class</u> do <u>you</u> expect to complete high school?

90% or more.....1
70% to 89%.....2
50% to 69%.....3
30% to 49%.....4
Less than 30%.....5

29. How would you rate the academic ability of the students in this school compared to other schools?

Ability here is much higher.....1
Ability here is somewhat higher.....2
Ability here is about the same.....3
Ability here is somewhat lower.....4
Ability here is much lower.....5

30. What percent of the students in this school would you say want to complete high school?

90% or more.....1
70% to 89%.....2
50% to 69%.....3
30% to 49%.....4
Less than 30%.....5

31. What percent of the students in your class would you say want to complete high school?

90% or more.....1
70% to 89%.....2
50% to 69%.....3
30% to 49%.....4
Less than 30%.....5

37. What percent of the students in this school do you think the principal expects to complete high school?

90% or more.....1
70% to 89%.....2
50% to 69%.....3
30% to 49%.....4
Less than 30%.....5

41. How do you think your principal rates the academic ability of the students in this school, compared to other schools?

Rates it much better.....1
Rates it somewhat better.....2
Rates it the same.....3
Rates it somewhat lower.....4
Rates it much lower.....5

42. Completion of high school is a realistic goal which you set for what percentage of your students?

90% or more.....1
70% to 89%.....2
50% to 69%.....3
30% to 49%.....4
Less than 30%.....5

44. How often do you stress to your students the necessity of a post high school education for a good job and/or a confortable life?

Very often.....1
Often.....2
Sometimes.....3
Seldom.....4
Never.....5

62. How many of the parents of students in this school expect their children to complete high school?

Almost all of the parents.....1
Most of the parents.....2
About half of the parents.....3
Some of the parents.....4
Almost none of the parents.....5

Teacher Climate Variable 2:
Teacher Future Evaluations-Expectations of Students

23. What percent of the students in this school do you expect to attend college?

90% or more.....1
70% to 89%.....2
50% to 69%.....3
30% to 49%.....4
Less than 30%.....5

24. What percent of the students in your class do you expect to attend college?

90% or more.....1
70% to 69%.....2
50% to 69%.....3
30% to 49%.....4
Less than 30%.....5

25. What percent of the students in this school do you expect to complete college?

90% or more.....1
70% to 89%.....2
50% to 69%.....3
30% to 49%.....4
Less than 30%.....5

26. What percent of the students in your class do you expect to complete college?

90% or more.....1
70% to 89%.....2
50% to 69%.....3
30% to 49%.....4
Less than 30%.....5

27. How many of the students in this school are capable of getting mostly A's and B's?

90% or more.....1
70% to 89%.....2
50% to 69%.....3
30% to 49%.....4
Less than 30%.....5

28. How many of the students in your class are capable of getting mostly A's and B's?

90% or more.....1
70% to 89%.....2
50% to 69%.....3
30% to 49%.....4
Less than 30%.....5

32. What percent of the students in this school would you say want to go to college?

90% or more.....1
70% to 89%.....2
50% to 69%.....3
30% to 49%.....4
Less than 30%.....5

33. What percent of the students in your class would you say want to go to college?

90% or more.....1
70% to 89%.....2
50% to 69%.....3
30% to 49%.....4
Less than 30%.....5

63. How many of the parents of students in this school expect their children to complete college?

Almost all of the parents.....1
Most of the parents.....2
About half of the parents.....3
Some of the parents.....4
Almost none of the parents.....5

Teacher Climate Variable 3:
Teacher Perception of Parents' Value of Education

60. The parents of students in this school regard this school primarily as a "baby-sitting" agency.

Strongly agree.....1
Agree.....2
Not sure.....3
Disagree.....4
Strongly disagree.....5

61. The parents of students in this school are deeply concerned that their children receive a top quality education.

Strongly agree.....1
Agree.....2
Not sure.....3
Disagree.....4
Strongly disagree.....5

64. How many of the parents of students in this school don't care if their children obtain low grades?

Almost all of the parents.....1
Most of the parents.....2
About half of the parents.....3
Some of the parents.....4
Almost none of the parents.....5

65. How many of the parents of students in this school want feedback from the principal and teachers on how their children are doing in school?

Almost all of the parents.....1
Most of the parents.....2
About half of the parents.....3
Some of the parents.....4
Almost none of the parents.....5

Teacher Climate Variable 4:
Teacher Perceived Student Competition and Teacher Push

45. Do you encourage your students who do not have sufficient economic resources to aspire to go to college?

Always.....1
Usually.....2
Sometimes.....3
Seldom.....4
Never.....5

46. Do you encourage your students who do not have sufficient academic ability to aspire to go to college?

Always.....1
Usually.....2
Sometimes.....3
Seldom.....4
Never.....5

48. It would be unfair for teachers in this school to insist on a higher level of achievement from students than they now seem capable of achieving?

Strongly agree.....1
Agree.....2
Not sure.....3
Disagree.....4
Strongly disagree.....5

49. If I think a student is not able to do some school work, I don't try to push him very hard?

Strongly agree.....1
Agree.....2
Not sure.....3
Disagree.....4
Strongly disagree.....5

50. I am generally very careful not to push students to a level of frustration.

Strongly agree.....1
Agree.....2
Not sure.....3
Disagree.....4
Strongly disagree.....5

54. How many students in this school will try hard to do better school work than their friends do?

Almost all of the students.....1
Most of the students.....2
About half of the students.....3
Some of the students.....4
Almost none of the students.....5

55. How many students in your class will try hard to do better school work than their classmates do?

Almost all of the students.....1
Most of the students.....2
About half of the students.....3
Some of the students.....4
Almost none of the students.....5

Teacher Climate Variable 5:
Teacher Perception of Student Drive for Academic Improvement

52. How many students in this school try hard to improve on previous work?

Almost all of the students.....1
Most of the students.....2
About half of the students.....3
Some of the students.....4
Almost none of the students.....5

53. How many students in your class try hard to improve on previous work?

Almost all of the students.....1
Most of the students.....2
About half of the students.....3
Some of the students.....4
Almost none of the students.....5

56. How many students in this school are content to do less than they should?

Almost all of the students.....1
Most of the students.....2
About half of the students.....3
Some of the students.....4
Almost none of the students.....5

57. How many students in your class are content to do less than they should?

Almost all of the students.....1
Most of the students.....2
About half of the students.....3
Some of the students.....4
Almost none of the students.....5

58. How many students in this school will seek extra work so that they can get better grades?

Almost all of the students.....1
Most of the students.....2
About half of the students.....3
Some of the students.....4
Almost none of the students.....5

59. How many students in your class will seek extra work so that they can get better grades?

Almost all of the students.....1
Most of the students.....2
About half of the students.....3
Some of the students.....4
Almost none of the students.....5

Teacher Climate Variable 6:
Teacher-Principal Encouragement for Improvement

47. How many teachers in this school feel that all their students should be taught to read well and master other academic subjects, even though some students may not appear to be interested?

Almost all of the teachers.....1
Most of the teachers.....2
Half of the teachers.....3
Some of the teachers.....4
Almost none of the teachers.....5

51. How many teachers encourage students to seek extra school work so that the students can get better grades?

Almost all of the teachers.....1
Most of the teachers.....2
About half of the teachers.....3
Some of the teachers.....4
Almost none of the teachers.....5

75. How often does the principal and/or other administrators in this school assist and give support to the teachers on ways to improve their students' academic achievement?

Very often.....1
Often.....2
Sometimes.....3
Seldom.....4
Never.....5

78. When you are trying to improve your instructional program, how easy or difficult is it to get the principals assistance?

Very easy.....1
Easy.....2
Varies from time to time.....3
Difficult.....4
Very difficult.....5

Principal Climate Variable 1:
Principal Present Evaluations-Expectations of Students

36. On the average, what achievement level can be expected of the students in this school?

Much above national norm.....1
Slightly above national norm.....2
Approximately at national norm.....3
Slightly below national norm.....4
Much below national norm.....5

37. What percent of the students in this school do you expect to complete high school?

90% or more.....1
70% to 89%.....2
50% to 69%.....3
30% to 49%.....4
Less than 30%.....5

40. How many of the students in this school are capable of getting good grades?

90% or more.....1
70% to 89%.....2
50% to 69%.....3
30% to 49%.....4
Less than 30%.....5

54. What percentage of the students in this school do you feel are capable of learning to read by the end of the second grade?

100%.....1
90% to 99%.....2
80% to 89%.....3
70% to 79%.....4
50% to 69%.....5
Less than 50%.....6

38.

39.

41

Principal Climate Variable 2:
Principal Future Evaluations-Expectations of Students

38. What percent of the students in this school do you expect to attend college?

90% or more.....1
70% to 89%.....2
50% to 69%.....3
30% to 49%.....4
Less than 30%.....5

39. What percent of the students in this school do you expect to complete college?

90% or more.....1
70% to 89%.....2
50% to 69%.....3
30% to 49%.....4
Less than 30%.....5

41. How would you rate the academic ability of the students in this school compared to other schools?

Ability here is much higher.....1
Ability here is somewhat higher.....2
Ability here is about the same.....3
Ability here is somewhat lower.....4
Ability here is much lower.....5

45. How many of the parents of students in this school expect their children to complete college?

Almost all of the parents.....1
Most of the parents.....2
About half of the parents.....3
Some of the parents.....4
Almost none of the parents.....5

Principal Climate Variable 3:
Principal Perception of Parental Concern

42. The parents of students in this school regard this school as primarily a "baby-sitting" agency.

Strongly agree.....1
Agree.....2
Unsure.....3
Disagree.....4
Strongly disagree.....5

43. The parents of students in this school are deeply concerned that their children receive a top quality education.

Strongly agree.....1
Agree.....2
Unsure.....3
Disagree.....4
Strongly disagree.....5

44. How many of the parents of students in this school expect their children to complete high school?

Almost all of the parents.....1
Most of the parents.....2
About half of the parents.....3
Some of the parents.....4
Almost none of the parents.....5

46. How many of the parents of students in this school don't care if their children obtain low grades?

Almost all of the parents.....1
Most of the parents.....2
About half of the parents.....3
Some of the parents.....4
Almost none of the parents.....5

47. How many of the parents of students in this school want feedback from the principal and teachers on how their children are doing in school?

Almost all of the parents.....1
Most of the parents.....2
About half of the parents.....3
Some of the parents.....4
Almost none of the parents.....5

Principal Climate Variable 4:
Principal Evaluation of School

17. In your judgment, what is the general reputation of this school among educators?

Among the best.....1
Better than average.....2
About average.....3
Below average.....4
Inferior.....5

18. With regard to student achievement, how would you rate this school?

Among the best.....1
Better than average.....2
About average.....3
Below average.....4
Inferior.....5

19. With regard to student achievement, how good a school do you think this school <u>can</u> be?

Among the best.....1
Better than average.....2
About average.....3
Below average.....4
Inferior.....5

70. In general, how do your students' parents feel about the achievement of their children?

Nearly all feel they are doing well.....1
Most think students are achieving as well as they should.....2
Most think their children are NOT achieving high enough.....3
Nearly all think they are NOT achieving high enough.....4

71. In general, how do you feel about the achievement of the students in this school?

Nearly all students are achieving as well as they can.....1
Most students are achieving as well as they can.....2
Less than half the students are achieving as well as they can.....3
Only a few of the students are achieving as well as they can.....4

Principal Climate Variable 5:
Principal Efforts at Improving Achievement

56. **How often do you suggest ways of improving student achievement to your teachers?**

Very often.....1
Often.....2
Sometimes.....3
Seldom.....4
Never.....5

57. **How often do you meet with the teachers as a group to discuss ways of improving student achievement?**

Very often.....1
Often.....2
Sometimes.....3
Seldom.....4
Never.....5

APPENDIX C

INTERCORRELATIONS OF MEAN SCHOOL ACHIEVEMENT, MEAN SCHOOL SOCIO-ECONOMIC STATUS (SES), AND ACADEMIC CLIMATE VARIABLES

APPENDIX C

INTERCORRELATIONS OF MEAN SCHOOL ACHIEVEMENT, MEAN SCHOOL SOCIO-ECONOMIC STATUS (SES), AND ACADEMIC CLIMATE VARIABLES

	Achievement	SES	Student Reported Sense of Futility	Student Perceived Teacher Push for Academic Improvement	Student Academic Competition Norms	Student Perceived Present Evaluations-Expectations
Achievement	1.000	+.612	-.709	+.190	+.337	+.127
SES	+.612	1.000	-.768	+.217	+.088	+.227
Student Reported Sense of Futility	-.709	-.767	1.000	-.027	-.137	-.181
Student Perceived Teacher Push for Student Improvement	+.190	+.217	-.027	1.000	+.714	+.143
Student Academic Competition Norms	+.337	+.088	-.137	+.714	1.000	+.315
Student Perceived Present Evaluations-Expectations	+.127	+.227	-.181	+.143	+.315	1.000
Student Perceived Future Evaluations-Expectations	+.324	+.535	-.409	+.279	+.304	+.772
Teacher Present Evaluations-Expectations of Students	+.552	+.498	-.436	+.329	+.146	+.285
Teacher Future Evaluations-Expectations of Students	+.480	+.412	-.457	+.365	+.186	+.301

	Student Perceived Future Evaluations-Expectations	Teacher Present Evaluations-Expectations of Students	Teacher Future Evaluations-Expectations of Students	Teacher Perception of Parents' Value of Education	Teacher Perceived Student Competition and Teacher Push	Teacher Perception of Student Drive for Academic Improvement
Achievement	+.324	+.552	+.480	+.437	+.022	+.372
SES	+.535	+.498	+.412	+.130	-.367	-.026
Student Reported Sense of Futility	-.409	-.436	-.457	-.322	+.365	-.107
Student Perceived Teacher Push for Student Improvement	+.279	+.329	+.365	+.260	+.315	+.345
Student Academic Competition Norms	+.304	+.146	+.186	+.516	+.154	+.465
Student Perceived Present Evaluations-Expectations	+.772	+.285	+.301	+.207	+.071	-.097
Student Perceived Future Evaluations-Expectations	1.000	+.451	+.479	+.207	+.066	+.039
Teacher Present Evaluations-Expectations of Students	+.451	1.000	+.833	+.286	+.218	+.222
Teacher Future Evaluations-Expectations of Students	+.479	+.883	1.000	+.267	+.304	+.379
Teacher Perception of Parents' Value of Education	+.207	+.286	+.267	1.000	+.008	+.453

	Teacher-Principal Encouragement for Improvement	Principal Future Evaluations-Expectations of Students	Principal Perception of Parental Concern	Principal Evaluation of School	Principal Efforts at Improving Achievement	Principal Present Evaluations-Expectations of Students
Achievement	+.182	+.439	+.184	+.327	-.241	+.236
SES	-.298	+.579	+.084	+.467	-.390	+.313
Student Reported Sense of Futility	+.134	-.596	-.227	-.463	+.207	-.314
Student Perceived Teacher Push for Student Improvement	-.029	+.158	+.140	+.298	-.164	+.262
Student Academic Competition Norms	+.174	-.011	+.077	+.349	-.293	+.252
Student Perceived Present Evaluations-Expectations	+.281	+.083	-.088	+.025	-.158	-.032
Student Perceived Future Evaluations-Expectations	+.107	+.408	+.070	+.197	-.155	+.227
Teacher Present Evaluations-Expectations of Students	+.100	+.622	+.363	+.415	-.048	+.382
Teacher Future Evaluations-Expectations of Students	+.224	+.575	+.356	+.371	+.016	+.141
Teacher Perception of Parents' Value of Education	+.300	+.165	+.359	+.347	+.114	+.288

	Achievement	SES	Student Reported Sense of Futility	Student Perceived Teacher Push for Academic Improvement	Student Academic Competition Norms	Student Perceived Present Evaluations-Expectations
Teacher Perception of Parents' Value of Education	+.437	+.130	-.322	+.260	+.516	+.207
Teacher Perceived Student Competition and Teacher Push	-.022	-.367	+.365	+.315	+.154	+.0713
Teacher Perception of Student Drive for Academic Improvement	+.372	-.026	-.107	+.345	+.465	-.097
Teacher-Principal Encouragement for Improvement	+.182	-.298	+.134	-.029	+.174	+.281
Principal Future Evaluations-Expectations of Students	+.439	+.579	-.596	+.158	-.011	+.083
Principal Perception of Parental Concern	+.184	+.084	-.227	+.140	+.077	-.088
Principal Evaluation of School	+.327	+.467	-.463	+.298	+.349	+.025
Principal Efforts at Improving Achievement	-.241	-.390	+.207	-.164	-.293	-.158
Principal Present Evaluations-Expectations of Students	+.236	+.313	-.314	+.262	+.252	-.032

	Student Perceived Future Evaluations-Expectations	Teacher Present Evaluations-Expectations of Students	Teacher Future Evaluations-Expectations of Students	Teacher Perception of Parents' Value of Education	Teacher Perceived Student Competition and Teacher Push	Teacher Perception of Student Drive for Academic Improvement
Teacher Perception of Parents' Value of Education	+.207	+.286	+.267	1.000	-.008	+.453
Teacher Perceived Student Competition and Teacher Push	+.066	+.218	+.304	+.008	1.000	+.318
Teacher Perception of Student Drive for Academic Improvement	+.039	+.222	+.379	+.453	+.318	1.000
Teacher-Principal Encouragement for Improvement	+.107	+.100	+.224	+.300	+.429	+.240
Principal Future Evaluations-Expectations of Students	+.408	+.622	+.575	+.165	-.072	+.049
Principal Perception of Parental Concern	+.070	+.363	+.356	+.359	+.126	+.335
Principal Evaluation of School	+.197	+.415	+.371	+.347	-.272	+.031
Principal Efforts at Improving Achievement	-.155	-.048	+.016	+.114	+.146	+.024
Principal Present Evaluations-Expectations of Students	+.227	+.382	+.141	+.288	-.052	+.081

	Teacher-Principal Encouragement for Improvement	Principal Future Evaluations-Expectations of Students	Principal Perception of Parental Concern	Principal Evaluation of School	Principal Efforts at Improving Achievement	Principal Present Evaluations-Expectations of Students
Teacher Perception of Parents' Value of Education	+.300	+.165	+.359	+.347	-.114	+.288
Teacher Perceived Student Competition and Teacher Push	+.429	-.072	+.126	-.272	+.146	-.052
Teacher Perception of Student Drive for Academic Improvement	+.240	+.049	+.335	+.031	+.024	+.081
Teacher-Principal Encouragement for Improvement	1.000	-.100	-.080	-.155	-.046	-.233
Principal Future Evaluations-Expectations of Students	-.100	1.000	+.338	+.539	+.038	+.666
Principal Perception of Parental Concern	-.080	+.338	+1.000	+.451	+.433	+.411
Principal Evaluation of School	-.155	+.539	+.451	1.000	-.124	+.470
Principal Efforts at Improving Achievement	-.046	+.038	+.433	-.124	1.000	+.067
Principal Present Evaluations-Expectations of Students	-.233	+.666	+.411	+.470	+.067	1.000

APPENDIX D

MEANS AND STANDARD DEVIATIONS OF ACHIEVEMENT SOCIO-ECONOMIC STATUS (SES), AND ACADEMIC CLIMATE VARIABLES

APPENDIX D

MEANS AND STANDARD DEVIATIONS OF ACHIEVEMENT, SOCIO-ECONOMIC STATUS (SES), AND ACADEMIC CLIMATE VARIABLES

Variable	Mean	Standard Deviation
Achievement	53.84	8.09
SES	1.86	1.29
Student Reported Sense of Futility	38.34	2.54
Student Perceived Present Evaluations-Expectations	25.50	0.63
Student Perceived Future Evaluations-Expectations	44.65	1.49
Student Perceived Teacher Push for Student Improvement	17.52	0.70
Student Academic Competition Norms	22.72	0.83
Teacher Present Evaluations-Expectations of Students	45.29	5.15
Teacher Future Evaluations-Expectations of Students	24.06	5.14
Teacher Perception of Parents' Value of Education	15.26	1.65
Teacher Perceived Student Competition and Teacher Push	22.89	2.51

Variable	Mean	Standard Deviation
Teacher Perception of Student Drive for Academic Improvement	19.83	2.61
Teacher-Principal Encouragement for Improvement	15.57	1.50
Principal Present Evaluations-Expectations of Students	14.90	2.03
Principal Future Evaluations-Expectations of Students	9.24	3.24
Principal Perception of Parental Concern	21.83	2.68
Principal Evaluation of School	15.92	2.20
Principal Efforts at Improving Achievement	8.63	1.40

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